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Empowering Providers: Enhancing Women's Health

Issue: Current Update

Labor Room Practices

Urogynecology

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President's Message

Dear Friends,

Warm greetings on the occasion of Independence Day!

Our young and enthusiastic team of office bearers are putting their tireless efforts to match efforts of our predecessors. I hope you have found the previous issue on "Contraception and Viral Hepatitis" informative.

The theme for this month is "Urogynecology and Labour room practices" a subject common in day to day practice. It has considerable impact on the quality of life of a woman and yet not appropriately addressed. Management of labour is a real challenge, Inculcating healthy labour room practices can be a useful step in this direction.

Preparations for the 40th Annual conference of AOGD (24th & 25th November, 2018) are in full swing. You will be updated through the bulletin, WhatsApp, sms, & website etc. Registration and paper submission is open to all. We request all the members to avail early bird registration. Every year there are new entrants to the profession at Delhi and members are requested to enrol at least four members each for further strengthening our association.

We hope for active participation by all the AOGD members in the upcoming Annual Conference and various workshops.

The ballot papers for electing President and Vice Presidents for FOGSI have already arrived. Please put a mark against the candidate of your choice and post them as soon as possible.

Best wishes.

Regards

Dr Abha Singh
President AOGD (2018-19)

Secretary's Message

Greetings to all AOGD members

As we celebrate independence in the month of August let's pause for a minute and reflect on true independence of women in the country. Expression of thought, liberty to enjoy good health, independence to access a health facility should be a basic right of every woman which has been denied. All AOGD members should pledge that not only it is our duty to provide health care but these other needs of the woman also need to be looked after. Our association can go a long way in helping to achieve this goal.

July was a happening month with various subcommittees organising CME'S and updates. Adolescent Health committee organised a CME on adolescent health at Guru Govind Singh Hospital. CME on "Infertility: a recent update" on 14th July 2018 was held at LHMC. World hepatitis day was celebrated by an update on evidence based management of liver diseases in pregnancy at LHMC and was well attended. Rural Health committee was also active in doing their projects.

The editorial team has aptly emphasaised a topic "what's new in labor" and an update on urogynecology worth a read. Overactive bladder is an unaddressed problem of women and needs a careful evaluation and treatment.

Preparations for the Annual conference are on way. We hope we will be able to satisfy the quest to knowledge, provide recent updates and design skill enhancement sessions to suit all members of AOGD.

Abstract submission is open and details are there in this bulletin. We hope all will join us in the Annual conference in large numbers. It will be a pleasure for the organising team to meet all of you personally and take care of you. You are welcome to send in any input or suggestion on the following mail id secretarylhaogd18@gmail.com.

Happy Independence Day to all

Dr Kiran Aggarwal
Secretary AOGD (2018-19)

Monthly Clinical Meeting

Monthly Clinical Meet will be held at VMMC, Safdarjung Hospital, New Delhi
on **Friday, 31st August, 2018 from 04:00pm to 05:00pm**.

Editorial Team's Message

Dr Ratna Biswas
Editor

Dr Pikee Saxena

Dr Sharda Patra

Dr Swati Agrawal

Co-Editors

Dear Friends,

We are ready with another interesting issue this month, the theme topics being "Labor Room Practices" and "Urogynecology".

The opening article is on "Best practices to improve outcome -Standardizing labor & delivery practices". There is a lot of autonomy in the management of labor and a establishing a basic set of guidelines will ensure that quality care is delivered to all laboring women. Subsequent article on "Recent Advances in fetal surveillance in labor'' focuses on CTG interpretation and management during labor. Under our section on controversies, we have discussed "Induction of labor in difficult situations like previous cesarean, breech and twins". Finally the burning issue of how to reduce primary cesarean delivery rate has been dealt with in our case approach section.

The motivational article is on "Nurturing relationships, blossoming life: A tale of two souls". This exclusive article gives fresh insights on parenting.

In Urogynaecology section, we have discussed "Best practices in surgical management of female stress urinary incontinence". Choice of surgery and post-operative care is covered extensively. Voiding disturbance like retention of urine is common after surgery and almost always, it is amenable to expectant management. Proper assessment and follow up is essential for smooth recovery. Pelvic Organ Prolapse (POP) is a common condition seen in the gynecologic practice. So under the recent advances section we have dealt with the "Surgical anatomy and management of POP". Changing principles in it's management and emerging role of minimally invasive surgery is highlighted. Status of "Urodynamic evaluation in female incontinence" is covered in the controversy section. This article addresses the components of urodynamic evaluation and the parameters to be assessed in a simple way which makes it easy to remember it in the long run. "Case approach to overactive bladder" sums up the differential diagnosis and management of this common ailment in a very extensive manner with a complete coverage of the subject.

The maze of knowledge-crossword and the pictorial quiz is a brainteaser and will keep you engaged.

Journal scan section has brought forth some of the important reviews in recent times on overactive bladder, redefining active labor and induction in previous cesarean.

We have enjoyed compiling this issue and hope you have a memorable experience reading it. We sincerely thank all the contributors for their excellent work. We welcome any comments and suggestions from our readers.

Happy Reading !!!

Editorial Team

BEST PRACTICES TO IMPROVE OUTCOME

Standardising Labour and Delivery Practices

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Dr Meenakshi Singh

Introduction

During the intrapartum period and the first 24 hours of birth, 44% of all maternal deaths and 36% newborn deaths take place. Fifty percent of all stillbirths occur during labour, most of which can be prevented. As birth experience is an unforgettable and lifetime experience for a woman, we as obstetricians should try to make it successful by actions which would reduce the possibility of adverse outcome. Standardization of practice is an important goal because of the wide variation that exists in many areas of practice within obstetrics. Here we will discuss minimum standards of care and best practices to improve outcome in a labouring women and give them Quality of Care which means providing "All evidence based practices to every mother and newborn in a timely manner as per defined standards."

Effective Communication and Shared Decision Making

Communication should be "complete, clear, concise, and timely"[1]. As per ACOG, it is the moral responsibility of every physician to communicate honestly with patients, particularly for ones who experience an adverse outcome to increase trust, improve patient satisfaction and decrease exposure to liability. The patient and family should be involved in decision making and proper informed consent in local language should be taken.

Protocols and Checklists

Protocols and checklists have been shown to reduce patient harm through improved standardization and communication[2]. Standard Operating Procedures should be there for Biomedical waste management, patient safety, patient management in different high risk situations, labour monitoring and postnatal care. WHO has given" Safe Child Birth Checklist" to ensure complete and quality of care around birth.[11]

Respectful Maternity Care (RMC)

RMC is the key component of labor room practices to improve maternal and neonatal outcome

RMC includes 7 elements:

1. Freedom of mother from harm and ill treatment (eg. no unnecessary episiotomy)
2. Right to information, consent refusal, respect for choices and preferences.
3. Confidentiality.
4. Dignity and respect.
5. Equality, freedom from discrimination on any grounds, equitable care.
6. Timely and highest attainable level of healthcare.
7. Liberty, autonomy and freedom from coercion.

Standards of Care in a Term Woman in Spontaneous Labour

Obstetrician in collaboration with nurses, patients and their supporting family members can help women attain their goals for labor and birth by using techniques associated with minimal interventions and high patient satisfaction[3].

Latent Labour

Observational studies have found that admission in labor room in the latent phase of labor is associated with more arrests leading to cesarean sections in active phase and also an increase in the use of oxytocin, intrauterine pressure catheters and antibiotics for intrapartum fever(4).So they should be observed in wards till they enter active labor. Recent data from the Consortium for Safe Labor support updated definitions for latent and active labour which states that the onset of active labor for many women may not occur until 5–6 cm(5). These data suggest that expectant management is reasonable for women at 4–6 cm dilatation who are in latent labor and have reassuring maternal and fetal status. When women are admitted for pain or fatigue in latent labor, various techniques such as counselling and support, oral hydration, positions of comfort, and nonpharmacologic pain management manouvers such as massage or water immersion may benefit.

Term Pre Labour Rupture of Membranes

When membranes rupture at term before the onset of labor, approximately 77–79% of women will go into labor spontaneously within 12 hours, and 95% will start labor spontaneously within 24–28 hours. A woman with term PROM should be assessed for expectant management versus induction and woman needs to have appropriate information to make informed choices. Woman with term PROM who are considering a period of expectant care should be informed of the potential risks associated with expectant management and the limitations of available data. For informed women, if there are no other maternal or fetal reasons to expedite delivery, the choice of expectant management for a period of

time may be appropriately offered and supported[6]. For women who are Group B Streptococcus positive, however, administration of antibiotics for GBS prophylaxis should not be delayed while awaiting labor. In such cases, many patients and obstetric care providers may prefer immediate induction.

Support During Labor

In addition to regular nursing care, continuous one-to-one emotional support provided by support personnel is associated with improved outcomes for women in labor. Many randomized trials have shown benefits like shortened labor, decreased need for analgesia, fewer operative deliveries, and fewer reports of dissatisfaction with the experience of labor. An identified family member may be taught labor support techniques. Hence, concept of "Birth Companion" is being rolled out even in government facilities. Apart from emotional support to mother, birth companion would help in early identification of danger signs and early information to healthcare providers. Birth companion will provide support in basic care practices such as maintaining hydration of mother during labour, care of baby, initiation of breast feeding etc.

Routine Amniotomy not Preferred

Amniotomy is a common intervention in labor used alone or in combination with oxytocin to expedite labor progress but the need for elective amniotomy for women without a specific indication has been questioned. Various studies and trials suggest that for women with normally progressing labor and no evidence of fetal compromise, routine amniotomy need not be undertaken unless required to facilitate monitoring.

Intermittent Auscultation of Fetal Heart

Continuous electronic fetal heart rate monitoring (EFM) was introduced to reduce the incidence of perinatal death and cerebral palsy and as an alternative to the practice of intermittent auscultation. However, the widespread use of continuous EFM has not improved these outcomes when used for women with low-risk pregnancies. Performing regular intermittent auscultation ensures frequent contact between healthcare professional and the laboring woman, opportunity for clinical examination especially abdominal examination and facilitates freedom of movement of the woman. Hand-held Doppler's may also be used for intermittent fetal heart monitoring of low-risk women.

Labor Pain Relief

Multiple nonpharmacologic and pharmacologic techniques can be used to help women cope with labor pain. These techniques can be used sequentially or in combination. Some nonpharmacologic methods seem to help women cope with labor pain rather than directly alleviating the pain. On the other hand, pharmacologic methods mitigate pain, but they may not relieve anxiety or suffering. As an alternate to numeric pain scale Joint Commission has developed and approved a coping scale which asks, "On a scale of 1 to 10, how well are you coping with labor right now"? Use of the coping scale in conjunction with different nonpharmacologic and pharmacologic pain management techniques can help obstetricians to tailor interventions to best meet the needs of each woman. During the first stage of labor, water immersion has been found to lower pain scores. Intradermal sterile water injections, relaxation techniques, acupuncture, and massage all have demonstrated significant reductions in pain in many studies. Other techniques, such as childbirth education, transcutaneous electrical nerve stimulation, aromatherapy, or audioanalgesia, may help women cope with labor more than directly affect pain scores. In the hospital setting, pharmacologic analgesia should be available for all women in labor who desire medication[7]. ACOG (2017) makes following recommendations regarding pain relief during labour[8]:

- Neuraxial analgesia is the most effective and most commonly used therapy for pain relief during labor and delivery as it does not appear to increase the cesarean rate and, therefore, should not be withheld for that concern. Opioids are associated with adverse effects for the woman and the fetus or newborn, especially respiratory depression, so caution should be taken for respiratory status. (Level A Recommendations)
- Thrombocytopenia is a relative contraindication to neuraxial blockade, any safe lower limit for platelet count has not been established. (Level B Recommendation)
- In the absence of a medical contraindication, maternal request is a sufficient medical indication for pain relief during labor. Epidural and spinal analgesia or anesthesia are generally acceptable in a patient with a platelet count ≥ 80,000/microliter provided that the platelet level is stable, there is no other acquired or congenital coagulopathy, there is no platelet dysfunction and the patient is not receiving any antiplatelet or anticoagulant therapy. (Level C Recommendations)

Oral Intake in Labor

Women in spontaneously progressing labor may not require routine continuous infusion of intravenous fluids as it limits freedom of movement and may not be essential. Oral hydration should be encouraged to meet hydration and caloric needs. Current guidelines support oral intake of moderate amounts of clear liquids by women in labor who do not have complications. However, particulate-containing fluids and solid food should be avoided. Assessment of urinary output and the presence or absence of ketosis can be used to monitor hydration.

Maternal Position During Labor

Observational studies of maternal position during labor have found that women spontaneously assume many different positions over the course of labor as per their comfort. There is little evidence that any one position is best. Moreover, although many have encouraged a supine position during labor, this position has known adverse effects, including supine hypotension and more frequent fetal heart rate decelerations. Therefore, no particular position needs to be mandated. Frequent position changes during labor to enhance maternal comfort and promote optimal fetal positioning can be supported as long as adopted positions allow appropriate maternal and fetal monitoring and treatments and are not contraindicated by maternal medical or obstetric complications.

Active Labour

Partograhs to be strictly maintained to monitor progress of labor and timely intervention. Oral hydration has to be maintained as in latent labor along with pain management. Per vaginum assessment should be done 4 hourly or if indicated in between as in rupture of membranes, bleeding per vaginum, excessive uterine contractions, maternal bearing down. Repeated per vaginum examinations should be avoided.

Second Stage of Labor: Pushing technique

Many obstetricians often encourage women in labor to push with a prolonged, closed glottis effort (ie, Valsalva maneuver) during each contraction. However, when not directed to breathe in a specific way, women push with an open glottis. In consideration of the limited data regarding outcomes of spontaneous versus Valsalva pushing, each woman should be encouraged to use the technique that she prefers and is most effective for her.

Immediate Versus Delayed Pushing for Nulliparous Women with Epidural Analgesia

Offering nulliparous women with epidural analgesia, a rest period at full dilatation before pushing allows the fetal head to rotate and descend while conserving the woman's energy for pushing efforts. This practice is called delayed pushing, laboring down, or passive descent. Based on various studies, it is suggested that in the absence of an indication to expedite delivery, women (particularly those who are nulliparous with epidural analgesia) may be offered a period of rest of 1–2 hours at the onset of the second stage of labor unless the woman herself has an urge to bear down.[9]

Delivery of Head

For smooth and slow delivery of head and to avoid perineal injuries, one hand is used to support the perineum and another hand is used to control the fetal head delivery (Ritzen maneovre). Perineal support lowers the rate of anal sphincteric injuries. If there are inadequate expulsive efforts and delivery needs to be expedited, the modified Ritzen maneovre may be used, in which gloved fingers of one hand exert a forward pressure on the fetal chin through the perineum just in front of the coccyx and the other hands presses against the occiput.This favours fetal neck extension to help head pass through the introitus with its smallest diameter.

Third stage of Labour

WHO (2012) recommendations emphasize upon the use of uterotonic (oxytocin 10 IU) intramuscular within one minute of delivery as the central and essential component of AMTSL. Controlled cord traction and sustained uterine massage still remain the components of AMTSL, but are optional components.

Immediate Postnatal Monitoring-best Practices

All postpartum women should be monitored closely for first 24 hours of birth for general condition, pulse, BP, temperature, vaginal bleeding, uterine tone, fundal height starting from first hour of birth. If first BP is normal, second BP should be measured within 6 hours. Patient should pass urine within 6 hours of delivery.

Immediately after birth, baby should be dried thoroughly and assessed for breathimg. Cord should be clamped and cut only after 1-3 minutes, unless resuscitation is required and routine suctioning is avoided. During first hour of birth, baby should be in skin to skin contact with mother for warmth and initiation of breast feeding. After around one hour, a full clinical examination of baby and other routine and preventive care is provided such as vitamin K prophylaxis and hepatitis B vaccination. (within 24 hours of birth)[10]

Antibiotics in Labour

According to GOI guidelines (2015), antibiotics in labour and delivery are recommended in following situations[10]:

1. Maternal fever more than 38 deg C/ 100.5deg F
2. Foul smelling vaginal discharge
3. Prolong labour lasting more than 24 hours.
4. Obstructed labour
5. Planned Caesarean section.
6. Lower abdominal tenderness after delivery.
7. Manual removal of placenta.
8. Preterm prelabour rupture of membranes (before 37 weeks)
9. Prolonged rupture of membranes: more than 12 hours without labour pains and more than 18 hours with labour pains.
10. If mother has third or fourth degree perineal tear.

Don’ts of Labour Room

1. No routine enema
2. No routine shaving. If required only clipping of hair to be done.
3. No routine induction/augmentation of labor
4. No place for routine suctioning of the baby
5. No pulling of the baby. Allow natural slow delivery (3 minutes – 1min for head, 1 min for shoulders and 1min for body).
6. No routine episiotomy
7. No fundal pressure
8. No immediate cord cutting unless baby needs immediate resuscitation.
9. No immediate bathing of the newborn
10. No routine resuscitation on warmer (every baby should not be kept on radiant warmer unless there is an indication)

Infection Prevention

Hand washing, personal protective equipment, disinfection and sterilisation remain the mainstay to achieve the best from all practices observed in labour rooms. Temperature of labour room should be around 26-28 degree C and should be drought free.

Audits and Quality Improvement

Facility-level audit of all cases of maternal/neonatal deaths, stillbirth, maternal near miss and caesarian section audits are a tool to reinforce standardization of practices. GOI has introduced LaQshya (Labour Room Quality Improvement Initiative) as a step to give standardised care to all labouring women.

Conclusion

Optimal maternal health outcomes can best be achieved in an atmosphere of effective communication, shared decision-making, protocols and SOPs and data-driven quality improvement initiative. There should be a continnum of standard care provision to all women in labour room at all times.

References

1. Communication strategies for patient handoffs. ACOG Committee Opinion No. 367. American College of Obstetricians and Gynecologists. ObstetGynecol 2007;109: 1503–5.
2. Patient safety in obstetrics and gynecology. ACOG Committee Opinion No. 447. American College of Obstetricians and Gynecologists. ObstetGynecol 2009;114:1424–7
3. Approaches to limit intervention during labor and birth. Committee Opinion No. 687. American College of Obstetricians and Gynecologists. ObstetGynecol 2017; 129: e20–8
4. Wood AM, Frey HA, Tuuli MG, Caughey AB, Odibo AO, Macones GA, et al. Optimal admission cervical dilation in spontaneously laboring women. Am J Perinatol 2016; 33: 188–94.
5. Safe prevention of the primary cesarean delivery. Obstetric Care Consensus No. 1. American College of Obstetricians and Gynecologists. ObstetGynecol 2014; 123:693–711.
6. Dare MR, Middleton P, Crowther CA, Flenady V, Varatharaju B. Planned early birth versus expectant management (waiting) for prelabour rupture of membranes at term (37 weeks or more). Cochrane Database of Systematic Reviews 2006, Issue 1. Art. No.: CD005302. DOI: .1002/14651858. CD005302.pub2.
7. Levels of maternal care. Obstetric Care Consensus No. 2. American College of Obstetricians and Gynecologists. ObstetGynecol 2015;125:502–15.
8. Obstetric analgesia and anesthesia. Practice Bulletin No. 177. American College of Obstetricians and Gynecologists. Obstet Gynecol. 2017;129:e73–89.
9. Yee LM, Sandoval G, Bailit J, Reddy UM, Wapner RJ, Varner MW, et al. Maternal and neonatal outcomes with early compared with delayed pushing among nulliparous women. Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) Maternal–Fetal Medicine Units (MFMU) Network. ObstetGynecol 2016;128:1039–47.
10. WHO.2013.Recommendations on Postnatal Care of the Mother and Newborn.October 2013.Geneva:WHO
11. World Health Organization. The WHO Safe Childbirth Checklist Collaboration. http://www.who.int/patientsafety /implementation/checklists/childbirth_collaboration_ engaging/en/ (Accessed 01 July 2018).

RECENT ADVANCES

Fetal Surveillance in Labor

Monika Madaan Gaur
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Dr Monika Madaan Gaur

One of the greatest challenges that clinicians face on a daily basis is the task of delivering a vigorous and neurologically healthy infant. Any results short of this goal prompts the obstetrician and the woman to scrutinize the methods and results of intrapartum fetal monitoring process. Thus we discuss here the techniques used to assess fetal well being during passage from intrauterine to extrauterine life.

The goal of intrapartum fetal surveillance is to detect fetal decompensation by assessing certain fetal heart characteristics that precede brain injury. A compromised fetus has features of increase in pCO2, decrease in pO2 and pH which are reflected as changes in FHR characteristics.

The mode of FHR monitoring must be discussed with the woman and her wishes and concerns must be taken into account.

Labor Support

Continuous labor support in the form of emotional support, comfort measures, advocacy and provision of information is associated with decreased use of intrapartum pain medications, reduced use of regional anaesthesia and analgesia, decreased operative vaginal delivery, decreased cesarean births and decreased likelihood of report of negative experiences.[1]

Intermittent Auscultation (IA)

IA is the recommended method for women without risk factors.

Use either stethoscope or doppler ultrasound.

Carry out IA immediately after contraction for atleast 1 minute.

If any FHR abnormality is suspected, palpate the maternal pulse to differentiate between two heart rates.

In active first stage auscultate FHR every 15 minute and every 5 minute in second stage of labor [NICE 2014, ACOG 2009][2,3].

Subtle variations from baseline include absent FHR variability and sinusoidal patterns that cannot be detected using auscultation.[4]

Electronic Fetal Monitoring (EFM)

- EFM may be performed with an external or internal monitor.
- EFM is recommended for pregnancies at risk of adverse perinatal outcome.
- EFM is associated with overall increased cesarean delivery rate and increased operative vaginal delivery rate. Although studies showed no reduction in perinatal mortality and cerebral palsy but reduction in risk of neonatal seizures is evident.[5]
- Always consider the antenatal, intrapartum risk factors and current wellbeing of woman, fetus and progress of labor while interpreting CTG trace.
- Frequency of interpretation: ACOG recommends evaluating CTG trace every 15 minute during active first stage and every 5 minute during second stage of labor. NICE recommends systematic assessment of condition of woman and fetus hourly or more frequently if there are concerns.

EFM Interpretation

CTG Interpretation according to ACOG 2009 and its management (Table 1)

Category	Management
Category 1 • Baseline rate: 110-160 bpm • Baseline FHR variability: moderate (6-25 bpm) • Late or variable decelerations: absent • Early decelerations: present or absent • Accelerations: present or absent	• Strongly predictive of normal fetal acid base status. • No action required.
Category 2 Baseline Rate • Bradycardia (<110 bpm) not accompanied by absent baseline variability • Tachycardia (>160 bpm) Baseline FHR variability • Minimal baseline variability (<5 bpm) • Absent baseline variability with no recurrent decelerations. • Marked baseline variability (>25 bpm) Accelerations • Absence on induced accelerations after induced fetal stimulation. Periodic or episodic decelerations • Recurrent variable decelerations with minimal or moderate baseline variability • Prolonged deceleration more than 2 min but less than 10 min • Recurrent late decelerations with moderate baseline variability • Variable deceleration with slow return to baseline, overshoots or shoulders	• Not predictive of abnormal fetal acid base status. • Require evaluation and continued surveillance. • Resuscitative measures in the form of maternal O2, change in maternal position, discontinuation of labor stimulation, treatment of maternal hypotension, treatment of tachysystole with FHR changes.
Category 3 • Absent baseline FHR variability and any of the following: - Recurrent late decelerations - Recurrent variable decelerations - Bradycardia • Sinusoidal pattern	• Associated with abnormal acid base status. • Resuscitative measures as above • Require prompt evaluation • Delivery undertaken if FHR changes do not resolve

CTG Interpretation according to NICE 2014 (Table 2)

	Normal/ Reassuring	Nonreassuring	Abnormal
Baseline (bpm)	100-160	161-180	Above 180 or below 100
Baseline variability (bpm)	5 or more	Less than 5 for 30-90 min	Less than 5 for over 90 min
Decelerations	None or early	Variable decelerations: • dropping from baseline by 60 bpm or less and taking 60 sec or less to recover • present for over 90 min • occuring with over 50%of contractions OR Variable decelerations: • dropping from baseline by more than 60 bpm or taking 60 sec to recover • present for upto 30 min • occuring with over 50%of contractions OR Late decelerations: • present for upto 30 min • occuring with over 50%of contractions	Non reassuring variable decelerations : • still observed 30 min after starting conservative measures • occuring with over 50%of contractions OR Late decelerations: • present for over 30 min and do not improve with conservative measures • occuring with over 50%of contractions OR Bradycardia or a single prolonged deceleration lasting 3 min or more

Management based on CTG traces according to NICE 2014 (Table 3)

Category	Interpretation	Management
Normal/ Reassuring	• No nonreassuring or abnormal feature • healthy fetus	• Continue CTG and normal care • If CTG started due to concerns in IA, remove CTG after 20 min if no nonreassuring feature
Nonreassuring	• 1 non reassuring feature and 2 normal / reassuring features • May be associated with fetal acidosis	• Resuscitative measures including left lateral position, oral or iv fluids, stopping oxytocin, paracetamol if fever and tocolysis if tachysystole
Abnormal	• 1 abnormal feature and 2 non reassuring features • More likely to be associated with fetal acidosis	• Resuscitative measures as above • Offer to take FBS or expedite birth if an FBS cannot be obtained and there are no accelerations on scalp stimulation • Act within 30 min if late decelerations are accompanied by tachycardia and reduced baseline variability

Fetal Scalp Stimulation

- Digital fetal scalp stimulation during a vaginal exam provides an indirect assessment of acid-base status. The aim is to elicit a sympathetic nerve response, and an acceleratory response to stimuli may be indicative of a normoxic fetus. (6)
- An acceleration of 15 bpm amplitude with a duration of 15 seconds has been shown to have a very high negative predictive value (i.e., normal tracing) and very high sensitivity with regard to the absence of fetal acidosis.
- If FBS is contraindicated or is unsuccessful, FHR response to fetal scalp stimulation during vaginal examination can elicit information about fetal well being
- Digital scalp stimulation is best avoided during a deceleration, as the deceleration reflects a vagal response that prevents any sympathetic nerve response during scalp stimulation.

Fetal Blood Sample (FBS)

- Invasive procedure
- Contraindicated in cases of risk of fetal bleeding disorders and maternal to fetal transmission of infection
- Take FBS in left lateral position.
- Measure either lactate or pH
- Classification of FBS results is shown in Table 4

Lactate (mmol/l)	pH	Interpretation
_< 4.1	>_7.25	Normal
4.2-4.8	7.21-7.24	Borderline
>_4.9	<_7.20	Abnormal

- Interpretation of FBS results
- If FBS is normal repeat within 1 hour if indicated.
- If FBS is borderline repeat in 30 min if indicated by CTG or earlier if additional nonreassuring or abnormal features are seen.
- If CTG remains unchanged and the FBS result is stable after a second test, further samples may be deferred until additional nonreassuring or abnormal features are seen.

Additional Points

- Certain drugs like morphine, betamethasone, dexamethasone, cocaine, magnesium sulfate, terbutaline, zidovudine can affect FHR patterns.
- Store CTG traces for 25 years preferably electronically or photocopied.
- If there is risk of birth asphyxia, store them indefinitely.

Fetal Pulse Oximetry

- Fetal pulse oximetry continuously monitors intrapartum fetal O_2 saturation. A sensor is placed

transvaginally through the cervix to rest against the fetal cheek or temple, requiring cervical dilatation (~ 2 cm or more) and ruptured amniotic membranes with a cephalic presentation.

- Fetal pulse oximetry, with or without electronic fetal surveillance, is not recommended for routine use.

ST analysis for Intrapartum Fetal Monitoring (STAN)

STAN combines standard CTG monitoring with concurrent assessment of the fetal ECG. Both the ST wave and the T wave are analysed by the STAN software in order to detect subtle changes in the waveforms that may be indicative of myocardial hypoxia.

Cardiac hypoxia and ischaemia can cause ST depression and inversion of the T wave similar to the changes that are seen on an ECG performed on an adult with ischaemic heart disease. The STAN software is able to detect all such changes and prompts the clinician that such changes have occurred.

The STAN software analyses the average waveform of the fetal ECG signal over 30 consecutive heartbeats. It then compares this waveform with the average of each of the subsequent 30 complexes. By doing so it is able to determine the ST segment and T wave changes over time and alerts the user to this by signalling the occurrence of a 'STAN event'.

ST analysis is a relatively new adjunct to CTG monitoring. It is currently not recommended for routine use for fetal monitoring.

Conclusion

The intent of clinical practice guidelines is to provide the best current, evidence-based recommendations on a particular topic but they may not be appropriate for all patient populations or health care facilities. Local institutions should use guidelines appropriate to their setting and model their policies and procedures on recognized national recommendations when possible.

Communication and documentation strategies and skills need to be of utmost importance. Consistent use of electronic fetal monitoring terminology and classification is crucial. Women should be well informed of recommendations and options for fetal surveillance in pregnancy and during labor. Their choices for fetal surveillance in labor should be respected. An effective quality assurance program should be in place in all institutions to assure standards, monitor outcomes, and make systemic changes as indicated.

References

1. Fetal Health Surveillance: Antepartum and Intrapartum Consensus Guideline. September JOGC Septembre 2007.
2. Intrapartum fetal heart rate monitoring: nomenclature, interpretation, and general management principles. ACOG Practice Bulletin No. 106. American College of Obstetricians and Gynecologists. Obstet Gynecol 2009;114:192–202. Intrapartum care for healthy women and babies
3. Intrapartum care for healthy women and babies. NICE Clinical guideline Published: 3 December 2014. nice.org.uk/guidance/cg190.
4. Parer JT. Handbook of fetal heart rate monitoring. 2nd ed. Philadelphia: W.B. Saunders ;1997.
5. Alfirevic Z, Devane D, Gyte GML. Continuous cardiotocography (CTG) as a form of electronic fetal monitoring (EFM) for fetal assessment during labour. Cochrane Database of Systematic Reviews 2006, Issue 3. Art. No.: CD006066. DOI: 10.1002/14651858.CD006066. (Meta- analysis)
6. Skupski DW, Eglinton GS. Intrapartum fetal stimulation tests: a meta- analysis. Obstet Gynecol 2002;100(4):830.

Calendar of Monthly Clinical Meetings 2018-19

Months	Name of the Institute
August, 2018	VMMC & Safdarjung Hospital
September, 2018	Deen Dayal Upadhyay Hospital
October, 2018	ESI Hospital
November, 2018	MAMC & LN Hospital
December, 2018	Sir Ganga Ram Hospital
January, 2019	Dr RML Hospital
February, 2019	UCMS & GTB Hospital
March, 2019	LHMC
April, 2019	Apollo Hospital

CONTROVERSIES

Induction in High Risk Pregnancy: Previous cesarean section, breech, twins


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"A perfect baby is the expectation of all parents and perfect outcome is the mission of obstetrician". So to achieve this goal the obstetricians are hesitant to deliver certain high risk cases like previous cesarean, breech etc. Also increasing litigation, catastrophic complication (like scar rupture) and diminished expertise in breech vaginal delivery make cesarean section a preferred surgical procedure. But its advantage does not justify its continuous increase. Cesarean section reduces the risk of operative vaginal delivery and associated risk of pelvic floor trauma. It also reduces the risk of hypoxic cerebral damage to the baby. On the other hand it has potential disadvantage like risk of placental abnormalities (accreta, previa), bladder and bowel injury, uterine rupture in subsequent pregnancy in addition to well known post surgical complication like infection, hemorrhage and thrombotic events .Let's review what the evidence say regarding induction in various high risk cases like previous section, breech and twins.

Previous Cesarean Section

Until 2010, cesarean sections were limited to 8.5% of all deliveries in the country, just under the recommended level of 10-15%, according to a World Health Organization (WHO) report [1]. Recent data from the National Family Health Survey 2014-15 (NFHS-4) reveals that at the all India level the rate of C-sections have doubled over the last decade, while in last 20 years, it has risen six times. In some states like Telangana, Tripura, West Bengal, Kerala, Goa, Andhra Pradesh and Tamil Nadu, the rate is alarmingly high, with Telangana (74.9%) having the highest number of Cesarean section deliveries in private hospitals.

And so obstetricians are facing an increasing number of situations in which birth planning after previous caesarean and decisions surrounding possible labour induction and induction methods are required.

For many decades it was believed that "once a cesarean always a cesarean". After the introduction of low transverse uterine incision many women have successful vaginal birth after cesarean (VBAC). VBAC avoids major abdominal surgery, lower risk of hemorrhage, infection and shorter hospital stay. It also help women to avoid future risk associated with multiple cesarean like adhesion, bladder and bowel injury, hysterectomy, blood transfusion, infection, abnormal placentation. But trial of labour after cesarean (TOLAC) carry the risk of uterine rupture, hemorrhage, infection, operative injury and hysterectomy. So there are benefits and risk associated with planned elective repeat cesarean section (ERCS) and planned induction of labour in women with a previous cesarean delivery.

Decisions should always be made on an individual basis. Guidelines are currently not able to make a valid, general recommendation for any option over another.

1. A medical indication is required for induction of labour (all guidelines).
2. Women should be made aware that the greatest risk of adverse outcome occurs in trial of VBAC resulting in emergency cesarean delivery(RCOG - Grade B)[2]
3. Women should be informed that induction of labour carries a 2- to 3-fold increased risk of uterine rupture (approx. 1–1.5%) and a 1.5-fold increased chance of caesarean delivery in induced or augmented labour compared with spontaneous VBAC labour. (RCOG – Grade D).[2]
4. A specialist obstetrician must be involved in the decision to induce labour and the choice of induction method (RCOG).[2]
5. Induction of labour remain an option in women undergoing TOLAC(ACOG level B)[3]
6. Mechanical methods of labour induction (transcervical balloon catheter, amniotomy) are associated with lower risk of scar rupture compared with induction using prostaglandins (RCOG – Grade D).[2]
7. Intracervical Foley catheters are acceptable agents (II-2B) that are safe in the setting of a vaginal birth after Caesarean section (I-B)[4,5]
8. Oxytocin induction maybe considered in the hospital setting of vaginal birth after Caesarean section. (II-3B)[4]
9. Prostaglandins E2 (cervical and vaginal) should not be used in the setting of vaginal birth after Caesarean section due to the increased risk of uterine rupture. (II-2D) (SOGC 2013 - 2D)[4,5]
10. Women may be offered induction of labour with vaginal PGE2, caesarean section or expectant management on an individual basis, taking into account the woman's circumstances and wishes. And informing about increased risk for emergency caesarean section and uterine rupture.(Nice 2008)[6]
11. Misoprostol should not be used for induction of labour or cervical ripening in the third trimester after previous caesarean (ACOG – Level 1, SOGC –II-3D, AAFP recommendation 5, WHO).[3,4,5,7,8]

There are no randomized controlled trials to determine the lowest risk method of induction of labour with a previous cesarean delivery. More high-quality randomized controlled trials are needed to find out

which method is best for mothers and babies. However, such trials are unlikely to be carried out because they would need a very large number of participants in order to study the risk of infrequent but serious outcomes (such as rupture of the woman›s uterus). Other types of studies (i.e. non-randomized controlled trials) might be the best alternative. Future research could focus on those methods of induction that are believed to be effective and have a low risk of serious harm.

Thus, induction of labour in previous cesarean section should be made on case to case basis by a senior consultant with access to details of previous surgery. It may be offered to patients in singleton pregnancy with single previous lower segment scar after ruling out other contraindication to vaginal delivery with transcervical balloon catheter, amniotomy and oxytocin in a suitably staffed and well equipped delivery centre with continuous intrapartum monitoring with facility of immediate surgical delivery after proper counseling and consents.

Breech

In the year 2000, researchers conducted a large, international multicenter randomized clinical trial comparing a policy of planned cesarean delivery with planned vaginal delivery (Term Breech Trial)[9]. These investigators noted that perinatal mortality, neonatal mortality, and serious neonatal morbidity were significantly lower among the planned cesarean delivery group compared with the planned vaginal delivery group, although there was no difference in maternal morbidity or mortality observed between the groups.[9] Given the results of this exceptionally large and well-controlled clinical trial, various guidelines recommended that planned vaginal delivery of a term singleton breech was no longer appropriate.[10,11] Since then the rate of cesarean delivery for breech has increased so the risk of complication in future pregnancies may become apparent.

In 2006 both RCOG and ACOG recommend planned vaginal delivery of a term singleton breech fetus may be reasonable under hospital-specific protocol guidelines in certain circumstances.[12,13] However after reviewing the various guidelines induction of labour is not recommended in breech.

- Women should be informed that induction of labour is not usually recommended. Augmentation of slow progress should only be considered if the contraction frequency is low in the presence of epidural analgesia. (Level D RCOG)[14]
- Oxytocic agents to induce or augment labour should be avoided in the presence of a breech presentation because they may disguise fetopelvic disproportion. Oxytocin, however, may be used for the delivery of the aftercoming head and vaginal breech delivery should be conducted by a senior obstetrician.[15]
- Induction of labor is not recommended for breech presentation. (II-3B) Oxytocin augmentation is acceptable in the presence of uterine dystocia. (II-1A).[16]
- If external cephalic version is unsuccessful, declined or contraindicated, and the woman chooses not to have an elective caesarean section, induction of labor should be offered, if delivery is indicated, after discussing the associated risks with the woman.[6]

There is good evidence that vaginal delivery of term breech presentation is a safe option in well selected cases. However, guidelines regarding induction of labour in breech are inconsistent and its safety is not clearly established. However two large retrospective studies conducted recently show that induction of labour in breech presentation can be a safe option. In a retrospective study conducted by Macharey G in which 268 singleton term breech deliveries with an attempted vaginal delivery were identified. Out of these, 73 cases had an induction of labor for various medical and obstetric reasons and were compared to 195 spontaneous singleton breech deliveries. The vaginal delivery rate was significantly lower in induced than in spontaneous breech deliveries. The neonatal and maternal morbidity and mortality rates were similar implying that induction in breech delivery is an option[17].

In another retrospective study of 1684 breech delivery, labor induction was done in 221 cases (76% with prostaglandins, 24% with oxytocin). There were no differences in cesarean rate and perinatal morbidity between both methods of induction or spontaneous onset of labor. Induction of labor in breech presentation at term is a reasonable and effective option after a careful selection of cases[18].

Till the safety of induction in breech is clearly established, the women presented with breech at term should be offered external cephalic version after ruling out all contraindication to vaginal delivery. They should be advised on the risks and benefits of ECV and the implications for mode of delivery. (Level A RCOG)

Labor induction for breech presentation may be considered in particular circumstances, such as when the woman declines caesarean section or ECV and must be reviewed by the consultant. The decision needs to be made on a case-by-case basis, after full discussion of the associated risks.

Twins

With increasing use of ART and socio demographic changes in our population there has been an increase in multiple pregnancies. Twin pregnancies are associated with increased risks of complications such as gestational diabetes, gestational hypertension, preeclampsia, and intra hepatic cholestasis. Thus, complications of twin pregnancies are frequently seen and termination of pregnancy often indicated by any of the option

- Cesarean
- Vaginal delivery
- Non-vertex second twin vaginal delivery
  - o External cephalic version
  - o Breech extraction
  - o Cesarean of twin B for non-vertex presentation

Numerous methods for induction of labour have been used in twin pregnancies, but data on safety and efficacy are limited. Published studies of this subject are few in number and small in size and, to date, results and experiences from labour induction of singletons are extrapolated to twins. Standards established for single gestations may not be applicable to twin gestations, since the circumstances for labour and delivery differ.

After going through various guidelines following recommendation are made regarding induction in twins.

- Monochorionic diamniotic twins can be offered elective delivery unless there are other specific clinical indications for cesarean section. Monoamniotic monochorionic twins have high risk of fetal death, they should be delivered by cesarean section between 32 to 34weeks(level of recommendation A&D respectively)[19]
- Uncomplicated twins more than 38 weeks can be induced.[4]
- Women with uncomplicated twin pregnancies may be offered elective birth (by induction of labour or caesarean section) from 37 weeks 0 days.[20]
- Oxytocin augmentation may be used before the delivery of first twin and in between twins for hypotonic contraction[21]

WHO in 2011 issued guidelines on induction of labour but no recommendation was made as there was insufficient evidence to issue a recommendation at or near term uncomplicated twin pregnancy

The potential advantages of induction of labour have to be balanced against any associated adverse consequences, such as an increased risk of caesarean delivery. In a large study conducted by Jon F.R. Barrett et al in which total of 1398 women (2795 fetuses) were randomly assigned to planned cesarean delivery and 1406 women (2812 fetuses) to planned vaginal delivery. In twin pregnancy between 32 weeks 0 days and 38 weeks 6 days of gestation, with the first twin in the cephalic presentation, planned cesarean delivery did not significantly decrease or increase the risk of fetal or neonatal death or serious neonatal morbidity, as compared with planned vaginal delivery[22].

In another large study conducted on twin pregnancies where the first twin was in a cephalic presentation and who presented for labor induction, were non-randomly assigned to receive prostaglandin or amniotomy and/or oxytocin. Both methods of induction, PG or no PG, are associated with the same high rate of unplanned CS, but are safe for use in induction of labor in twins.[23]

To conclude women with diamniotic monochorionic and diamniotic dichorionic can be offered induction of labor with first twin in vertex position and no other contraindication of vaginal delivery. Various method like foley catheter, amniotomy and oxytocin can be used safely but further studies are needed to determine the effectiveness and safety of various induction methods in twin pregnancy.

References

1. Luz Gibbons, José M. Belizán, Jeremy A Lauer, Ana P Betrán, Mario Merialdi and Fernando Althabe.The Global Numbers and Costs of Additionally Needed and Unnecessary Caesarean Sections Performed per Year: Overuse as a Barrier to Universal Coverage. WHO report 2010
2. RCOG Greentop Guideline No 45. Birth after previous Caesarean Birth. 2015
3. ACOG Practice Bulletin no. 184. Vaginal birth after caesarean delivery. 2017
4. SOGC clinical practice guideline no. 296. Induction of Labour: Review. 2013
5. SOGC clinical practice guideline no. 155. Guidelines for vaginal birth after previous caesarean birth. 2005
6. Nice clinical guideline 70.Induction of labour.2008
7. American academy of family physician. Clinical practice guideline planning for labor and vaginal birth after cesarean. 2014
8. WHO recommendations for Induction of labour. 2011
9. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR. Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial. Term Breech Trial Collaborative Group. Lancet. 2000; 356(9239):1375-83
10. ACOG committee opinion Number 265. Mode of term singleton breech delivery. December 2001
11. RCOG clinical guideline no 20 The management of breech presentation.2001
12. ACOG committee opinion Number 340. Mode of term singleton breech delivery., December 2006
13. RCOG guideline no 20b. The management of breech presentation. 2006
14. RCOG guideline no 20b. The management of breech presentation.March 2017
15. National clinical guideline no 38. The management of breech presentation institute of obstetricians and gynaecologists, royal college of Physicians of Ireland and the Clinical Strategy and Programmes Division, January 2017
16. SOGC Clinical practice guideline No 26. Vaginal Delivery of Breech Presentation. June 2009
17. Macharey G, Ulander VM, Heinonen S, Kostev K, Nuutila M, Väisänen-Tommiska M. Induction of labor in breech presentations at term: a retrospective observational study. Arch Gynecol Obstet. 2016 Mar;293(3):549-55. Epub 2015 Aug 28
18. Burgos J, Arana I, Garitano I, Rodríguez L, Cobos P, Osuna C, Del Mar Centeno M, Fernández-Llebrez L.Induction of labor in breech presentation at term: a retrospective cohort study.J Perinat Med. 2017 Apr 1;45(3):299-303.
19. RCOG clinical guideline 51.Monochorionic twin pregnancy management. November 2016
20. Multiple pregnancy NICE guideline draft February 2011
21. SOGC consensus statement (Part 1) no91. Management of Twin Pregnancies. July 2000)
22. Barrett JF, Hannah ME, Hutton EK, Willan AR, Allen AC, Armson BA, et al. A randomized trial of planned cesarean or vaginal delivery for twin pregnancy. New Eng J Med. 2013; 369(14):1295–305.)
23. Mei-Dan E, Asztalos EV, Willan AR and Barrett JF. The effect of induction method in twin pregnancies: a secondary analysis for the twin birth study.BMC Pregnancy and Childbirth BMC series – open, inclusive and trusted201717:9.

CASE APPROACH

Reduction of Primary Cesarean Delivery Rates

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Caesarean section has revolutionized maternity care and saved lives of millions of women and babies. However over the last few decade cesarean rate has increased and in 2011 one in three women who gave birth in the United States did so by caesarean delivery[1]. Not only in US, a five fold increase by 2014 was seen in Europe too. The Indian scenario is a complete paradox. In parts of rural India, the caesarean rates are as low as 2-3% accounting for high maternal and perinatal mortality. Whereas in urban India, even in public sector hospitals of Delhi the caesarean section rates are as high as 19-35% and in private sector the rate is still higher accounting for 40-70% of the deliveries.

Although caesarean delivery can be life-saving for the fetus, the mother, or both in certain cases, the rapid increase in the rate of caesarean births without evidence of concomitant decreases in maternal or neonatal morbidity or mortality raises significant concern that caesarean delivery is overused[2].

The WHO states that any increase in caesarean section rates above 10-15% does not improve maternal or neonatal outcomes. Therefore, it is important for health care providers to understand that caesareans must be performed only when medically indicated and should not be used as a surgery of convenience either for the doctor or for the patient.

Balancing Risks and Benefits

Childbirth by its very nature carries potential risks for the woman and her baby, regardless of the route of delivery. Most pregnancies are low-risk pregnancies, and caesarean delivery appears to pose greater risk of maternal morbidity and mortality than vaginal delivery.

Table 1. Risk of Adverse Maternal and Neonatal Outcomes by Mode of Delivery

Outcome	Risk	
Maternal	*Vaginal Delivery*	*Cesarean Delivery*
Overall severe morbidity and mortality	8.6%	9.2%
	0.9%	2.7%
Maternal mortality	3.6:100,000	13.3:100,000
Amniotic fluid embolism	3.3-7.7:100,000	15.8:100,000
Third-degree or fourth-degree perineal laceration	1.0-3.0%	NA
Placental abnormalities	Increases with each subsequent cesarean delivery.	
Urinary incontinence	No difference at 2 years of delivery.	
Postpartum depression	No difference	
Respiratory morbidity	< 1.0%	1.0-4.0% (without labor)

A large population-based study from Canada found that the risk of severe maternal morbidities-like hemorrhage, uterine rupture, anesthetic complications, venous thromboembolism, major infection increased threefold for cesarean delivery as compared with vaginal delivery (2.7% versus 0.9%, respectively)[4]. There also are concerns regarding the long-term risks associated with cesarean delivery, particularly those associated with subsequent pregnancies. The incidence of placental abnormalities, such as placenta previa and morbidly adherent placenta previa in future pregnancies increases with each subsequent cesarean delivery, from 1% with one prior cesarean delivery to almost 3% with three or more prior cesarean deliveries. These complications not only increases maternal morbidity but also increases the risk of adverse neonatal outcomes[3,5,6].

Indications for Primary Caesarean

There is great regional variation in the caesarean section rates globally. In the Scandinavian countries like Sweden, Denmark and Netherlands its as low as 10%, yet having the worlds lowest maternal and perinatal mortality rates.

Variation in the rates of nulliparous term singleton vertex (Primary) caesarean births indicates the clinical practice patterns in hospitals. For instance in private sector hospitals in India the percentage is as high as 40-70% as compared to public sector 19-35%.

Maternal characteristics, such as age, weight and ethnicity, do not account fully for the increase in the caesarean delivery rate[8-10]. Other potentially modifiable factors, such as patient preferences and practice variation among hospitals, systems and health care providers, are likely contribute to the escalating caesarean delivery rates

Arrest of labor typically called as non progress of labor and abnormal or indeterminate fetal heart rate tracing counted as fetal distress accounted for more than one half of all primary caesarean deliveries.

Safe reduction of the rate of primary caesarean deliveries will require different approaches for each of these indications

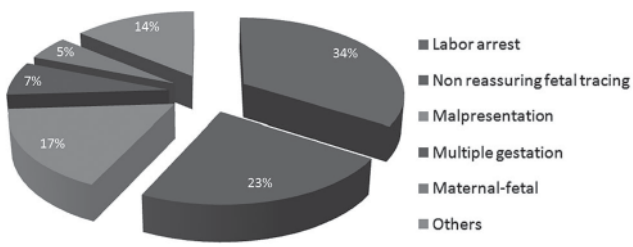

Figure1. Indications for primary cesarean delivery.

Factors responsible historically for these rising Primary cesarean rates in India

1. The concept of solo (consultant centric) practice especially in private hospitals
2. No assigned labour room team (nurses, doula etc). Continuous rotation of staff.
3. No fixed clinical protocols or labour manuals
4. Not much emphasis paid on patient education (importance of exercises in pregnancy, timely check ups, identifying warning signs, antenatal workshops etc)
5. Poor doctor/ nurse to patient ratio. Over burdened health providers especially in public sector.
6. Inefficient CTG training
7. No audits being conducted time to time
8. Lack of continuous time to time training and upgrading knowledge of doctors and paramedics especially in private sector.

Change in approach- in order to reduce the primary caesarean section rates

Organisational changes
Care Providers

1. Following standard clinical practice
2. New clinical leadership
3. Quality department- conducting Audits time to time
4. Close collaboration with IHI's perinatal community
5. Adopting the Robsons classification in data analysis

Clinical interventions

1. **Eliminate elective deliveries/ inductions <39weeks for low risk pregnancies**
2. **No non medically indicated caesarean or inductions**
3. Setting protocols and labor room manuals
4. Standardized definition- failed induction and arrest of labor.
5. Effectie trial in second stage of labor
6. CTG training of staff (doctors/nurses)
7. Admitting low risk pregnancies in labor at dilatation >3cm
8. Quit solo practice, adopting group practice by consultants in private sectors

Expecting mothers

1. **Antenatal education (workshops and handouts)**
2. **Partner support and education throughout pregnancy and labour-delivery**
3. **Counselling**
4. **Physiotherapy and exercise**
5. **labour support 1:1**

ACOG Recommendations for the Safe Prevention of the Primary Cesarean Delivery	
Recommendations	**Grade of Recommendations**
First stage of labor	
A prolonged latent phase (>20 hours in nulliparous women and >14 hours in multiparous women) should not be an indication for cesarean delivery.	1B Strong recommendation, moderate quality evidence
Slow but progressive labor in the first stage of labor should not be an indication for cesarean delivery.	1B Strong recommendation, moderate quality evidence
Cervical dilation of 6 cm should be considered the threshold for the active phase of most women in labor.	1B Strong recommendation, moderate quality evidence
Cesarean delivery for active phase arrest in the first stage of labor should be >/= 6 cm of dilation with ruptured membranes who fail to progress despite 4 hours of adequate uterine activity, or at least 6 hours of oxytocin administration with inadequate uterine activity and no cervical change.	1B Strong recommendation, moderate quality evidence
Second stage of labor	
A specific absolute maximum length of time spent in the second stage of labor beyond which all women should undergo operative delivery has not been identified.	1C Strong recommendation, low quality evidence
Before diagnosing arrest of labor in the second stage, if the maternal and fetal conditions permit, allow for the following: • At least 2 hours of pushing in multiparous women and 3 hours of pushing in nulliparous women (1B). Additional 1 hour in case epidural analgesia is used.	1B Strong recommendation, moderate quality evidence
Operative vaginal delivery in the second stage of labor by experienced and well trained physicians should be considered	1B Strong recommendation, moderate quality evidence
Manual rotation of the fetal occiput in the setting of fetal malposition in the second stage of labor is a reasonable intervention to consider before moving to operative vaginal delivery or cesarean delivery..	1B Strong recommendation, moderate quality evidence

Fetal heart rate monitoring	
Amnioinfusion for repetitive variable fetal heart rate decelerations may safely reduce the rate of cesarean delivery.	1A Strong recommendation, high quality evidence
Scalp stimulation can be used as a means of assessing fetal acid–base status when abnormal or indeterminate fetal heart patterns are present and is a safe alternative to cesarean delivery.	1C Strong recommendation, low quality evidence
Induction of labor	
Before 41 0/7 weeks of gestation, induction of labor generally should be performed based on maternal and fetal medical indications.	1A Strong recommendation, high quality evidence
Cervical ripening methods should be used when labor is induced in women with an unfavorable cervix.	1B Strong recommendation, moderate quality evidence
If the maternal and fetal status allow, cesarean deliveries for failed induction of labor in the latent phase can be avoided by allowing longer durations of the latent phase (up to 24 hours or longer) and requiring that oxytocin be administered for at least 12–18 hours after membrane rupture before deeming the induction a failure.	1B Strong recommendation, moderate quality evidence
Fetal malpresentation	
Fetal presentation should be assessed and documented beginning at 36 0/7 weeks of gestation to allow for external cephalic version to be offered.	1C Strong recommendation, low quality evidence
Suspected fetal macrosomia	
Cesarean delivery to avoid potential birth trauma should be limited to estimated fetal weights of at least 5,000 g in women without diabetes and at least 4,500 g in women with diabetes., particularly late in gestation, are imprecise. In Indian scenario cut off is 4500g in women without diabetes and 4000g in women with diabetes.	2C Weak recommendation, low quality evidence
Excessive maternal weight gain	
Women should be counselled about the maternal weight guidelines in an attempt to avoid excessive weight gain.	1B Strong recommendation, moderate quality evidence
Twin gestations	
Perinatal outcomes for twin gestations in which the first twin is in cephalic presentation are not improved by cesarean delivery. Thus, women with either cephalic/cephalic-presenting twins or cephalic/noncephalic presenting twins should be counseled to attempt vaginal delivery.	1B Strong recommendation, moderate quality evidence
Other	
Individuals, organizations, and governing bodies should work to ensure that research is conducted to provide a better knowledge base to guide decisions regarding cesarean delivery and to encourage policy changes that safely lower the rate of primary cesarean delivery.	1C Strong recommendation, low quality evidence

How to reduce second stage caesarean section rates?

The second stage of labor begins when the cervix becomes fully dilated and ends with delivery of the neonate.

Parity, delayed pushing, use of epidural analgesia, maternal body mass index, birth weight, occipital posterior position, and fetal station at complete dilation all have been shown to affect the length of the second stage of labor[26]. In the era of electronic fetal monitoring, adverse neonatal outcomes generally have not been associated with the duration of the second stage of labor. In a multicenter randomized study of fetal pulse oximetry, of 4,126 nulliparous women who had a longer duration of active pushing was not associated with adverse neonatal outcomes, even in women who pushed for more than 3 hours[12].

However, a longer second stage of labor >3hours is associated with adverse maternal outcomes, such as higher rates of puerperal infection, third and fourth-degree perineal lacerations and postpartum hemorrhage[27]. Moreover, for each hour of the second stage, the chance for spontaneous vaginal delivery decreases progressively.

However the consequences of prolonged second stage duration appear to be low with appropriate monitoring.

Here comes the role of **operative vaginal delivery** (via either vacuum or forceps), which have decreased significantly during the past 15 years[14].

Though the comparison of the outcomes of operative

vaginal deliveries and unplanned caesarean deliveries shows no difference in serious neonatal morbidity.

Fewer than 3% of women in whom an operative vaginal delivery has been attempted go on to deliver by caesarean[15]. However, the number of health care providers who are adequately trained to perform forceps and vacuum deliveries is decreasing. Ongoing training in operative delivery skills remains a challenge,

Further down the lane, occipital posterior and transverse positions are associated with an increase in caesarean delivery and neonatal complications[17,18]. So, **manual rotation of the fetal occiput** should be attempted. Intrapartum ultrasonography can be used for accurate diagnosis of fetal position when the digital examination results are doubtful[19,20].

Foetal distress - second most common indication of caesarean

Category I fetal heart tracings are normal and do not require intervention unlike the category 3 CTG tracings which are abnormal, demanding immediate intervention.

However most intrapartum fetal heart rate tracings are Category II, which is where the dilemma arise. Most caesarean deliveries done for non reassuring fetal heart rates belong to this category. These are indeterminate, require evaluation, continued surveillance, initiation of appropriate corrective measures[21].

Scalp stimulation can be done when the cervix is dilated to assure that the fetus is not acidotic. Conservative measures - position change and amnioinfusion with normal saline also has been demonstrated to resolve variable fetal heart rate decelerations[22-23] and reduce the incidence of cesarean delivery.

Continuous Labor and Delivery Support- is the key to success

A Cochrane meta-analysis of 12 trials and more than 15,000 women demonstrated that the presence of continuous one-on-one support during labor and delivery was associated with improved patient satisfaction and a statistically significant reduction in the rate of cesarean delivery. Modal for education of patients and families should be developed. Education should begin from the early antenatal period, in the form of handouts explaining benefits of healthy eating habits and exercise. Conducting workshops for preparation for normal labor and normal delivery is helpful. Families especially husbands were encouraged to participate in care and in promoting concept of normal delivery .Team based clinical care to be promoted for a stress free work environment.

Our journey of reducing interventions in maternity care is a complex ongoing challenge. The culture change in the department with emphasis on the physiological basis of pregnancy and childbirth are the guiding principles which will make us walk on the road of success.

References

1. Hamilton BE, Hoyert DL, Martin JA, Strobino DM, Guyer B. Annual summary of vital statistics: 2010-2011. Pediatrics 2013;131:548–58. Gregory KD, Jackson S, Korst L, Fridman M. Cesarean versus vaginal delivery: whose risks? Whose benefits? Am J Perinatol 2012;29:7–18
2. Guise JM, Eden K, Emeis C, Denman MA, Marshall N, Fu R, et al. Vaginal birth after cesarean: new insights. Evidence Report/Technology Assessment No.191. AHRQ Publication No. 10-E003. Rockville (MD): Agency for Healthcare Research and Quality; 2010. Available at: http://www.ahrq.gov/research/findings/evidence-based-reports/vbacup-evidence-report.
3. Liu S, Liston RM, Joseph KS, Heaman M, Sauve R, Kramer MS. Maternal mortality and severe morbidity associated with low-risk planned cesarean delivery versus planned vaginal delivery at term. Maternal Health Study Group of the Canadian Perinatal Surveillance System. CMAJ 2007;176:455–60.
4. Marshall NE, Fu R, Guise JM. Impact of multiple cesarean deliveries on maternal morbidity: a systematic review. Am J Obstet Gynecol 2011;205:262.e1–262.
5. Smith GC, Pell JP, Dobbie R. Caesarean section and risk of unexplained stillbirth in subsequent pregnancy. Lancet 2003; 362:1779–84.
6. Solheim KN, Esakoff TF, Little SE, Cheng YW, Sparks TN, Caughey AB. The effect of cesarean delivery rates on the future incidence of placenta previa, placenta accreta, and maternal mortality. J Matern Fetal Neonatal Med 2011; 24: 1341–6.
7. Declercq E, Menacker F, MacDorman M. Maternal risk profiles and the primary cesarean rate in the United States, 1991-2002. Am J Public Health 2006;96:867–72.
8. Declercq E, Menacker F, MacDorman M. Rise in "no indicated risk" primary caesareans in the United States, 1991-2001: cross sectional analysis. BMJ 2005;330:71–2.
9. Rhodes JC, Schoendorf KC, Parker JD. Contribution of excess weight gain during pregnancy and macrosomia to the cesarean delivery rate, 1990-2000. Pediatrics 2003; 111: 1181–5.
10. Rouse DJ, Weiner SJ, Bloom SL, Varner MW, Spong CY, Ramin SM, et al. Second-stage labor duration in nulliparous women: relationship to maternal and perinatal outcomes. Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. Am J Obstet Gynecol 2009;201:357. e1–357.e7.
11. Le Ray C, Audibert F, Goffinet F, Fraser W. When to stop pushing: effects of duration of second-stage expulsion efforts on maternal and neonatal outcomes in nulliparous women with epidural analgesia. Am J Obstet Gynecol 2009; 201: 361.e1–361.e7.
12. Cheng YW, Shaffer BL, Bianco K, Caughey AB. Timing of operative vaginal delivery and associated perinatal outcomes in nulliparous women. J Matern Fetal Neonatal Med 2011; 24:692–7.
13. Srinivas SK, Epstein AJ, Nicholson S, Herrin J, Asch DA. Improvements in US maternal obstetrical outcomes from 1992 to 2006. Med Care 2010;48:487–93.

GYNAECOLOGY

The Best Practices in Surgical Management of Female Stress Urinary Incontinence


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Stress urinary incontinence (SUI) is a condition of involuntary loss of urine on effort, physical exertion, sneezing, or coughing that is often bothersome to the patient and frequently affects quality of life. Women with SUI should be informed that the condition may affect the quality of life rather than be a health risk.

Preoperative Assessment

In the initial evaluation of patients with stress urinary incontinence desiring to undergo surgical intervention, the following components should be included: (Clinical Principle)[1]

- History, including assessment of bother
- Physical examination, including a pelvic examination
- Objective demonstration of SUI with a comfortably full bladder (any method)
- Assessment of post-void residual urine (any method)
- Urinalysis

Additional evaluations should be performed in patients being considered for surgical intervention who have the following conditions: (Expert Opinion)[1]

- Inability to make definitive diagnosis based on symptoms and initial evaluation
- Inability to demonstrate stress urinary incontinence
- Known or suspected neurogenic lower urinary tract dysfunction
- Abnormal urinalysis, such as unexplained hematuria or pyuria
- Urgency-predominant mixed urinary incontinence
- Elevated post-void residual urine
- High grade pelvic organ prolapse (POP-Q stage 3 or higher) if SUI not demonstrated with pelvic organ prolapse reduction
- Evidence of significant voiding dysfunction

Urodynamic testing (multi-channel filling and voiding cystometry) before surgery should be offered in women who have:

- symptoms of OAB leading to a clinical suspicion of detrusor overactivity, **or**
- symptoms suggestive of voiding dysfunction **or** anterior compartment prolapse, **or**
- had previous surgery for stress incontinence.

In the small group of women where pure SUI is diagnosed based on a detailed clinical history and examination, urodynamic study can be avoided.

Ambulatory urodynamics or videourodynamics should only be considered if the diagnosis is unclear after conventional urodynamics.[2]

Routine cystoscopy before surgery is not recommended.

Choice of Surgery

If conservative management for SUI has failed, mid-urethral slings, autologous slings and open retropubic colposuspension are appropriate surgical options for women with uncomplicated SUI (GR A) and after appropriate treatment in women with MUI who have stress-predominance or fail medical management.

Do not offer anterior colporrhaphy, needle suspensions, paravaginal defect repair and the Marshall-Marchetti-Krantz procedure for the treatment of SUI[2].

Following points should also be taken into consideration, which might influence the decision for choice of surgery.

- Relative degree of Urethral Hypermobility and ISD (intrinsic sphincter deficiency)
- Previous trial of conservative treatment
- Need for concomitant surgeries like genital prolapse, hysterectomy and fistula repair
- Patient's life style: Sedentary/heavy physical activity
- Age and overall medical condition of patient
- Previous pelvic or retropubic surgery
- Previous abdominal surgery or mesh hernia repair
- Previous fractured pelvis or road traffic accident
- Problems with hip abduction

In women with Mixed Urinary Incontinence (MUI), consider an initial trial of medication for Urge Urinary Incontinence (UUI) regardless of the dominant symptom. Inform women with MUI about the unpredictable long-term resolution of urgency symptoms, even after surgical management.

Burch colposuspension and autologous rectus fascial sling should continue to be recommended because synthetic tapes are unacceptable for some women.

Discuss the potential for failed correction, intraoperative injury, postoperative retention, erosion, infection or voiding dysfunction. Women should be advised of the risks and prognosis for different procedures so that an informed decision can be made[2] **Table 1**[3].

Refer women to an alternative surgeon if their chosen procedure is not available from the consulting surgeon.[1]

Table 1. Cure/dry rates of different anti-incontinence procedures for SUI (3)

Category	Procedure	Objective cure rate (short term)	Objective cure rate (long term)	Level of evidence	Comments
BNS	AFS	90%	82% after 48 months	A	
	CFS	74%	80% up to 43 months	B	
	Porcine dermis	73%	54% at 36 months	B	Not recommended
MUS	Retropubic (TVT)	88%	90% at 10 years	A	Similar subjective cure rate (83%), TOT less complications
	TOT	84%	84% at 5 years	B	
Open colposuspension	Burch	85-90%	70% at 5 years	A	MMK, needle suspension and paravaginal defect repair not recommended
	MMK				

SUI: stress urinary incontinence; BNS: bladder neck sling; MUS: midurethral sling; AFS: autologous sling; TVT: transvaginal tape; TOT: transobturator tape; MMK: Marshall-Marchetti-Krantz.

Laparoscopic colposuspension is not recommended for routine surgical treatment of SUI (GR A).[2] However, it might be considered in women who need a concomitant laparoscopic surgery and, in these cases, experienced laparoscopic surgeons should perform it (GR D).[3]

Synthetic Mid-Urethral Tape

Inform women choosing a synthetic mid-urethral sling about the generally low rate of complications, broad range of global data showing efficacy and safety, the small possibility of irreversible tape-related adverse events and the consequent need for long-term follow up. When offering a synthetic mid-urethral tape (MUS) procedure, surgeons should:

- Use procedures and devices for which there is current high-quality evidence of efficacy and safety
- Only use a device that they have been trained to use
- Use a device manufactured from type 1 macroporous (pore size > 75 microns allowing macrophages, fibroblasts, blood vessels, collagen fibres to penetrate pores) polypropylene tape

If women are offered a procedure involving the *transobturator approach*, make them aware of the lack of long-term outcome data.[2] The ‘‘inside out’’ route associated with significantly fewer vaginal angle injuries but higher risk of postoperative groin pain.

Warn women who are being offered transobturator insertion of MUS about the higher risk of pain and dyspareunia in the longer term. (GR A)[4]

Warn women who are being offered a *retropubic insertion* of MUS about the relatively higher risk of peri-operative complications compared to transobturator insertion. (GR A)[4] Following precautions may avoid these complications.

- Empty bladder before dissection & insertion on each side
- Use bladder catheter & obturator to deviate the bladder to“45 Degree”
- Use Finger guidance to direct the needle and protect the urethra
- Keep TVT needle in a plane from Mid-Labia Majora towards ipsilateral shoulder while maintaining position directly behind Pubic Bone

Use ‘bottom-up’ retropubic tape approach. Choose ‘top-down’ approach only as part of a clinical trial.[2]

Warn women who are being offered a *single-incision sling* that long-term efficacy remains uncertain. (GR A)[5] The evidence on the safety of single-incision short sling mesh insertion for SUI in women shows infrequent but serious complications. These include lasting pain, discomfort and failure of the procedure. The mesh implant is intended to be permanent but, if removal is needed because of complications, the anchoring system can make the device very difficult or impossible to remove. The evidence on efficacy in the long term is inadequate in quality and quantity.[2]

Do a cystourethroscopy as part of the insertion of a MUS (GR C)[4]. If bladder Injury is recognised at the time of cystoscopy, needle should be withdrawn and repositioned more laterally. Bladder drainage for 1-3 days will heal the injury.

Autologous Fascial Sling

Warn women undergoing autologous fascial sling (AFS) that there is a high risk of voiding difficulty than MUS and the need to perform clean intermittent self-catheterisation; ensure they are willing and able to do so. (GR C)[4]

AFS is an effective treatment for SUI that has longevity and may be more effective than other biological and synthetic slings (grade A). The porcine dermal graft appears to lose tensile strength over time and is associated with a decreased cure rate compared to AFS and MUS.[3]

Stem Cell Therapy

Physicians should not offer this for stress incontinent patients outside of investigative protocols. (Expert Opinion)[2]

Bulking Agents

Consider intramural bulking agents (silicone, carbon-coated zirconium beads or hyaluronic acid/dextran

copolymer) for the management of SUI in selected cases. Inform women choosing a bulking agent about the need for multiple sessions and poor long-term efficacy. Do not offer autologous fat and polytetrafluoroethylene as intramural bulking agents[2].

Artificial Urinary Sphincter

Counsel patients opting for AUS (artificial urinary sphincter), about the lack of good quality evidence regarding the procedure and need for life long follow up because of involved risk of malignancy[2].

Special Cases

In patients with SUI and a fixed, immobile urethra (often referred to as 'ISD') who wish to undergo treatment, physicians should offer pubovaginal slings/ Bladder neck Slings (gr A), retropubic MUS, urethral bulking agents, or AUS (Gr B). (Expert Opinion)[1]

Physicians should not place a mesh sling if the urethra is inadvertently injured at the time of planned MUS procedure. (Clinical Principle)

Physicians should not utilize a synthetic MUS in patients undergoing concomitant urethral diverticulectomy, repair of urethrovaginal fistula, or urethral mesh excision and SUI surgery. (Clinical Principle)

Physicians should strongly consider avoiding the use of mesh in patients undergoing SUI surgery who are at risk for poor wound healing (e.g., following radiation therapy, presence of significant scarring, poor tissue quality). (Expert Opinion)

In patients undergoing concomitant surgery for pelvic prolapse repair and SUI, physicians may perform any of the incontinence procedures (e.g., MUS, pubovaginal sling, Burch colposuspension). (Conditional Recommendation; Evidence Level: Grade C), but surgery for prolapse should be performed first to avoid displacement of sling if done afterwards.

Physicians may offer patients with SUI and concomitant neurologic disease affecting lower urinary tract function (neurogenic bladder) surgical treatment of SUI after appropriate evaluation and counselling have been performed. (Expert Opinion)

Physicians may offer synthetic MUS, in addition to other sling types, to the following patient populations after appropriate evaluation and counselling have been performed: (Expert Opinion)[2]

- Patients planning to bear children
- Diabetes
- Obesity
- Geriatric

Postoperative Assessment

First follow up should be offered within the early postoperative period to assess if patients are having any significant voiding problems, pain, or other unanticipated events. If patients are experiencing any of these outcomes, they should be seen and examined. (Expert Opinion). Early intervention may ameliorate potential complications in patients who have had SUI surgery.

Asymptomatic patients should be seen and examined by their treating surgeon within six months post-operatively. Patients with unfavourable outcomes may require additional follow-up. (Expert Opinion)

The subjective outcome of surgery as perceived by the patient should be assessed and documented. Patients should be asked about residual incontinence, ease of voiding/force of stream, recent urinary tract infection, pain, sexual function and new onset or worsened overactive bladder symptoms.

A physical exam, including an examination of all surgical incision sites, should be performed to evaluate healing, tenderness, mesh extrusion (in the case of synthetic slings), and any other potential abnormalities.

A post-void residual should also be obtained. A standardized questionnaire (e.g. PGI-I) may be considered.[1]

The FDA conducted a review of Medical Device Reports (MDRs) received from Jan. 1, 2008 through Sept. 30, 2011 & received 1,876 reports of complications associated with surgical mesh devices used to repair SUI.

The most common complications, in descending order of frequency, include:

1. Pain
2. Vaginal mesh erosion (exposure/ extrusion/ protrusion)
3. Infection,
4. Urinary problems,
5. Recurrent incontinence,
6. Pain during sexual intercourse (dyspareunia),
7. Bleeding,
8. Organ perforation,
9. Neuro-muscular problems
10. Vaginal scarring.

With the exception of **mesh erosion**, the above complications can occur following a non-mesh surgical repair for SUI. Erosion of mesh slings through the vagina is the most commonly reported mesh-specific complication from SUI surgeries with mesh. The average reported rate at one year is ~ 2 %. It is sometimes treated successfully with vaginal cream or an office procedure where the exposed piece of mesh is cut. In some cases of mesh erosion, it may be necessary to return to the operating room to remove part or all of the mesh[6].

Transient **postoperative VD** (Voiding dysfunction) has been reported to be within the range of 2.5 to 36% after surgery for SUI and pelvic organ prolapse (POP)[6,7].

Expectant management is initially appropriate as early retention may be due to postoperative pain, edema and inflammation **[Table 2]**[8]. Indeed, most patients with transient post- operative urinary retention resume normal voiding following midurethral sling within 1-2 days of the procedure. Return to normal voiding may be delayed for 1-2 weeks in women with a history of prior or concomitant surgery for SUI or POP[9,10]. Conservative measures like temporary Foley catheter drainage, timed voiding, biofeedback, pelvic floor muscle training, clean intermittent self-catheterization, selective medical treatment and urethral dilatation can be tried[11]. **Table 2** Risk Factors for Postoperative Urinary Retention[8]

Demographic risk factors	Surgical risk factors
Age > 50	Pelvic surgery (gynecologic and colorectal)
Female sex	Spinal anesthesia
Lower body mass index (BMI)	Intraoperative fluid administration > 750 mL
Advanced pelvic organ prolapse	Estimated blood loss >100 mL
Baseline bladder dysfunction	Postoperative opioid use
Previous incontinence surgery	Postoperative UTI

Abbreviations: UTI, urinary tract infection; POUR, postoperative urinary retention.

When conservative measures fail, surgical release for refractory postoperative VD procedures has been indicated for 1-2% of women[12,13]. This is more common after retropubic sling procedures[12,14]. Surgical intervention for VD may consist of mobilization, division of the sling or urethrolysis typically through a vaginal approach **[Table 3]**[8]. Retropubic or a combined vaginal and retropubic technique are rarely necessary. Successful sling mobilization is possible only in early interventions. If the mobilization attempt fails, the sling is cut at the midline or laterally. Urethrolysis entails more dissection and entry into the retropubic space. It may occasionally require mobilization of the urethra from the pubic bone. Unless the release procedure is delayed too long, urethrolysis is rarely necessary for today's slings[11].

Table 3 Management of POUR (8)

Early POUR (< 6 weeks post-surgery)	Prolonged POUR (> 6 weeks post-surgery)
Identification of incomplete emptying Rule out overcorrection of UVJ angle Passive bladder drainage Reassess voiding intermittently*	Surgical options: sling stretching, sling release, partial sling resection, or urethrolysis Nonsurgical options: acupuncture etc.

Note: *If using indwelling foley, can repeat voiding trial weekly; if patient is self- catheterizing, can keep a bladder diary and assess PvR for improvement/resolution. **Abbreviations:** UVJ, urethra-vesical junction; POUR, postoperative urinary retention.

Training should include competence in cystourethroscopy. An annual workload of at least 20 cases of each primary procedure for SUI is recommended. Surgeons undertaking fewer than 5 cases of any procedure annually should do so only with the support of their clinical governance committee; otherwise referral pathways should be in place within clinical networks.[2]

References

1. Kobashi KC, Albo ME, Dmochowski RR, Ginsberg DA, Goldman HB, Gomelsky A, Kraus SR, Sandhu JS, Shepler T, Treadwell JR, Vasavada S, Lemack GE. Surgical Treatment of Female Stress Urinary Incontinence: AUA/SUFU Guideline. J Urol. 2017 Oct;198(4):875-883.
2. Urinary Incontinence in Women: The Management of Urinary Incontinence in Women. National Collaborating Centre for Women's and Children's Health (UK). London: Royal College of Obstetricians and Gynaecologists (UK); 2013 Sep.
3. Bettez M1, Tu le M, Carlson K, Corcos J, Gajewski J, Jolivet M, Bailly G. 2012 update: guidelines for adult urinary incontinence collaborative consensus document for the canadian urological association. Can Urol Assoc J. 2012 Oct;6(5):354-63.
4. Lucas MG, Bosch JLHR, Cruz FR, et al. EAU Guidelines on Urinary Incontinence, Issued in 2014.
5. US Food and Drug Administration. UPDATE on Serious Complications Associated with Transvaginal Placement of Surgical Mesh for Pelvic Organ Prolapse: FDA Safety Communication, 2011. Available at: http://www.fda .gov/medicaldevices/safety/alertsandnotices/ucm262435.htm. Accessed August 2014.
6. Pulvino JQ, Duecy EE, Buchsbaum GM, Flynn MK. Comparison of 2 techniques to predict voiding efficiency after inpatient urogynecologic surgery. J Urol 2010; 184: 1408-12.
7. Vierhout ME. Prolonged catheterization after vaginal prolapse surgery. Acta Obstet Gynecol Scand 1998; 77: 997.
8. Geller EJ1. Prevention and management of postoperative urinary retention after urogynecologic surgery. Int J Womens Health. 2014 Aug 28;6:829-38.
9. Romanzi LJ, Chaikin DC, Blaivis JG. The effect of genital prolapse on voiding. J Urol 1999; 161: 581-58.
10. Dietz HP, Haylen BT, Vancaillie TG. Female organ prolapse and voiding dysfunction. Int Urogynecol J Pelvic Floor Dysfunct 2002; 13: 282-8.
11. Hatice Çelik, Özgür Harmanlı. Evaluation and management of voiding dysfunction after midurethral sling procedures. J Turk Ger Gynecol Assoc. 2012; 13(2): 123–127. Published online 2012 Jun 1.
12. Richter HE, Albo ME, Zyczynski HM, Kenton K, Norton PA, Sirls LT, et al. Retropubic versus Transobturator. Midurethral Slings for Stress Incontinence. N Engl J Med 2010; 362: 2066-76.
13. Sung VW, Schleinitz MD, Rardin CR, MD1, Ward RM, Myers DL. Comparison of Retropubic versus Transobturator Approach to Midurethral Slings: A Systematic Review and Meta-AnalysisAm J Obstet Gynecol 2007; 197: 3-11.
14. Stanford EJ, Paraiso MFR. A comprehensive review of suburethral sling procedure complications. J Min Invas Gynecol. 2008; 15: 132-45.

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CROSSWORD

The Maze of Knowledge

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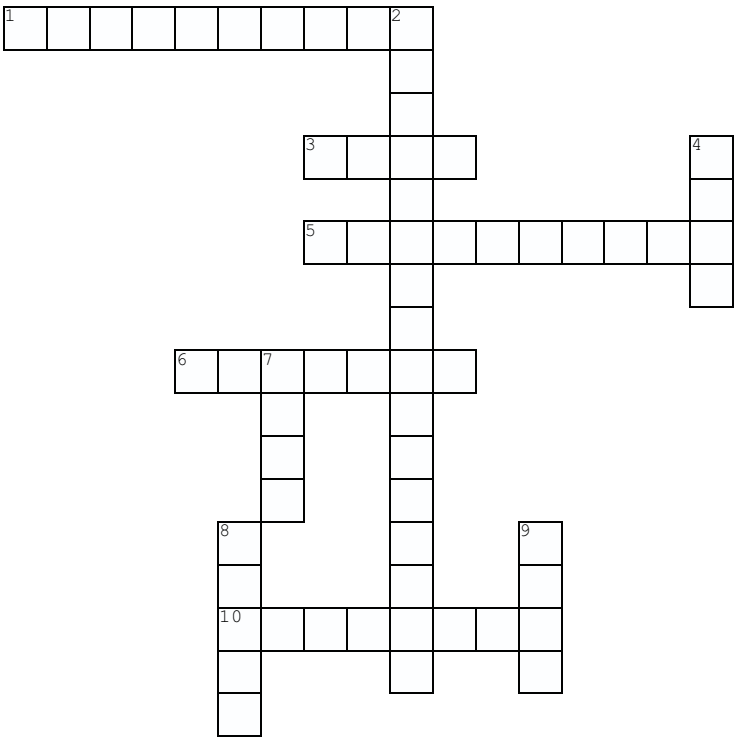


Down

2. A test to measure the electrical activity of bladder neck
4. A minimally invasive outpatient neuro modulation procedure for treatment of OAB
7. A urodynamic parameter
8. An intervention to reduce cesarean section rates
9. A combination of fetal heart rate interpretation and analysis of fetal ECG for intrapartum fetal monitoring

Across

1. Medication licensed for treatment of SUI
3. Option of childbirth after previo us caesarean section
5. A B3 agonist approved for the treatment of OAB
6. Labour room quality impro vement initiative by GOI
10. An initiative to strengthen quality of intra and immediate post partum care

PICTORIAL QUIZ

A Picture is Worth a Thousand Words

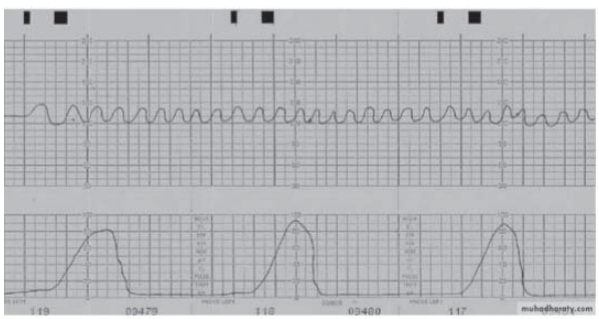


Figure 1:

Q1. What does the above picture show?

Q2. What conditions can be associated with this pattern?

Q3. What is a saltatory pattern?

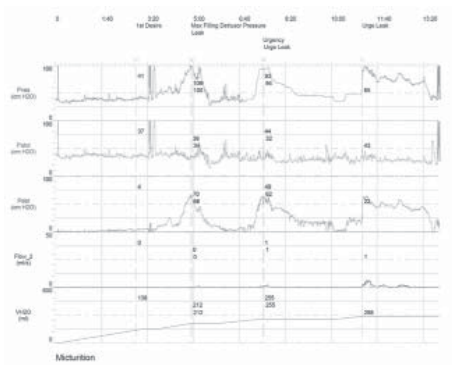


Figure 2:

Q1. The above graph is a part of which study?

Q2. What is the diagnosis?

Refer page 51 for Previous answer key.

Events Held

- "Community Awareness Program on ANC, Breast feeding, Infant Immunization and Contraception" organized by Rural Health Committee AOGD on 5th July, 2018 at Maternal & Child Welfare Maternity Home, Village Haiderpur- Delhi

- CME on Adolescent Health organized by Adolescent Committee AOGD on 10th July, 2018 at Guru Govind Singh Hospital, New Delhi


- CME on Family planning organized by Department of Obstetrics and Gynaecology, Hindu Rao Hospital under the aegis of AOGD on 11th July, 2018, (World Population Day)


- Contraception Awareness Program for Rural Community women by lectures & Nukkad Natak and Hands on Training of IUCD on Mama Model for ANM's organized by Rural Health Committee, AOGD on "World Population Day", 11th July, 2018 at Khaddi Dispensary Sunder Nagri, Delhi


- CME on "Infertility: A Current Update" organized by Department of Obstetrics & Gynaecology, Lady Hardinge Medical College, under aegis of AOGD and FOGSI on 14th July, 2018 at SJ Auditorium, LHMC



Medical Disorders in Pregnancy
Management of Hepatitis B Positive Pregnant Woman
Immunisation in Pregnancy: An update
Panel: Preconceptional Counselling: Optimising fetomaternal outcome

Fetal Medicine
Dilemnas in Management of FGR
Vaginal Microbiome to Enhance Fetal Protection
Panel: Multiple Births: Optimising care

Contraception
Postpartum Contraception
Postabortal Contraception
Panel: Contraception in Situations "At Medical Risk"

Labor: Evidence based update
Cervical Ripening; Tips, Tricks, and Pitfalls
Partogram: Ongoing changes
Interventions for Facilitating Normal Vaginal Delivery
Panel: Induction of Labor in Difficult Situations

Managing Difficult Situations: Structured approach
Intrapartum Maternal Death
Sudden Fetal Demise
Reversed end Diastolic Flows in Very Early Preterm Pregnancy
Lower Ureteric Injuries in Gynaecological Surgeries

Let's Improve the Care
Maternal Mortality: Lessons learnt from models of low resource countries
Respectful Maternity Care
Laqshaya: Quality Assurance GOI Initiative

Debate
Endometriomas should be Treated Surgically in all Infertile Women
All Women with Unexplained Infertility should be Offered IVF.
Laparoscopy is the Standard of Care for Ovarian Tumors
Panel: High Risk Obstetrics: Newer Challenges (Organ Transplant and Pregnancy, Bariatric Surgery and Pregnancy, IVF Pregnancies)
Panel: Pregnancy as a Window to Future: Fetal origin of adult disease and maternal outcome

nference AOGD

Venue: **India Habitat Center, New Delhi**

t a Glance

Evolution of Management of Gynaecological Cancers
Genetics and Cancer: What a gynaecologist should know
Changes in Radicality of Surgery in Cervical and Endometrial Cancer
Panel: HRT in Cancer Survivors

Menopause: Age gracefully
Strengthening Life Beyond Menopause
Perimenopausal Turbulence: Management strategies
Panel: Premature Ovarian Insufficiency

Urogynecology: Enhancing competency
Overactive Bladder: Unaddressed issue
Obstetric Anal Sphincteric Injuries Fresh and Old
Panel: Tailoring the Surgical Approach to Uterovaginal Prolapse

Persistent Problems: Is there a solution
Recurrent Pruritis Vulvae
Chronic Pelvic Pain
Panel: Recurrent Endometriosis

Video Session
Evidence Based Technique of Caesarean Section
Laparoscopic Cervical Encirclage
Obstetric Hysterectomy: Adherent placenta

Video Session
Tips and Tricks in Laparoscopic Hysterectomy
Adhesion Prophylaxis in Laparoscopic Surgery
Facilitating Dissection in Vaginal Surgery

Competition Papers	Free Papers and Posters	Quiz

AOGD President's Oration	Brigadier Khanna Oration
FOGSI President's Oration	Key Note Lecture

Preconference Workshops

Date: 22nd -23rd November, 2018

22nd November, 2018
Fetal Surveillance
Colposcopy (live workshop)
Hysteroscopy

23rd November, 2018-08
Operative Obstetrics
Ovulation Induction and Follicular Tracking
Pelvic Reconstructive Surgery

Events Held

- CME on Infertility organized by Department of Obstetrics & Gynaecology, LHMC on 14th July at SJ Auditorium



- Public Forum on "Awareness of Contraceptive Methods" organized by Department of Obstetrics & Gynaecology, Lady Hardinge Medical College, on 17-18th July, 2018 at Gynae OPD, SSK Hopital, New Delhi

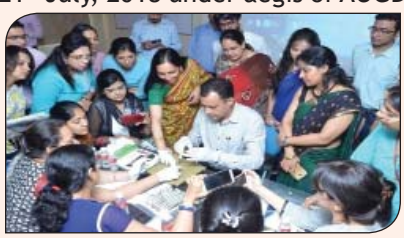


- CME and hands on workshop on "Contraception" organized by Department of Obstetrics & Gynaecology, Lady Hardinge Medical College, on 20th July, 2018 at ME hall SJ Auditorium LHMC



- CME cum workshop on "Art and Science of Obstetric Skills" organized by Department of Obstetrics and Gynaecology, Hamdard Institute of Medical Sciences and Research on 21st July, 2018 under aegis of AOGD





- Monthly Clinical Meeting of AOGD, 27th July, 2018 at AIIMS


- CME on Liver Disease in Pregnancy: Evidence based update organized by Department of Obstetrics & Gynaecology, Lady Hardige Medical College, New Delhi, on 29th July at SJ Auditorium, LHMC



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1. Fetal Surveillance ( )
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3. Hysteroscopy ( )

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ABSTRACT SUBMISSION FORM

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1) Only members of AOGD are entitled for paper & poster presentation (Proof of membership should be enclosed)
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3) Abstract to be sent only by email at **aogdconference2018@gmail.com** with the Pre-registration details for the conference.
4) Last Date for Abstract Submission 15th September 2018

Free Papers & Poster Submission

Theme Topics for Abstract Submission

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Candidates should be less than 30 years of age. Place of study should not be mentioned anywhere in the paper.
Three hard copies of the competition paper & a soft copy of the competition paper along with structured abstract should be sent to AOGD Secretariat at Department of Obstetrics and Gynecology
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2. Title must be in capital letters. It should be short and concise.
3. The name of authors should follow immediately under the title in one line. Type initials and family name of authors in BLOCK letters and underline the presenter's name. DO NOT include degrees or professional designations. The name of institution, city and country should be in lower case, following immediately after the authors, on a different line.
4. Leave one line between the title/ authors/ institution block and the body of the abstract.
5. Abstracts should be structured under following headings.
   - Objectives
   - Methods
   - Results
   - Conclusions
6. It is not desirable to simply state: like "The results will be discussed"
7. Use of standard abbreviations is desirable. Please write special or unusual abbreviation in brackets after the full word, the first time it appears. Use numerals to indicate numbers, except to begin sentences.
8. Do not include graphs and references in the abstract.
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DISTRESS TO DE-STRESS

Nurturing Relationships, Blossoming Life: A tale of two souls


Dr Mohit D Gupta

Mohit D Gupta
Professor of Cardiology, GB Pant Institute of Postgraduate Medical Education and Research, New Delhi
Author is associated with Brahma Kumaris World Spiritual University

A child is like a butterfly in the wind. Some can fly higher than others, but each one flies the best it can. Why compare one against other. Each one is different, Each one is special !

Situation: Create these situations and see what goes through our mind!

It's a typical morning and your child is getting ready for school but is getting late: What is our response?

Exams are nearing, child comes home, you ask your child to study but he goes out to play. What is our response?

Children don't listen to us; They don't follow what we say; they don't understand that whatever I say is for their good, they are busy on their mobiles and with their friends, they don't have time for us……these are common phrases that we use in our day today life. Interestingly, same phrases are now used by children for their parents.

Parenting a child is one of the most powerful experiences. If taken care, it can bring tremendous joy, love, happiness, pride and satisfaction to our lives. But at the same time, it can challenge our patience and ability to handle negativity and frustration. This can often bring out anger, irritation and disappointment in our lives and in the lives of children.

Studies reveal that a significant number (> 70%) of relationships suffer from lack of family values, absence of communication, poor moral education, less time spent together and lack of understanding and respect.

It is unfortunate that one of the most beautiful relation in this world is often scarred with such weird feelings and emotions.

There are four principles and building block of building a healthy and strong parent child relationship:

1. Identifying your long-term parenting goals.
2. Providing warmth and structure in all of your interactions with your child.
3. Understanding how children think and feel in different situations.
4. Taking a problem-solving, rather than punitive, approach to conflict.

We will discuss some simple practices that if incorporated in our day today life can create love and harmony in relations.

1. **Inculcating respect in ourselves and the child:** It is important to understand that the costume of the child might be small but the soul inside is mature and deserves respect and love. Harshness, gruffness, and sternness are not effective in shaping a child's will. Likewise, constant whacking and threatening and criticizing are destructive and counterproductive.
2. **Be a great listener:** Exhale and express is what children need today. Are we ready to listen to their heart and mind? A great parent is always a great listener. This requires patience and acceptance for your child. The natural consequence of being a patient listener is confidence building in a relation.
3. **Balancing love with guidance:** Love is the first and most important ingredient of any relation; children are no exception. Love does not mean providing them with best facilities and means or over caring to an extent that they become dependent on us. It means to provide unconditional support and care from your thoughts, words and actions in such a way that child is able to grow and bloom comfortably. Love means to inculcate teachings and guidance at the right time when the child is able to listen and accept. The vibrations and thoughts of the mind need to be very pure without any anger or irritation.
4. **Becoming an encourager rather than enforcer:** Adolescence is filled with changes and challenges-most of them enjoyable and some painful. Children often face significant criticism. Many of the parents help their children in the quest for maturity by giving timely suggestions and constructive criticism. However, it is important to understand that correction and criticism are accepted more enthusiastically if they are sprinkled rather than poured. What needs to be poured is the message that our children are loved and accepted unconditionally, and that we will stand by them through their struggles.
5. **Connecting privileges with responsibilities:** Children often want the privilege of being treated like an adult, but they avoid the responsibilities that come with that. But these are two sides of the same coin. It is responsibility of parents to provide good clothes to children but also teach them that it is their responsibility to maintain them and keep them clean. However, teachings and responsibility when given with love and care are well accepted.
6. **Spend quality time together:** Connection develops when parents and children spend time together.

Heart to heart conversation encourages powerful soul to soul bonding. One of the commonest reason for disconnect between relations is inability to spend time. Such a time includes discussion about happening in the day; listening to them carefully and encouraging them. This makes children more confident and increases trust in relationships.

7. **Avoiding impossible demands: As a parent we must be sure that we don't pose or create unrealistic or ingenuine targets or demands from our children that pressurizes them and creates disharmony T**hese impossible demands put the child in an irresolvable conflict: there is no way out. That condition brings unnecessary risks to the human emotional apparatus. Besides that, it is simply unjust.
8. **Expectation to acceptance:** Children are tender and need to be nurtured. If guidance is given to children keeping our desires in mind, it may pressurize them and create disharmony. Each child is a soul on a long journey. Spiritual wisdom makes us naturally accept the child while visualizing a beautiful happy life for them.
9. **Practice meditation:** We become what we think. A few minutes of silence everyday and visualizing your child as a happy, healthy and successful child is what is needed. Our positive, powerful thoughts can shape the destiny of our child.

LIST OF PRIZES – AOGD CONFERENCE 2018	
1. Dr S N Mukherjee-Rotating Trophy	Best AOGD Monthly Clinical Meeting
2. Research Paper-Best Competition Paper	Gold, Silver, Bronze
3. Dr Batra's Medal-Winning Team of AOGD Quiz	Gold Medal
4. Dr Neera Agarwal's Medal-Best Paper on theme topic of Obstetrics (Maternal Health)	Gold Medal
5. Dr Neelam Bala Vaid's Medal-Best Paper on theme topic of Gynecology (Adolescent Health)	Gold, Silver
6. Dr Suneeta Mittal's Medal-Population Stabilization	Gold Medal
7. Dr U P Jha & Dewan Balakram's Medal (Best Presentation in Gynae Oncology)	Gold Medal
8. Dr U P Jha & Raj Soni's Medal (Best Oral/Video/Paper Presentation in Endoscopy)	Gold Medal
9. Mr. S Bhattacharya & Dr Ganguly's Medal-Free Paper competition Miscellaneous Category	Gold, Silver
10. Poster Presentation	Gold, Silver
11. Slogan Competition	First Prize, Second Prize

RECENT ADVANCES

Surgical Anatomy and Management of Pelvic Organ Prolapse

Dr Karishma Thariani

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Introduction

Pelvic organ prolapse is defined as descent of pelvic organs below their normal anatomical position. It is one of the most common benign gynecological condition affecting more than 50% of all parous women[1].

The history of pelvic organ prolapse

It is a condition which has been known to mankind since 2000 BC. An inadequate understanding of pelvic anatomy plagued the practitioners prior to the nineteenth century. In the year 1500 BC in *Ebers papyrus* the uterus was portrayed as a wandering animal usually a tortoise or crocodile capable of movement in its host. Hippocrates supported this idea by adding that the uterus often went wild when deprived of the male semen. It was Leonardo da Vinci in the 15th century who gave the first accurate images of female pelvic anatomy[2]. With the beginning of the the 19th century there was more clarity in the anatomical concepts and understanding of female pelvis and etiology of pelvic organ prolapse.

The earliest surgical attempts to relieve prolapse were relatively simple. These procedures included labial suturing and removing portions of the vaginal epithelium to reduce the caliber of the vagina. During the 20th century, advances in understanding and treatment of prolapse progressed at an ever increasing rate. Historically ineffective treatments of the presurgical era gave rise to the advanced surgical techniques. As surgical technology advanced, anatomically distorting surgeries were replaced by anatomically reconstructive procedures for the management of pelvic organ prolapse.

In this era of modern medicine the concepts of pelvic anatomy are better understood than they ever were before. Management of pelvic organ prolapse and incontinence is not bound by surgical removal of the uterus but emphasizes on reconstruction of the functional anatomy.

This chapter highlights the recent advances in anatomical understanding, prevention and management of pelvic organ prolapse.

The anatomy of pelvic floor dysfunction; Newer concepts:

The main support of uterus and vagina is dependent on the complex interaction between the Levator ani muscle and the connective tissue with the bony pelvis.

Levator ani is the most important muscle in the pelvic floor and represent a critical component of pelvic organ support. The levators maintain a constant state of contraction, thus providing an active floor that supports the weight of the abdominopelvic contents against the forces of intra-abdominal pressure[3]. This prevents constant or excessive strain on the pelvic ''ligaments'' and ''fascia''. This baseline activity of the levators keeps the urogenital hiatus (UGH) closed and draws the distal parts of the urethra, vagina, and rectum toward the pubic bones. Relaxation of the levators occurs only briefly and intermittently during the processes of evacuation (voiding, defecation) and parturition.(fig 1)

The levator ani muscle has specific components each of which serves a specific function. Precise knowledge of these components and their functions help in understanding symptom patterns due to specific component injuries. The pubococcygeus, puborectalis, and iliococcygeus are the three components of the muscle recognized in the *Terminologia Anatomica*[4].

Dynamic MRI scanning of the pelvic floor has demonstrated that the pubococcygeus component of the levator ani had direct attachments to the vagina and other pelvic viscera hence it is now referred to as the *pubovisceralis.* It is divided into the following components; pubovaginalis (medial fibres attaching to anterior vagina.), puboperinealis refers to the fibers that attach to the perineal body and the puboanalis attaching to the anal spincter. Other muscles which contribute in the formation of the pelvic diaphragm are the coccygeus, pyriformis and the obturator internus muscle.

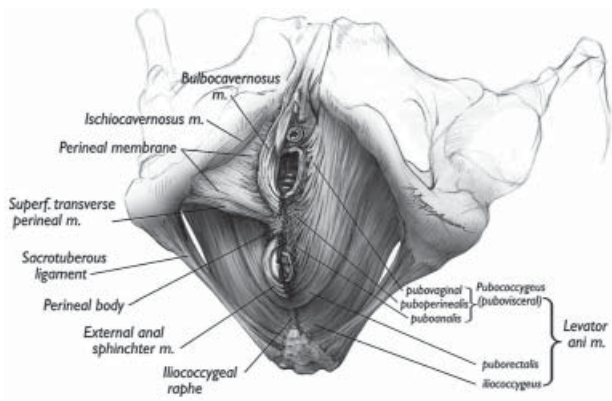

Fig 1: components and attachments of levator ani.

The levator plate is a clinical or conceptual term to describe the connection between the anus and the coccyx, formed by the medial insertions of the

iliococcygeus muscle on the coccyx, known as the anococcygeal raphe.[5] The levator plate is important in the discussion of theories on development of prolapse as it provides a ridge or shelf on which the rectum, upper vagina, and uterus rest.

Another important aspect of the pelvic floor support is the classification and distinction of ligamentous support and fascial layers within the pelvis. Fascia is divided into parietal and visceral fascia. Important condensations of parietal fascia in the pelvis provide muscle attachments to the bony pelvis and anchoring points for visceral fascia.[6] Examples include the arcus tendineus levator ani (ATLA), arcus tendineus fascia pelvis (ATFP), and arcus tendineus fascia rectovaginalis(ATFR). Visceral fascia in the pelvis is also known as endopelvic fascia. Under this classification, we find structures such as the uterosacral ligaments, cardinal ligaments, pubocervical/ pubovesical fascia, and rectovaginal fascia.

Delancey described that the support of uterus, vagina, bladder and rectum composed of a three dimensional network of all the above mentioned components that work together as a continuous single unit. So to say the support of the uterus, or parametria (consisting of the broad, cardinal, and uterosacral ligaments), continues caudally, providing support of the vagina, or paracolpium. The newer concepts in understanding of prolapse describe the anatomy, symptomatology and management in terms of vaginal compartments namely, anterior, apical and posterior.

In many ways, repair of prolapse in the apical compartment may be considered the "cornerstone" of a complete pelvic reconstruction.[7] This is in large part due to the importance of the integrity of the pericervical ring, where there is a convergence of the support mechanisms for the anterior, posterior, and apical compartments. Therefore, defects in apical support mechanisms are intimately related to defects in the anterior and posterior compartments. This may be demonstrated on physical examination, as simulated apical support during POP-Q examination reveal significant improvement of points Ba and Bp in 55% and 30% of women with stage II or greater prolapse.[8]

Changing Principles of Management

A better understanding of a problem always leads to more questions that need to be answered. Age old surgical procedures like various native tissue slings, Manchester- Fothergills repair and even vaginal hysterectomy for treatment of prolapse are now being challenged as newer anatomically appropriate procedures are being developed.

Visualization of the pelvic anatomy as a single, interdependent, three dimensional, functional unit itself has changed the principle of prolapse repair. The emphasis is on restoring the anatomy rather than hiding the prolapse by distorting the anatomy.

Issues like uterine preservation, maintaining the uterine axis and restoration of the affected fascial defects in an anatomically appropriate manner are given utmost importance. Use of mesh and other biological grafts for reconstructive surgery of pelvic organ prolapse are believed to bring down reoperation rates. Use of minimally invasive approach in management has brought down operative time and post-operative pain. Another changing trend in reconstructive vaginal surgery is emphasis on maintaining the vaginal length and axis post operatively. This not only reduces dyspareunia but also helps in reducing recurrences.

Minimally Invasive Surgery in Pelvic Organ Prolapse

In the past few years there has been a growing interest in the use of laparoscopic route to correct pelvic organ prolapse. The principles of the laparoscopic surgery are same as that of the corresponding open procedure. The laparoscopic route offers many advantages including excellent intraoperative visualization of the pelvic anatomy and retroperitoneal space, reduction in blood loss, decrease in post-operative pain and shorter hospital stay. The magnification provided by laparoscopy offers the advantage of visualization and dissection of fascial planes deep down in the pelvis which is almost impossible in open surgeries. This helps in restoration of anatomy in a way which was not possible previously.

1. *Laparoscopic sacrohysteropexy for apical compartment prolapse:*

   Sacrohysteropexy is a uterus conserving procedure where the uterus is suspended to the sacral promontory with the help of a synthetic mesh. Laparoscopic sacrohysteropexy has been gaining popularity owing to its minimal access approach, better visualization of anatomy, reduced blood loss and earlier recovery. It also has the benefit of maintaining the vaginal length leading to better sexual function postoperatively. The procedure is important for young patients presenting with uterovaginal prolapse where further pregnancy may be a big issue. Also the mesh does not interfere with fetal development and blood supply. But due to risk of failure of procedure during vaginal delivery, patients who conceive after laparoscopic hysteropexy should be advised for elective cesarean section.

2. *Laparoscopic sacrocolpopexy for vault prolapse:*

   Vaginal vault prolapse has been estimated to occur in 0.2–43% of post-hysterectomy patients. Laparoscopic sacrocolpopexy has evolved from classical abdominal sacrocolpopexy. The visual magnification and ability to work with relative ease deep in the pelvis, that are provided by the laparoscopic approach, have given pelvic-floor surgeons the opportunity to modify the original open procedure, by placing the mesh much lower over the posterior vaginal wall down to the level of pelvic floor (levator ani muscle) and perineal body, in an attempt to enhance its effectiveness.

The mesh should be attached with minimal tension on the vagina. The success rate of laparoscopic sacrocolpopexy has been reported to be 90– 96%, with a mesh erosion rate of 1–8%.

3. *Laparoscopic anterior wall repair:*

   Anterior vaginal wall prolapse is the most common form of vaginal prolapse mostly aggravated by vaginal birth. Conventionally, cystocele repair is done vaginally and is called anterior colporrhaphy. It has an extremely variable success rate ranging from 36-100% in various studies. There is currently limited evidence to support the use of mesh and other graft materials for anterior repair.

   The most common cause for an anterior prolapse is paravaginal defect or loss of support of lateral vagina (Figure 3). In patients with paravaginal defects, the most appropriate surgical procedure is the paravaginal repair. The laparoscopic paravaginal repair is accomplished by suturing the lateral aspect of the anterior vaginal wall back to its original point of attachment known as the arcus tendinous fascia pelvis (ATFP) or the "white line". Reapproximation of the vaginal wall to the fascia overlying the obturator internus muscle will restore the bladder and the urethra to its normal anatomical position. Dissection till the white line may be difficult due to lack of proper visualization in vaginal and open abdominal route.

4. *Laparoscopic posterior compartment repair:*

   Vaginal posterior compartment prolapse repair is generally associated with good success rates and is preferred by most surgeons due to easy to learn technique and good results. The laparoscopic repair of high rectocele and enterocele, in women undergoing surgery for uterine or vault prolapse, is advocated to avoid a separate vaginal procedure. Several studies that looked at the extension of the mesh over the posterior vaginal wall down to the level of levator ani muscle and perineal body reported good anatomic and functional results . The laparoscopic approach of posterior compartment prolapse, with an extension of mesh over the posterior vaginal wall at the time of sacrocolpopexy, is an effective technique for repair of enterocele and high rectocele; however, further evaluation of anatomical and functional outcomes is needed.

Synthetic Mesh in Prolapse Surgery: Where do we stand?

Use of synthetic mesh in management of uterovaginal prolapse came with a big bang a few years ago. Many mesh kits for anterior, posterior and apical compartments were launched by different companies each promising excellent short and long term outcomes. The rapid turnover of grafts/meshes and new surgical techniques made it difficult to properly evaluate the efficacy and safety of products, devices or surgeries. This was followed by increase in the number of reports and law suits for cases of mesh erosion and other mesh related complications. In 2008, the FDA released a Public Health Notification to inform clinicians and patients of adverse events related to the use of surgical mesh in pelvic organ prolapse.

In July 2011, the FDA issued an Update on the Safety and Effectiveness of Transvaginal Placement of Urogynecologic Mesh for Pelvic Organ Prolapse. This document raised alarm and stirred up debate and controversies about the use of mesh in pelvic organ surgery.

Subsequently, statements of the RANZCOG, and statements from the American College of Obstetricians and Gynecologists (ACOG) and American Urogynecologic Society (AUGS), Medicine and Healthcare Products Regulatory Agency (MHRA) in the UK, have been made to reassure clinicians and patients that:

A. For the vast majority of women, mesh and tape implants are a safe and effective operation, but as with all surgery, there is an element of risk
B. There are different types of mesh for different purposes that have different outcomes
C. There is not enough supporting evidence to justify taking mesh off the market.
D. Pelvic organ prolapse vaginal mesh repair should be reserved for high-risk individuals
E. Surgeons placing vaginal mesh should undergo training specific to each device and have experience with reconstructive surgical procedures and a thorough understanding of pelvic anatomy
F. Patients should be informed about all treatment options, including the pros and cons of each option for pelvic organ prolapse

Role of robotics in management of pelvic organ prolapse:

Robotic surgery in urogynecology has now made its place. The advantage of robot over laparoscopy is its superior 3D visualization, improved ergonomics and ease of suturing. High cost of instruments and lack of haptics limit its widespread use.

Role of Pelvic Floor Muscle Therapy

An up-to-date understanding of pelvic floor tissues reveals that development and progression of POP involves complex interaction of multiple systems. The 'Boat in a Dry Dock' concept illustrates that deficits in levator ani support can increase reliance on remaining supportive tissues that, in the presence of external forces, leads to cumulative strain and eventual failure over time[9]. Delancey's integrated life span model depicts pelvic floor function over a woman's lifetime as a curve that peaks during growth, abruptly declines and potentially rebounds according to variations in injury

and recovery surrounding childbirth, then declines at an individualized rate with age according to intervening factors. Taken together, these models suggest a framework for management of POP that emphasizes: optimal skeletal muscle performance throughout the lifespan; minimizing external forces; maximizing peak pelvic floor function prior to childbirth; and identification and optimization of modifiable variables that may affect injury risk, injury recovery, and rate of decline with aging. Hence pelvic floor muscle therapy in patients with prolapse using bio feed back devices is advocated. PFMT by physiotherapist in the clinic and kegels at home both can help in increasing muscle strength and healing.

Conclusion

The support network of the pelvic floor has been best described as being "continuous and interdependent." Therefore, the evaluation and surgical approach to pelvic organ prolapse should include a comprehensive assessment of pelvic floor support. This requires expert-level knowledge of anatomy and a clear understanding of the mechanisms

by which prolapse progresses. Ultimately, we must account for the global topography of the pelvic floor and correlate this with specific clinical symptoms. Use of minimally invasive approach may be preferred depending on available resources and expertise. Intelligent use of mesh, patient selection and proper consent can help in bringing down reoperation and complication rates. Pelvic floor muscle therapy should be a part of all urogynaecological clinics owing to its role in not just managing pelvic organ prolapse but also preventing it.

References

1. Hagen S, Stark D. Conservative prevention and management of pelvic organ prolapse in women. [Review][Update of Cochrane Database Syst Rev. 2006;(4):CD003882; PMID: 17054190]. *Cochrane Database Syst Rev*. 2011. doi:http://dx.doi.org/10.1002/14651858.CD003882.pub4.
2. Jones, H. W., III, & Rock, J. A. (2015). *Te Linde's operative gynecology* (Eleventh edition.). Philadelphia: Wolters Kluwer.
3. Parks AG, Porter NH, Melzak J. Experimental study of the reflex mechanisms controlling muscles of the pelvic floor. Dis Colon Rectum 1992;5:407–409
4. Federative Committee on Anatomical Terminology. Terminologia anatomica. New York: Thieme; 1998. Stuttgart (Germany).
5. Hsu Y, Summers A, Hussain HK, et al. Levator plate angle in women with pelvicorgan prolapse compared to women with normal support using dynamic MR imaging. Am J Obstet Gynecol 2006;194:1427–33.
6. Corton MM. Aspects of gynecologic surgery. Chapter 38. Anatomy. In: Hoffman BL, Schorge JO, Schaffer JI, et al, editors. Williams gynecology. 2nd edition. New York: McGraw-Hill Medical; 2012. p. 917–47
7. Ross JW. Apical vault repair, the cornerstone or pelvic vault reconstruction. IntUrogynecol J Pelvic Floor Dysfunct 1997; 8: 146–52.
8. Lowder JL, Park AJ, Ellison R, et al. The role of apical vaginal support in the appearance of anterior and posterior vaginal prolapse. Obstet Gynecol 2008; 111:152–7.
9. Saunders K. Recent advances in understanding pelvic-floor tissue of women with and without pelvic organ prolapse: considerations for physical therapists. *Phys Ther*. 2017;97

Forthcoming Events

- CME on "Vaginal Birth After Cesarean Section (VBAC)- Thrashing out the Controversies", 24th August, 2018 on 10:00am - 04:00pm at Sitaram Bharatiya Institute of Science & Research, Auditorium. Contact Dr Rinku Sen Gupta, 9810404057
- Quarterly Meet of the Society of Fetal Medicine Under Aegis of AOGD on 29th August, 2018 1:00pm - 5:00pm at UCMS, GTB Hospital, Delhi.
- Next Monthly Clinical Meeting of AOGD on 31st August, 2018 4:00 - 5:00pm at VMMC & Safdarjung Hospital
- 40th Annual Conference of AOGD, on 24th -25th November, 2018 at India Habitat Center.
- Preconference Workshops on 22nd - 23rd November, 2018
- Post Graduate Training in Infertility organised by Infertility Committee, AOGD 1st September, 2018, 2:00pm - 5:30pm, S J Auditorium, Lady Hardinge Medical college, New Delhi. All AOGD Member are Welcome. Contact Dr Surveen, 9810475476
- CME on "Endometriosis update"on 6th October, 2018 2:00pm - 4:00pm, at Moolchand Hospital, New Delhi.

CONTROVERSY

Urodynamic Evaluation in Female Incontinence

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Urodynamics refers to a set of investigations done to evaluate the physiological function of bladder and urethra with respect to storage and voiding. Broadly it comprises of uroflowmetry, cystometry, urethral pressure profile and leak point pressure. Uroflowmetry measures the rate of urine flow during voiding, cystometry measures the bladder pressures during filling, storage and voiding, urethral pressure profile tests the urethral function and abdominal leak point pressure, that is the intravesical pressure at which urine leaks by raising intra-abdominal pressure in the absence of detrusor contraction.

Although a detailed history and clinical examination are quite accurate in diagnosing various types of urinary incontinence, urodynamic testing is done with the premise to increase the diagnostic accuracy, assist in planning of treatment before any invasive intervention and prediction of the likely complications following treatment. Hence it is useful in helping discussion during counselling.

A normal bladder actively relaxes with filling without any detrusor contractions or increase in intravesical pressure even with provocation such as change in posture, coughing, sneezing, jumping and sound of running tap. Once the woman decides to void the urethral sphincter relaxes along with contraction of detrusor initiating the process of voiding. The urethral pressure is equal to or more than the intravesical pressure always during the filling phase of bladder. In normal anatomic position the urethral pressure increases with any rise in intraabdominal pressure to prevent leakage of urine. The urethral pressure is lowered in conditions such as aging, menopause, multiparity and previous urogynecological surgeries consequent to descent of urethrovesical angle, hypoestogenic status and loss of support of bladder neck.

Uroflowmetry

Uroflowmetry is a simple non-invasive test which assesses voiding function of bladder. It is performed by asking the woman with a comfortably full bladder to void in a flowmeter maintaining privacy. The volume voided, and time taken to empty the bladder is recorded. The flow rate can be calculated per second. The maximum flow rate should be > 15 ml/sec. If it is less, it indicates either some obstruction or decreased contractility of bladder suggesting a voiding disorder and an increased risk of urinary retention after incontinence surgery.

Cystometry

Cystometry is an invasive test that studies the pressure volume relationship in the bladder during both, storage and voiding phases of bladder. It studies the detrusor activity, capacity, compliance, and sensations of the bladder. This can be single channel or multichannel procedure. Multichannel is more reliable and usually preferred as it eliminates the changes in bladder pressure due to raised intraabdominal pressure and is also known as subtracted cystometry. In this a catheter is placed per-urethra to record post void urine volume and fill the bladder. Two pressure transducers are placed in the bladder and rectum to record the intravesical (Pves) and intraabdominal pressures (Pabd) respectively. The bladder is filled at the rate of 50 ml/min with normal saline and Pves and Pabd are measured continuously and detrusor activity Pdet is calculated by substracting Pabd from Pves (Pves-Pabd). This is important to diagnose urge incontinence and detrusor overactivity when spontaneous or provoked detrusor activity is induced during filling stage of bladder. Whereas stress urinary incontinence is diagnosed when there is involuntary leakage on increasing intraabdominal pressure by coughing, laughing or Valsalva manoeuvre without any simultaneous increase in detrusor activity. An attempt should be made to reproduce the presenting symptoms in the woman.

The various sensations observed by the patient and recorded during the test include bladder volume at first desire to void, at normal desire to void, at strong desire to void or urgency and maximum capacity when woman can no longer hold urine. The sensations are increased and occur at lower filling volumes in condition such as interstitial cystitis where the bladder capacity and compliance are decreased, and sensations are decreased occurring at higher filling volumes in the presence of neurological abnormalities, bladder denervation or reduced detrusor contractility. Any urgency reduced, or absent bladder sensation or bladder pain is also noted during filling of bladder.

Urethral pressure profile

The urethral profilometry is done with the help of a special catheter with two pressure transducers one each in bladder and urethra to record the intravesical and intraurethral pressures simultaneously. The pressures are recorded through the entire length of urethra, with bladder at rest. The catheter is drawn out slowly at the rate of 1mm/sec by a mechanical pulling device out of

the external urethral meatus. The various parameters measured are maximum urethral pressure, maximum urethral closing pressure that is the difference between maximum urethral pressure and intravesical pressure, functional urethral length that is the length along which urethral pressure is more than intravesical pressure. The clinical application of studying urethral pressure profile is to distinguish between intrinsic sphincter deficiency from genuine stress urinary incontinence. But it is of limited value due to lack of standardization of the technique and equipment. The urethral pressure is higher in erect position than in lying down.

The normal values are as given in Table no 1

Table no. 1: Normal range of values of various parameters assessed in urodynamic evaluation

Parameter	Normal range
First desire to void	100-200 cc
Normal desire to void	150-350cc
Urgency	250-500cc
Maximum cystometric capacity	300-600cc
Urine flow rate	>200 ml over 15-30 sec Continuous single curve
Maximum urine flow rate	>15 ml/sec
Leak point pressure	<60 cm of H2O

A correlation of the urodynamic findings should always be made with the clinical symptoms as stand-alone the findings may have no significance. This is because of factors like lack of standardization of the procedure with respect to rate of filling of bladder, position of patient during the test and type of pressure transducers used. All these can influence the results. Moreover, the test is done in conditions that are not physiological and there is a wide range in the results in normal women. The results may not be reproducible.

A few modifications in urodynamics studies; video urodynamics and ambulatory urodynamics, were introduced to overcome some of the shortcomings of the procedure. These are costlier, cumbersome and require more technical support. Both these are not a part of routine clinical practice but are being used in research.

Cochrane database of systematic review on Urodynamic studies for management of urinary incontinence in children and adults was published in 2013. The objective was to determine if treatment according to a urodynamic based diagnosis in people with urinary incontinence led to a more effective clinical care and better clinical outcomes compared to treatment based on history and examination. Data of 1036 women from seven trials was included for analysis. Of these 526 underwent Urodynamic studies. There was significant evidence that urodynamics did change the clinical decision making by increasing the likelihood of prescribing drugs and avoiding surgery but did not significantly affect the clinical outcome of treatment.

NICE guidance (2013) recommends not to perform urodynamic studies in women with pure stress urinary incontinence (SUI) diagnosed based on detailed history and clinical examination to confirm the diagnosis or initiating treatment. It recommends it to be performed after detailed history and examination prior to surgery, in women with symptoms suggestive of overactive bladder (OAB), voiding dysfunction, anterior compartment prolapse or previous failed surgery for SUI. It also recommends considering ambulatory or video urodynamics if the diagnosis is not clear after conventional method.

European Association of Urology (2016) guidelines recommend that clinicians should not routinely carry out urodynamic studies in patients with uncomplicated urinary incontinence that is pure SUI or stress predominant mixed urinary incontinence before initiating treatment and counsel the patient that these tests are unlikely to predict the outcome of treatment in these cases. However, these can be performed in complicated cases like mixed urinary incontinence or failures of previous surgery if the findings are likely to change the choice of invasive procedure. The clinician should ensure that the test replicates the symptoms of the patient and interprets the results in context of the clinical problem. There may be a physiological variability in the same individual and the recordings should be checked regularly for quality control.

American Urological Association (2017) recommends that physicians may omit urodynamic testing for index patient desiring treatment when SUI is clearly demonstrated and may perform urodynamic testing in non- index patients to facilitate diagnosis, planning of treatment and counselling.

Hence although urodynamic studies are not indicated in women with uncomplicated SUI for initial evaluation before treatment or for prediction of outcome after treatment. The various indications for urodynamic testing include:

History of previous surgery for SUI or pelvic organ prolapse

Mismatch between subjective and objective findings

History of significant voiding dysfunction, urgency, urge urinary incontinence, overactive bladder

Neurogenic lower urinary tract dysfunction.

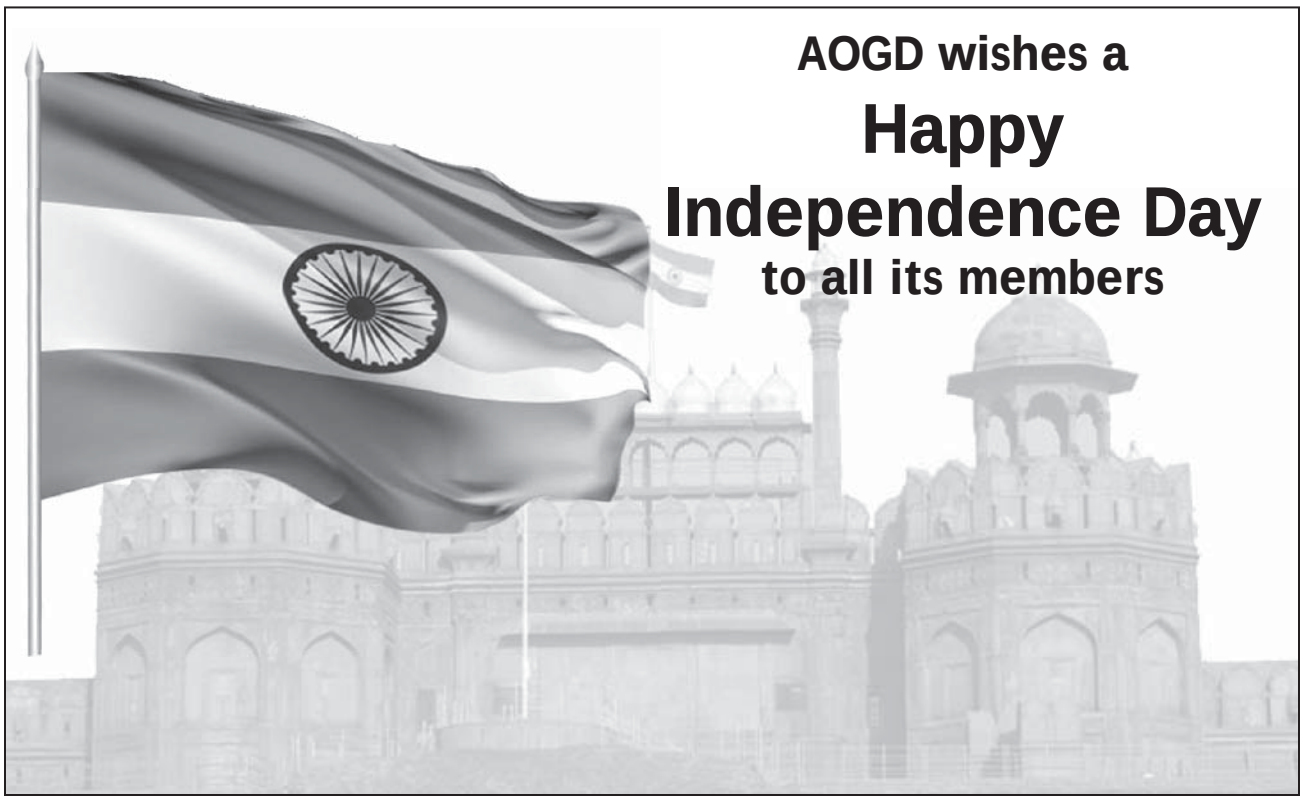
Bacteriuria has been reported with urodynamic studies in 3-8% of women, but prophylactic antibiotics are not indicated. The patients are counselled regarding the likelihood of some symptoms like urgency, frequency and dysuria following the procedure and advised to increase the intake of fluids to flush the bladder but avoid coffee, alcohol and carbonated drinks as they increase bladder irritability. They are asked to report if there are any danger signals like fever, chills, loin pain etc suggestive of urinary tract infection.

Summary

The aim of urodynamic testing is to understand the physiologic basis of lower urinary tract dysfunction for making an accurate diagnosis and plan targeted treatment. However, given the lack of standardization of the procedure, reproducibility of results and a wide range of the normal cut-offs, its routine use in clinical practice for uncomplicated stress urinary incontinence is not advocated. The findings of these tests should always be interpreted in context of detailed clinical history and examination as there are many uncontrolled variables and artifacts. It's use is associated with a significant change in treatment plan from surgical to medical, but does not translate into improvement in clinical outcomes. Hence its use is recommended in women with recurrent SUI after previous surgery for SUI or pelvic organ prolapse, history of significant voiding dysfunction, urgency, urge urinary incontinence and OAB after initial conservative and medical treatment or if there is a mismatch between the subjective and objective findings.

Reference articles

- Glazener CM, Lapitan MC Urodynamic studies for management of urinary incontinence in children and adults Cochrane Database Syst Rev, 2012
- National Institute for Health and Care Excellence (NICE): Clinical guideline on urinary incontinence in women – Management (2013, updated 2015)
- Syan R, Brucker BM Guideline of guidelines: urinary incontinence BJU Int 2016; 117: 20–33
- European Association of Urology (EAU): Guidelines on urinary incontinence in adults (2016)
- American Urological Association (AUA)/Society of Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction (SUFU): Guideline on surgical treatment of female stress urinary incontinence (SUI) (2017)



CASE APPROACH

Case Approach to Overactive Bladder Syndrome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Case Details

A 68 years old female patient presented with urinary symptoms in form of frequency, urgency and nocturia for 3 years and urge incontinence for last one year.

She had had multiple urine examinations and cultures which had shown no growth on most occasions, still she had been prescribed multiple courses of antibiotics with a presumptive diagnosis of a urinary infection by various physicians whom she visited. Apart from occasional relief, her symptoms only increased over a course of time. She has no history of diabetes or hypertension.

On examination, her abdomen is normal, urethral meatus is normal and there is no stress leak or pelvic organ prolapse

According to the history and examination

Following differential diagnosis were made:

1. Overactive bladder
2. UTI
3. Small capacity bladder (to rule out bladder tuberculosis)
4. Voiding dysfunction

Relevant investigation were done.

Urine examination and culture was normal

Uroflowmetry showed a normal flow of urine with a residual urine of 5 cc

Patient was asked to maintain a bladder diary (frequency volume chart) for 3 days which revealed that the number of voids in each day were 25-30 with awake time voids of 22-25 and nocturnal voids 5-8 times. The voided volume ranged from 75-300 cc with maximum voids between 100-150 cc. She leaked 1-2 times each day and it was unpredictable with severe urge. Her functional bladder capacity (maximum voided volume on any occasion during the day) was 300 cc

According to the available reports UTI was ruled out in view of normal urine analysis and small capacity bladder was ruled out after her voiding diary revealed adequate functional capacity.

A voiding dysfunction was ruled out in view of normal uroflowmetry and insignificant residual urine and a working diagnosis of overactive bladder (OAB) was made

Typically any patient with OAB would present like this index case. The key here is to rule out any causes that are directly causing irritation to the bladder like UTI, stone, outlet obstruction, adjacent organ inflammation like vaginitis, prolapse and neurogenic causes. If none is present then it would fall in the category of idiopathic OAB

As a gynaecologist, the concerns involved in management of this and similar clinical scenario are dealt with in the following sections with frequent reference to this index patient of ours.

Definition

The international continence society (ICS) defines OAB as "**urinary urgency**, usually accompanied by frequency and nocturia, with or without urgency incontinence, in the absence of urinary tract infection or other obvious pathology" (An International. Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. Haylen BT, de Ridder D, Freeman RM, et al Neurourol Urodyn. 2010; 29(1):4-20.0

The diagnosis of OAB is based on symptoms and it is a clinical syndrome and presence of Urgency is pivotal to the diagnosis.

When accompanied with urge incontinence it is termed as "OAB wet", whereas without incontinence it is called "OAB dry"

Prevalence

Overall prevalence of OAB is 12-17% in adults which increases with age. Both genders have similar rates of OAB, but "OAB wet" is more prevalent in women and "OAB dry" is more prevalent in men. In post menopausal women, idiopathic OAB is more common than in men. OAB wet is common in women due to the relative weakness of the bladder neck and urethral sphincter mechanism especially after pregnancy. Milsom et al, in a study in 2001 concluded that OAB is a quality of life problem and affects a person's social and work life. The nocturia affects sleep and thus productivity at work apart from sexual life

Pathophysiology and aetiology

The filling phase of the voiding cycle is sympathetic dominated where ß adrenergic receptors help increase the sphincteric tone and keep the detrusor relaxed. The suprapontine micturition centre is in a state of inhibition during entire filling.

The voiding phase is parasympathetic dominated after all sympathetic activity is switched off leading to pelvic floor and sphincter relaxation followed by a strong cholinergic discharge causing the detrusor contraction

Aetiology of OAB is complex and poorly understood

1) **Neurogenic hypothesis:** when the balance of inhibitory and stimulatory afferent impulses to the bladder is tilted to stimulatory bursts, OAB ensues. Detrusor overactivity (DO) arises from generalized, nerve-mediated excitation of the detrusor muscle. Normally the bladder control is modulated in an inhibitory fashion by the cerebral cortex. Damage to the brain can induce DO by reducing supra-pontine inhibition. Damage to axonal pathways in the spinal cord allows the expression of primitive spinal bladder reflexes. (De Groat et al, 1997)
2) **Myogenic hypothesis:** some detrusor muscle fibres attain autonomic behaviour and increased phasic activity occurs. Overactive detrusor contractions result from a combination of increased spontaneous excitation within smooth muscle of the bladder and enhanced propagation of this activity to affect an excessive proportion of the bladder wall. (Brading, 1997)

Risk factors for OAB: Bladder inflammation, chronic bladder outlet obstruction, central nervous system disorders, diabetes mellitus, pregnancy, vaginal delivery, postmenopausal status, older age (risk increases with age), although the most common cause is idiopathic.

Any patient coming to gynaecology OPD with the symptoms of urgency, urge incontinence, frequency with or without nocturia should be evaluated as OAB is a diagnosis of exclusion.

Clinical Evaluation

Diagnosis of OAB is symptom based and involves: 1. careful history. 2. physical exam. 3. urinalysis. 4. frequency volume chart. 5. post-micturation residual urine.

Clinical Evaluation: history

Presence or absence of symptoms, their severity and effect on quality of life for each of the symptoms including urgency, frequency and incontinence should be elicited. Voiding symptoms like poor flow, urethral pain, interrupted urinary stream and feeling of incomplete evacuation should also be assessed and if present, **a uroflowmetry should be obtained to rule out voiding dysfunction**. Nature and volume of fluid intake presence or absence of dysuria and hematuria and bowel symptoms should be assessed. Detailed obstetric and gynecologic history, past history of any neurologic disease and previous surgery/ radiotherapy should be taken. Medical condition e.g., **closed-angle glaucoma and cognitive impairment can limit treatment options**. Drug history of medications that can exacerbate the symptoms of OAB like intake of diuretics and alpha agonist should be taken.

Clinical Evaluation: Physical examination

Abdominal and vaginal examinations should be performed and, if indicated a rectal examination should also be undertaken. The presence of pelvic organ prolapse, e.g a cystocele, may cause urinary urgency and frequency as it drags on the trigone and causes sensation of bladder fullness. A bi-manual examination will rule out pelvic masses, e.g ovarian cysts and uterine enlargement, which can also cause urinary symptoms. For women with an atrophic vagina and symptoms of OAB, estrogen deficiency may be responsible for the symptoms.

Clinical evaluation for other possible causes of urgency and frequency of micturition should also be done which includes urological: urinary tract infection, bladder tumour, bladder stone, urethral diverticulum, small capacity bladder, interstitial cystitis, radiation cystitis, gynecological: cystocele, previous pelvic surgery, pelvic mass (fibroids), medical: upper motor neuron lesion (cerebro-vascular stroke, Parkinson's disease), impaired renal function, congestive heart failure, diabetes mellitus, diabetes insipidus.

Post-micturition residual urine estimation can be performed to rule out overflow incontinence or incomplete bladder emptying, which can cause symptoms of OAB.

Frequency volume charts or bladder diaries are useful tool when assessing patients with urinary symptoms and facilitates history taking. Bladder diary should be maintained for a minimum of 3 days with the patient on her routine diet ,drinking patterns and daily activities. This will record the quantity of fluid intake and urine output and record the frequency and quantity of urine voided on a daily basis .Occurrence of any leakage of urine and number and degree of soakage of pads is also noted.

Voiding diaries can provide both diagnostic and therapeutic advantages. The use of diaries often helps patients realize their pattern of urination and is more accurate than recall (McCormack et al, 1992; Siltberg et al, 1997; Stav et al, 2009). Furthermore, the diary can provide patients with insights into those behaviours that need modification to decrease the urinary frequency (Burgio, 2004).Several studies have demonstrated the adjunctive role that diaries can have in the diagnosis and management of incontinence.

Urodynamic evaluation - it is common practice to prescribe conservative management and oral pharmacotherapy without a urodynamic diagnosis. Before a urodynamic test is requested, the reasons for "failure" of drug therapy should be explored that includes insufficient duration or poor patient compliance or improper dose. Presence of dryness of mouth is a useful symptom for deciding whether dose is adequate or excessive enough to cause side effects.

Our index patient was started on anticholinergic therapy without a UDS and initially responded to medication. Clinical evaluation with urodynamics is indicated when conservative and drug therapy fail to manage OAB adequately or complicated cases of OAB or before invasive surgery.

The **main urodynamic finding associated with OAB**

are presence of uninhibited detrusor contractions or Urodynamic Detrusor overactivity (DO) along with increased filling sensation or leak in the filing phase. Urodynamic Detrusor overactivity is measured by a rise in Pves with no associated rise in Pabd, and therefore the subtracted Pdet looks identical to the Pves.

Failure to demonstrate DO on UDS does not rule out its existence. It is well known that up to 50% of women with urge incontinence do not demonstrate detrusor contractions on UDS and in fact, are able to suppress the motor activity in test conditions. (Hashim et al, 2006)

Differential diagnosis of OAB which needs to be ruled out with clinical history, physical examination and lab evaluation will include following

UTI, SUI, Prolapse, Atrophic vaginitis, postsurgical incontinence, neurogenic bladder, recent pelvic surgery, diabetes mellitus, bladder stone, bladder cancer and female urethral stricture

Treatment

1. Non invasive treatment
   a. Behavioural therapy
   b. Oral medication (anticholinergic or beta 3 agonist).
   c. Combined therapy: behavioural and pharmacologic therapy.
   d. Estrogen for postmenopausal women.
2. Minimally invasive treatments:
   a. Botulinum a-toxin.
   b. Neuromodulation (post tibial nerve , sacral nerve stimulation)
   c. Interruption of innervation (central subarachnoid block or sacral rhizotomy, peripheral motor and/ or sensory block)
3. Highly invasive treatments:
   a. Augmentation cystoplasty.
   b. Urinary diversion.

1a. Behavioral modifications includes following

Dietary changes and fluid management- Weight loss in obese patient, cessation of smoking, avoidance of bladder irritants (caffeine, alcohol, spicy food, acidic food), avoidance of diuretics and excessive fluid intake especially before bed time, and treatment of constipation.

Timed (scheduled) voiding
Voiding by routine schedule with a constant interval between voids (every 2 -3 hours) helps to empty the bladder before incontinence occurs and decrease urgency and frequency. Voiding interval may be changed throughout the day to match patient's incontinence pattern.

Bladder training involves two processes
Modification of voiding interval by gradual increase of voiding interval by 15- 60 min every 1-2 week until an acceptable voiding interval is achieved without incontinence. (initial interval determined by pre-treatment voiding diary).

Urge control (bladder inhibition) suppressing the urge using any of following methods; keeping the body calm until urge subsides, taking slow deep breath, concentration on elimination of the urge by mental calculation, mental imaging or contraction of pelvic floor muscle. After the urge subsides urination to be avoided until the next scheduled void. Bladder training requires: a motivated patient with sufficient cognitive function.

Pelvic floor training (kegel exercises) consists of intermittent voluntary maximal contraction of pelvic floor muscles, each contraction is held 6-8 seconds and followed by brief period of relaxation, a common regimen is set of 10 contraction 3 times per day. Continence improves after 6-12 weeks of exercise. Contraction of pelvic floor muscle is the best done when lying down. But it can be done during different activity as sitting in a meeting or stopping in your car in a traffic light or when talking on telephone.

1b.Drug treatment for OAB

Anticholinergic agents: Mechanism of action- it acts by competitively inhibiting the muscarinic receptors in bladder wall which reduces detrusor over activity. It improves symptoms within a week but maximum benefit is achieved by 3 months. Over 50% of patients stop it within 3 months due to ineffectiveness or side effects. The adverse effects occur due to inhibition of muscarinic receptors outside the bladder. Side effects include Eye: blurry vision especially in patients with narrow angle glaucoma, Salivary glands: dry mouth, Intestines: constipation, Heart: tachycardia and Brain: impaired cognition and memory.

With in the bladder, they promote urinary retention and a UTI when there is large post void residual urine in the bladder.

The most commonly used antimuscarinics are: oxybutynin, trospium, tolteroidine, solifenacin and darifenacin

Oxybutynin is a tertiary amine metabolized in liver to N-desethyloxybutynin which is responsible for most of the side effects. Adult dose of immediate release preparation is 2.5 - 5 mg 3 times/day. Extended release: 5 - 30 mg once a day. Side effects are dry mouth, constipation, headache It is approved for pediatric use (age 6 or older) Sussman et al, 2002
Solifenacin is also a tertiary amine but is a selective M3 inhibitor. It is more selective for bladder than salivary glands which may reduce dry mouth. It has a long half life (48 hour) so it is used once per day. Adult dose 5 – 10 mg once daily. Main side effects are constipation and dry mouth to a lesser extent. Chapple et al, 2005
Darifenacin is again a tertiary amine, M3 selective, metabolized by liver. Adult dose 7.5 mg or 15 mg once a day. Main side effects – constipation and dry mouth. Chapple et al, 2007

Trospium Chloride (Trospium) is quaternary amine. Theoretically harder to pass through blood/brain barrier with less cognitive impairment, not metabolized by liver. 60 % is excreted unchanged in the urine. It has low oral bioavailability of only 10 %. Adult dose is 20 mg twice a day. Extended release: 60 mg once a day. Can be used in children older than 6 years in a dose of 20mg once per day. Staskin et al 2010

Because of anticholinergic side effects of dry mouth and constipation the compliance becomes an issue in the long term. Risk of retention is common to all anticholinergics and hence a caution is required when baseline postvoid residual is above 150 cc. All these drugs are contraindicated in narrow angle glaucoma and one should always enquire about blurred vision when on these drugs.

ß **3 agonist (mirabegron)** - stimulates ß 3 adrenergic receptors to cause relaxation of detrusor muscle and increased bladder capacity with an adult dose of 25 or 50 mg per day. This drug is comparatively safe and has no antismuscarinic side effects. Other side effects like hypertension, headache, tachycardia do occur. Risk of urinary retention is very low. Dry mouth and constipation do not occur. The drug is contraindicated in severe uncontrolled hypertension. Dose adjustment is required for liver failure

Estrogen for postmenopausal women- use of oral estrogen alone or in combination with progesterone not only has poor effect in treatment of OAB but also shows worsening of preexisting incontinence. Local estrogen therapy is the most beneficial route in treatment of OAB due to direct effect on reversal of vaginal atrophy.

2a. Minimally invasive treatment

Botulinum A-toxin: Intravesical injection of botulinum A toxin is FDA approved for treatment of OAB refractory to antimuscarinic medications. It acts by inhibiting detrusor contraction by inhibiting release of acetyl choline at neuromuscular junction. Side effects include increased risk of UTI and urinary retention that requires catheterization. Treatment is contraindicated in UTI, pregnancy, and myasthenia gravis. The effect of the injection lasts for a period of 6-9 months and the therapy has to be repeated after that. Van Balken, et al, 2001

Sacral neuromodulation (Interstim) - Modifies voiding reflex by direct electric stimulation of S3 afferent nerve. Stimulation of the sacral roots has effectively suppressed the hyperactivity of the detrusor muscle. Indicated in patients who fail or cannot tolerate conservative treatment because of side effects. Complications include infection, lead migration, change in bowel function and change in menstrual cycle. It is contraindicated in pregnancy. A response of more than 50% symptom improvement in more than 60% of patients for urgency/frequency and urge urinary incontinence has been observed by various researchers.

Posterior tibial electrical nerve stimulation (P-TENS) is a lesser invasive way of stimulating sacral nerve roots. Electric stimulation of tibial nerve is transmitted to S3 and allows modification of voiding reflex. Weekly sessions for 12 months (30 minutes each) followed by a maintenance schedule is recommended. Efficacy: frequency, urgency improves in 60% of patients. The treatment is now approved by USFDA for the treatment of OAB.

3. Surgical Treatment for OAB

Surgery is indicated in patients refractory to less invasive treatment and for urinary incontinence due to reduced bladder capacity. It increases bladder capacity and lowers intravesical pressure Types - augmentation enterocystoplasty (using bowel as a detubularised patch to increase bladder capacity), autoaugmentaton (taking off the bladder muscle from the bladder mucosa to allow a low pressure expansion) and rarely urinary diversion as ileal conduit. Results of augumentation cystoplasty: most patients become dry however 10-40% require clean intermittent self cathetrisation for emptying as the detubularised intestine does not produce a synchronous contraction to facilitate emptying. Failure rates of autoaugumentation are more due to limited increase in bladder capacity that it can allow.

Conclusion

OAB is a diagnosis of exclusion. Proper clinical history, physical examination and investigations aids in diagnosis and management. Management includes fluid and diet modification along with behaviour modification and oral drugs. If symptoms do not improve on these measures, minimal invasive treatment should follow. Surgical treatment are always considered the last option for refractory cases or when worrisome side effects ensues with medical management.

Suggested readings

1. Campbell-Walsh Urology, 11th Edition, Chapter 66, Page 1948
2. American Urogynecologic Society (May 5, 2015), «Five Things Physicians and Patients Should Question», *Choosing Wisely: an initiative of the ABIM Foundation*, American Urogynecologic Society, archived from the original on June 2, 2015, retrieved June 1, 2015
3. "Overactive Bladder". Cornell University Weill Cornell Medical College Department of Urology. Archived from the original on 2013-09-21. Retrieved 25 Aug 2013.
4. Gormley, EA; Lightner, DJ; Faraday, M; Vasavada, SP (May 2015). "Diagnosis and Treatment of Overactive Bladder (Non-Neurogenic) in Adults: AUA/SUFU Guideline Amendment". *The Journal of Urology*. **193** (5): 1572–80.
5. *Danforth›s obstetrics and gynecology* (10 ed.). Philadelphia: Lippincott Williams & Wilkins. pp. 890–891. ISBN 9780781769372. Archived from the original on 2016-03-05.
6. *Mayo Clinic internal medicine concise textbook*. Rochester, MN: Mayo Clinic Scientific Press. p. 339. ISBN 9781420067514. Archived from the original on 2016-03-05.
7. "Symptom-based diagnosis of overactive bladder: an overview". *Canadian Urological Association Journal*. **5**: S135–S136. doi:10.5489/cuaj.11183. PMC 3193392
8. "Physiopathology of overactive bladder syndrome". *Urologia*. **79** (1): 24–35. doi:10.5301/RU.2012.8972

Journal Scan

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Treatments for Overactive Bladder: Focus on Pharmacotherapy – An Addendum

Roxana Geoffrion

Objective

This technical update addendum reviews success rates and comparative evidence of the anticholinergic fesoterodine, as well as mechanism of action, safety profile, success rates, and comparative evidence of the ß3 agonist mirabegron in the treatment of non-neurogenic overactive bladder syndrome (OAB). This adds to OAB pharmacotherapy recommendations initially published in 2012.

Intended Users

Residents and other trainees, primary care practitioners, gynaecologists, urologists, urogynaecologists, and other health care providers who assess, counsel, and treat women with OAB.

Target Population

Adult women with symptomatic OAB.

Options

This addition relates to fesoterodine, mirabegron, and anticholinergic-ß3 agonist combination pharmacotherapy.

Outcomes

The outcomes of interest are clinical efficacy of fesoterodine compared with no treatment or other OAB therapies; mechanism of action and safety profile of mirabegron, clinical efficacy of mirabegron compared to no treatment or other OAB therapies; clinical efficacy of anticholinergic-ß3 agonist combination pharmacotherapy for OAB.

Evidence

PubMed, Medline, and the Cochrane Database were searched using the key words "fesoterodine" and "mirabegron." Results were restricted to English or French and human clinical and pharmacological research. Animal research and clinical studies including only male participants were excluded. Articles were included until the end of December 2016. Grey literature was not searched. Clinical practice guidelines, guidelines of specialty societies, and systematic reviews were included. RCTs and observational studies were included when evidence for the outcome of interest or in the target population was not available from systematic reviews. New studies not yet included in systematic reviews were also included. References of included articles were also searched to ensure comprehensive inclusion of relevant literature.

Values

The content and recommendations were drafted and agreed upon by the principal author, as well as members of the Urogynaecology Committee. The Board of the SOGC approved the final draft for publication. The quality of evidence was rated using the criteria described in the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology framework. The Summary of Findings is available upon request.

Benefits, Harms, and/or Costs

It is expected that this technical update will benefit patients with OAB by providing physicians and other interested health care providers with additional options for and knowledge of safe and effective OAB pharmacotherapy. The benefits clearly outweigh the potential harms or costs of implementation of this technical update, although there are no direct harms or costs identified.

Updates

"Evidence will be reviewed 5 years after publication to decide whether all or part of the document should be updated. However, if important new evidence is published prior to the 5-year cycle, the review process may be accelerated for a more rapid update of some recommendations."

Recommendations

1. Fesoterodine is recommended as a treatment for overactive bladder (Strong, High).
2. Dose escalation of fesoterodine is recommended for improved clinical efficacy, as it is associated with significant subjective and objective clinical improvement, both short and long term (Strong, High).
3. Fesoterodine is recommended as an anticholinergic of choice for overactive bladder symptoms in elderly and frail elderly (Strong, High).
4. Fesoterodine is recommended for overactive bladder symptoms in patients with pre-existing cardiac concerns or cognitive dysfunction (Strong, Moderate).
5. Fesoterodine is recommended for nocturnal overactive bladder symptoms to improve sleep quality (Conditional, High).

6. Mirabegron is recommended as a treatment for overactive bladder (Conditional, High).
7. Mirabegron is recommended for overactive bladder symptoms in patients with intolerable side effects or suboptimal response on anticholinergic therapy (Strong, Moderate).
8. Mirabegron may be used in combination with solifenacin 5 mg for overactive bladder symptoms as an alternative to solifenacin 10 mg to decrease anticholinergic side effects of the higher dose solifenacin (Conditional, High).

Editor's Comment : Overactive bladder syndrome is an underdiagnosed condition because of lack of awareness leading to misdiagnosis and multiple treatments for UTI without much relief of symptoms. It can be diagnosed clinically by a properly maintained bladder dairy . Treatment is first behavioural followed by pharmacotherapy and last option is surgery. Anti muscarinic drugs are mainstay in treatment. Latest addition to this list are Fesoterodine and Mirabegron.

Fesoterodine is one of the newest antimuscarinic agent approved for the management of OAB. It is converted into the same active metabolite as that of tolterodine, 5-hydoxymethyltolterodine (5-HMT), however, this conversion mediated through the cytochrome P450 system but through esterases thus providing a faster and more efficient conversion to 5-HMT. Fesoterodine is available in 2 doses, 4 mg and 8 mg. There is a dose response relationship in efficacy and improvements in quality of life. Side effects are same as that of all antimuscarinics that is dry mouth and constipation. A combination of medical and behavioral therapy improves the overall outcome of OAB. Dose flexibility may help improve efficacy , reduce adverse effects and improve tolerability with these agents.

Mirabegron is in a class of medications called beta-3 adrenergic agonists. It works by relaxing the bladder muscles to prevent urgent, frequent, or uncontrolled urination. Mirabegron is used alone or in combination with solifenacin to treat overactive bladder

Am J Obstet Gynecol. 2018 Mar;218(3):341.e1-341.e9.

Impact of Recommended Changes in Labor Management for Prevention of the Primary Cesarean Delivery

Thuillier C, Roy S, Peyronnet V, Quibel T, Nlandu A, Rozenberg P

Backgroun

The dramatic rise in cesarean delivery rates worldwide in recent decades, without evidence of a concomitant decrease in cerebral palsy rates, has raised concerns about its potential negative consequences for maternal and infant health. In 2014, the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine jointly published an Obstetric Care Consensus for safe prevention of the primary cesarean delivery.

Objective

We sought to assess whether modification of our protocol to implement these recommendations helped to decrease our primary cesarean delivery rate safely.

Study Design

This is a before-and-after retrospective cohort study at a university referral hospital. In March 2014, the threshold for defining active labor changed from 4 to >6 cm and arrest of first-stage labor from lack of cervical change despite regular contractions after 3 hours of oxytocin administration with amniotomy and epidural anesthesia to no change after 4 hours of adequate or 6 hours of inadequate contractions in women with an epidural. The definition of second-stage arrest of labor changed simultaneously from lack of progress for 3 hours with adequate contractions in women with epidural anesthesia to no progress for ≥4 hours in nulliparas or 3 hours in multiparas with an epidural. We compared maternal and neonatal outcomes over two 1 year periods: from March 2013 to February 2014 (before, preguideline) and from June 2014 to May 2015 (after, postguideline). We included all women with singleton pregnancies at ≥37 weeks' gestation, in vertex presentation, in spontaneous or induced labor, and with epidural anesthesia. We excluded women with an elective or previous cesarean delivery and those with obstetric or fetal complications.

Results

This study included 3283 and 3068 women in the before and after periods, respectively. The groups had similar general and obstetric characteristics. The global cesarean delivery rate decreased significantly from 9.4% in the preguideline to 6.9% in the postguideline period (odds ratio, 0.71; 95% confidence interval, 0.59-0.85; P < .01). The cesarean delivery rate for arrest of first-stage labor fell by half, from 1.8% to 0.9% (odds ratio, 0.51; 95% confidence interval, 0.31-0.81; P < .01) but was significant only among nulliparous women. The cesarean delivery rate for second-stage arrest of labor decreased but not significantly between periods (1.3% vs 1.0%; odds ratio, 0.73; 95% confidence interval, 0.44-1.22; P = .2), and the cesarean delivery rate for failure of induction remained similar (3.7% vs 3.5%; odds ratio, 1.06; 95% confidence interval, 0.06-13.24; P = .88). The median duration of labor before cesarean delivery also became significantly longer among nulliparous women during the later period. Maternal and neonatal outcomes did not differ between the 2 periods, except that the rate of 1 minute Apgar score <7 fell significantly

in the later period (8.4% vs 6.9%; odds ratio, 0.80; 95% confidence interval, 0.66-0.97; P = .02).

Conclusion

The modification of our protocol by implementing the new consensus recommendations was associated with a reduction of the rate of primary cesarean delivery performed for arrest of labor with no apparent increase in immediate adverse neonatal outcomes in nulliparous women at term with singleton pregnancies in vertex presentation and with epidural anesthesia. Further studies are needed to assess the long-term maternal and neonatal safety of these policies.

Editor's Comment: Increasing the threshold for active labor from 4 to 6 cm is expected to reduce the primary cesarean rate for arrest of labor. Whether it increases the incidence of birth asphyxia in neonate and postpartum hemorrhage in mother due to prolonged labor has to be investigated in larger randomized trials.

Cochrane Database Syst Rev. 2017 Jun 9;6:CD009792.

Methods of Term Labour Induction for Women with a Previous Caesarean Section

West HM, Jozwiak M, Dodd JM

Background

Women with a prior caesarean delivery have an increased risk of uterine rupture and for women subsequently requiring induction of labour it is unclear which method is preferable to avoid adverse outcomes. This is an update of a review that was published in 2013.

Objectives

To assess the benefits and harms associated with different methods used to induce labour in women who have had a previous caesarean birth.

Search Methods

We searched Cochrane Pregnancy and Childbirth's Trials Register (31 August 2016) and reference lists of retrieved studies.

Selection Criteria

Randomised controlled trials (RCTs) comparing any method of third trimester cervical ripening or labour induction, with placebo/no treatment or other methods in women with prior caesarean section requiring labour induction in a subsequent pregnancy.

Data Collection And Analysis

Two review authors independently assessed studies for inclusion and trial quality, extracted data, and checked them for accuracy.

Main Results

Eight studies (data from 707 women and babies) are included in this updated review. Meta-analysis was not possible because studies compared different methods of labour induction. All included studies had at least one design limitation (i.e. lack of blinding, sample attrition, other bias, or reporting bias). One study stopped prematurely due to safety concerns. Vaginal PGE2 versus intravenous oxytocin (one trial, 42 women): no clear differences for caesarean section (risk ratio (RR) 0.67, 95% confidence interval (CI) 0.22 to 2.03, evidence graded low), serious neonatal morbidity or perinatal death (RR 3.00, 95% CI 0.13 to 69.70, evidence graded low), serious maternal morbidity or death (RR 3.00, 95% CI 0.13 to 69.70, evidence graded low). Also no clear differences between groups for the reported secondary outcomes. The GRADE outcomes vaginal delivery not achieved within 24 hours, and uterine hyperstimulation with fetal heart rate changes were not reported. Vaginal misoprostol versus intravenous oxytocin (one trial, 38 women): this trial stopped early because one woman who received misoprostol had a uterine rupture (RR 3.67, 95% CI 0.16 to 84.66) and one had uterine dehiscence. No other outcomes (including GRADE outcomes) were reported. Foley catheter versus intravenous oxytocin (one trial, subgroup of 53 women): no clear difference between groups for vaginal delivery not achieved within 24 hours (RR 1.47, 95% CI 0.89 to 2.44, evidence graded low), uterine hyperstimulation with fetal heart rate changes (RR 3.11, 95% CI 0.13 to 73.09, evidence graded low), and caesarean section (RR 0.93, 95% CI 0.45 to 1.92, evidence graded low). There were also no clear differences between groups for the reported secondary outcomes. The following GRADE outcomes were not reported: serious neonatal morbidity or perinatal death, and serious maternal morbidity or death. Double-balloon catheter versus vaginal PGE2 (one trial, subgroup of 26 women): no clear difference in caesarean section (RR 0.97, 95% CI 0.41 to 2.32, evidence graded very low). Vaginal delivery not achieved within 24 hours, uterine hyperstimulation with fetal heart rate changes, serious neonatal morbidity or perinatal death, and serious maternal morbidity or death were not reported. Oral mifepristone versus Foley catheter (one trial, 107 women): no primary/GRADE outcomes were reported. Fewer women induced with mifepristone required oxytocin augmentation (RR 0.54, 95% CI 0.38 to 0.76). There were slightly fewer cases of uterine rupture among women who received mifepristone, however this was not a clear difference between groups (RR 0.29, 95% CI 0.08 to 1.02). No other secondary outcomes were reported. Vaginal isosorbide mononitrate (IMN) versus Foley catheter (one trial, 80 women): fewer women induced with IMN achieved a

vaginal delivery within 24 hours (RR 2.62, 95% CI 1.32 to 5.21, evidence graded low). There was no difference between groups in the number of women who had a caesarean section (RR 1.00, 95% CI 0.39 to 2.59, evidence graded very low). More women induced with IMN required oxytocin augmentation (RR 1.65, 95% CI 1.17 to 2.32). There were no clear differences in the other reported secondary outcomes. The following GRADE outcomes were not reported: uterine hyperstimulation with fetal heart rate changes, serious neonatal morbidity or perinatal death, and serious maternal morbidity or death. 80 mL versus 30 mL Foley catheter (one trial, 154 women): no clear difference between groups for the primary outcomes: vaginal delivery not achieved within 24 hours (RR 1.05, 95% CI 0.91 to 1.20, evidence graded moderate) and caesarean section (RR 1.05, 95% CI 0.89 to 1.24, evidence graded moderate). However, more women induced using a 30 mL Foley catheter required oxytocin augmentation (RR 0.81, 95% CI 0.66 to 0.98). There were no clear differences between groups for other secondary outcomes reported. Several GRADE outcomes were not reported: uterine hyperstimulation with fetal heart rate changes, serious neonatal morbidity or perinatal death, and serious maternal morbidity or death. Vaginal PGE2 pessary versus vaginal PGE2 tablet (one trial, 200 women): no difference between groups for caesarean section (RR 1.09, 95% CI 0.74 to 1.60, evidence graded very low), or any of the reported secondary outcomes. Several GRADE outcomes were not reported: vaginal delivery not achieved within 24 hours, uterine hyperstimulation with fetal heart rate changes, serious neonatal morbidity or perinatal death, and serious maternal morbidity or death.

Authors' Conclusions

RCT evidence on methods of induction of labour for women with a prior caesarean section is inadequate, and studies are underpowered to detect clinically relevant differences for many outcomes. Several studies reported few of our prespecified outcomes and reporting of infant outcomes was especially scarce. The GRADE level for quality of evidence was moderate to very low, due to imprecision and study design limitations.High-quality, adequately-powered RCTs would be the best approach to determine the optimal method for induction of labour in women with a prior caesarean birth. However, such trials are unlikely to be undertaken due to the very large numbers needed to investigate the risk of infrequent but serious adverse outcomes (e.g. uterine rupture). Observational studies (cohort studies), including different methods of cervical ripening, may be the best alternative. Studies could compare methods believed to provide effective induction of labour with low risk of serious harm, and report the outcomes listed in this review.

Editor's comment

Induction of labor in previous cesarean especially with poor Bishop's score is challenging because of risk the of scar dehiscence. Foley's catheter is considered safe for ripening of cervix whereas the use of prostaglandin E2 gel is not entirely safe and PG E1 is not recommended for use in previous cesarean pregnancy. Syntocinon is to be used with caution. As with primary cesarean the rate of repeat cesarean has increased dramatically because of the added risk of rupture uterus with vaginal delivery. However careful history , examination and a review of the operative notes will help select candidates appropriate for VBAC and a cautious monitoring during induction will increase the safety of labor induction in previous cesarean delivery.

Answer to Quiz: July Issue

Congratulations to Dr Anita Rajohria, Dr Sonali Jain and Dr Anu Handa for successfully answering the quiz and crossword correctly!!

Answer Key for Crossword July issue

Down: 2. Fecooral 3. Chhaya 4. Interferon 5. Essure 8. HBeAg

Across: 1. AFLP 6. NSV 7. Transplant 9.DMPA 10. Gynefix

Answer Key for pictorial quiz July issue

Figure 1: Ans 1. Depot medroxyprogesterone acetate subcutaneous injection.
Ans 2. 104mg/0.65ml given every 3 months
Ans 3. Lower dose of drug delivered with similar efficacy as i.m preparation; Can be self administered

Figure 2: Ans 1. China
Ans 2. Intramuscular administration of 3 doses(0.5 ml) at 0, 1 and 6 months.
Ans 3. 16-65 years

Clinical Proceedings of AOGD Clinical Meeting held at All India Institutes of Medical Sciences, New Delhi on 27th July, 2018

1. Caesarean Scar Pregnancy: Challenge for clinician

Alka Kriplani, Monica Gupta, Isha Kriplani, Reeta Mahey, Garima Kachhawa

Caesarean scar ectopic pregnancy is a relatively new and rare type of ectopic pregnancy with recent rise in incidence due to rising caesarean section rate and improved imaging. Four cases of caesarean scar ectopic pregnancies are presented. Two cases that were endogenic type with live ectopic and very high b-hCG (50,099 mIU and 2,97,969 mIU, respectively) were managed by surgically assisted medical method. Intrasac potassium chloride 2-4 ml was instilled under transvaginal ultrasound guidance followed by systemic methotrexate 1 mg/kg slow intravenous four doses alternating with leucovorin. The time for b-hCG to become negative in both patients was 91 days and 119 days, respectively. Other two cases that were exogenic type were managed by laparoscopic excision and scar revision.

Both medical and surgical management of caesarean scar ectopic pregnancies in properly selected patients has high success rate. Surgically assisted medical management is less invasive but prolonged follow up is needed due to slow fall in b-hCG. Laparoscopic excision requires surgical expertise but ensures complete removal of ectopic mass and faster resolution of b-hCG. Surgical excision also has added advantage of repair of scar defect which will reduce the risk of rupture and recurrence in future pregnancy.

2.Hair in Urine: A patient's nightmare!

Jyoti Meena, Bhavani Shekhar, Sunesh Kumar, Seema Singhal, K K.Roy, Neeta Singh

Introduction

Dermoid cysts are benign tumours which account for about 10-20% of ovarian tumours. They are usually asymptomatic but complications such as torsion, infection, rupture, malignant transformation and rarely perforation into adjacent viscera may occur.

We report 2 cases of ovarian dermoid perforating into urinary bladder.

Case1: A 26 yrs old unmarried female, presented with chief complaints of passage of hair in urine and recurrent UTI for 6 months. Her ultrasound and CT abdomen/pelvis showed a 4 x3.5cm right ovarian cyst with fat density and calcifications invading into urinary bladder with fat density areas with large component in urinary bladder measuring 4.1x3.8x3.9cm.Cystoscopy confirmed the findings of dermoid invading bladder.

Case2: A 50years old P2L2 female presented with complaints of passage of hairs and pus like material in urine for 4 months. Ultrasound and CECT abdomen/ pelvis revealed a 12x10 cm homogenous mass, with anterior part of mass communicating with urinary bladder and bilateral ovaries were not visualized separately. On cystoscopy an external compression at dome was evident with mass of hairs seen coming out through fistulous tract.

Surgery: First patient underwent laparotomy with bilateral dermoid cystectomy with cystotomy and intravesical dermoid removal and bladder repair. Second patient underwent abdominal hysterectomy with salpingo-oopherectomy along with bladder fistula excision and repair. This patient on post op day 8 presented again with abdominal distension, decreased urine output and passage of blood stained discharge through suture line. An abdominal pigtail insertion revealed collection of urine in abdomen which was drained. CT urography showed a fistulous connection between bladder and abdominal wall. Patient was managed conservatively.

Histopathology in both cases showed mature cystic teratoma.

Conclusion

Ovarian dermoid are benign tumours with an indolent course. But rarely spontaneous rupture and perforation into urinary bladder may occur.Surgical resection of the lesion with bladder repair is the definitive treatment and histopathological examination is essential to exclude malignant transformation.

3. Double Valve Replacement During Cesarean Delivery: Multidisciplinary management

Vatsla Dadhwal, Rajeshwari, Aparna Sharma, Devaguru, Preeti

A 20-year-old second gravida, known case of rheumatic heart disease with severe valvular aortic stenosis with severe mitral stenosis presented at AIIMS at 34 weeks period of gestation in threatened preterm labour. She

was admitted in emergency. Her functional capacity was New York heart association III. On examination her pulse rate was 100/ min, regular, BP was 100/60, mild pallor was present, B/L lung fields were clear, no crepitation, CVS examination revealed ejection systolic murmur in aortic area and mid-diastolic murmur in mitral area. On obstetric examination uterus was corresponding to 30 weeks period of gestation, mild contraction were present. Fetal heart rate was normal. She was positioned in propped up position. Oxygen was given by mask. IV sedation was given. No tocolysis was given. Strict maternal and fetal monitoring was done. Patient and the relative were explained regarding high-risk status of her cardiac condition. Cardiology consultation was sought. They advised to optimize the patient with b-blockers and diuretics. Fortunately her contraction subsided. Her medical treatment was continued. As obstetricians, our concern was her perinatal period as intrapartum and immediate post partum period has greatest chances of cardiac failure in such patients (up to 70% in pt with severe stenotic lesions). She was planned for elective cesarean delivery at 36 weeks in view of her cardiac condition and history of hysterotomy. An anesthesia consultation was sought. Finally the decision of double valve replacement during cesarean delivery was taken. She underwent LSCS under general anesthesia. After that patient was put on cardiopulmonary bypass (CPB) for double valve replacement. Valve replacement was done successfully. Patient had uneventful postoperative period.

Perinatal management of pregnant women with VHD should be made by a multidisciplinary team consistent of an obstetrician, anesthesiologists, a cardiologists, and cardiovascular surgeon. Combining cesarean section and valve intervention is a feasible option for symptomatic patients as labour and immediate post partum is most high-risk period for cardiac decompensation in such patients. CPB is a feasible option especially with caesarean section as fetal effects are mitigated.

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