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AOGD BULLETIN



AOGD Theme 2017-18
'Optimizing Women's Health Through
Enhanced Skills and Best Practices'

Issue:
Operative Obstetrics

AOGD SECRETARIAT

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President's Message



Dear Friends

Greetings once again from the President's Desk! July was a month full of events and so will August be. AOGD is here because of its members and when they take a forefront in academic activities it is heartening. AOGD and Chairpersons of various sub-committees hold CME's/skill workshops every month on an array of subjects and are actively working to bring out guidelines for contemporary practice.

It is my privilege to announce the names of Dr Neerja Bhatla (AIIMS) as President and Dr Ashok Kumar (MAMC & LNH) as Vice-President AOGD, for year 2019-20. Dr. Manju Khemani and Dr. Renu Misra graciously withdrew to allow members from large academic institutions to take on the reigns of AOGD, a society with close to 2500 members. I thank them for their vision. AOGD will also be bidding for AICOG 2020 and with the largest member strength in the country and legendary luminaries we hope to host the best AICOG ever! Delhi, a multidimensional metropolis, the power city of the country seamlessly blends the old and the new. All of you will agree that the infrastructure is the best in the country with sprawling new convention centres and sufficient hotels to cater to delegates. The thrill of visiting Delhi and its magnificent monuments, museums, malls will be magical!

The Editors must be applauded for bringing out a brilliant issue on 'Operative Obstetrics'. Caesarean sections have become synonymous with 'Operative Obstetrics' and this trend needs deep thought and changes in practice. The article on 'Reducing Caesarean Section: a multifaceted challenge' by Dr. Rinku Sen Gupta et al from Sitaram Bhartia Hospital discusses that leadership, training, understanding why the rates have increased, involvement of a host of support staff and not just individual obstetricians are needed to bring about change. All other articles make useful reading with updates and advances. 'Benefits of Antenatal Yoga' takes you through the various 'limbs' of this exercise form and its value in pregnancy. Enjoy the issue!

The FOGSI/AOGD collaboration '**BOH - The Trilogy**' is round the corner on 19th and 20th August 2017 at 'Hotel Leela Ambience, Gurugram'. Hope to see you in large numbers. Please also save your dates for the 39th Annual Conference of AOGD to be held on the 18th & 19th November, 2017 at the India Habitat Centre. We promise you an academic extravaganza!

Let's celebrate our freedom as responsible citizens of the country and enjoy that 'Independence Day' emotions of patriotism.

Shalini Rajaram
President, AOGD (2017-18)

Vice President's Message



Dear Friends

This year as we celebrate our 71st Independence day on 15th August, let us revel in the freedom and glory regained by our freedom fighters.

Childbirth is a women's rights issue and a reproductive justice issue. The fourth issue of the bulletin on "Operative Obstetrics" covers majority of the important situations which is faced by each one of us day in and day out. As rightly said by John Williams "**Cesarean section requires only a few minutes of time and a modicum of operative experience; while vaginal birth implies active mental exertion, many hours of patient observation and frequently very considerable technical dexterity**". Childbirth by its very nature carries potential risks for the woman and her baby, regardless of the route of delivery and there is an urgent need to audit and scrutinize our practices and reduce the ever increasing caesarean rates. With increase in caesarean rates comes the obstetrician's nightmare of morbidly adherent placenta, scar pregnancy, hemorrhage, obstetric injuries and increase in maternal morbidity and mortality. Moreover, the art of instrumental delivery is dying out and we need to take upfront measures to revive the same, learn the correct indications and application.

I again take this opportunity to invite you all for the forthcoming conference "BOH-The Trilogy" on 19th and 20th August at Hotel Leela Ambience, Gurgaon. Please join in large numbers and make the conference a grand success.

Jai Hind!! Jai Bharat

Kiran Guleria
Vice President AOGD (2017-18)

From the Secretary's Desk.....



Dear AOGDians

Greetings!!

Hope you are keeping well and enjoying this monsoon. Sometimes I think we are blessed with seasons in Delhi. Don't forget to take a stroll in rain and down memory lane.

In today's age of knowledge explosion; keeping abreast with latest advances is a necessity and our editors are striving hard to fulfill that. So, here we are with another issue of bulletin; a sort of refresher course on old techniques like cerclage, LSCS and Forceps. A pictorial guide on systematic uterine devascularization is given to tackle obstetric haemorrhage, the obstetrician's nightmare. Laparoscopy as a safe procedure in pregnancy is also discussed.

By the time this issue reaches your hands BOH trilogy conference on 19th and 20th August will be imminent but it will be worth your while to register and enjoy the academic feast.

I am delighted by your enthusiastic response to our skills lab series; the next workshop will be on 28th September on "Obstetric Skills". Registration is free but seats are limited therefore register early.

I invite you all to browse our website of the annual conference, www.aogdconference2017.com and the interesting programme we have envisaged for you. Register early to ensure choice of workshop.

Adieu till next bulletin!!

Abha Sharma
Secretary AOGD (2017-18)

Monthly Clinical Meet

Monthly Clinical Meet will be held at VMMC & Safdarjung Hospital, New Delhi
on **Thursday, 24th August, 2017** from 4:00-5:00pm.

From the Editorial Board

Respected Seniors & Dear Friends,

Greetings from the editorial team. After an issue on the Surgery for Benign Gynecological Diseases, we decided to bring out an issue on Operative Obstetrics in the month of August. Childbirth, such a normal physiological event, but every time while passing through the process, an obstetrician passes through so many feelings of excitement & fear and that cry brings smile not only for the mother but the obstetrician is also equally relieved and pleased. What a profound task.....and one is awe stuck and humbled every time by the nature. Because.....only the attending obstetrician knows...what all fetus has passed through and what all could have gone wrong.

Operative obstetrics has evolved so much in the last century that from the days of cesarean being an exception we have reached a scenario where rising cesarean rates is the issue of concern with sometimes figure crossing 50% mark. Last few decades saw different concerns being raised like "Are Mid Forceps deliveries acceptable in modern Obstetrics?" to "Is Instrumental Delivery a disappearing art?" and finally wondering whether "Is vaginal delivery a disappearing art?". From the concerns for safety of operative delivery, now we are discussing whether a cesarean delivery was justified or not. Managing pregnancies with previous cesarean sections with unique problems like adhesions, risks of scar dehiscence/ rupture, Morbidly adherent placenta etc have become a major aspect of the specialty.

Considering all this we have included an update on cesarean section and an article on reducing cesarean section rates and SOP on instrumental deliveries. Laparoscopy during pregnancy is an upcoming skill to be used with caution. Also the sections on Cervical Cerclage, Obstetric injuries and technique of uterine devascularization will help one to revise and improvise the necessary skills.

Learning is a never ending process and this bulletin is our attempt to contribute. As it is well said:

*Courage doesn't always roar.
Sometimes courage is the quiet voice
at the end of the day, saying,
"I will try again tomorrow."*

Do attempt the quiz in the end and all feedbacks are welcome.

With warm regards,

The Editorial Team
AOGD (2017-18)



Caesarean Section: A technical update

K Aparna Sharma¹, Mrinalini Gupta²

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Introduction

The word Caesarean is derived from the Latin verb 'Caedere' which means 'To Cut'. It is one of the oldest and the most common surgical procedure being performed in the field of obstetrics. There has been a rampant rise in caesarean section (C-section) rates over the recent years, with every 1 out of 3 women giving birth by C-section in United States in 2011¹. WHO recommends an ideal C-section rate of 10-15%. In India, the caesarean section delivery is estimated to be 9.2% based on DLHS-3 (2007-08) data, though a substantial inter-state variation exists, with highest in Kerala (31.8%) followed by Andhra Pradesh (29.3%) and Tamil Nadu (23.2%). There have been a lot of variations in techniques of C-section over the past few years in order to improve the maternal and fetal outcomes. From being used only as lifesaving procedure for the fetus, C-section has now evolved into more of a decision making procedure with a plethora of maternal and fetal indications. This update will discuss the step by step techniques of C-section and provide evidence-based recommendations for each surgical technique.

History

In 1865, the mortality associated with Caesarean Section was 85% as uterus was not sutured after delivery of baby. Eduardo Porro in 1876 advocated hysterectomy with caesarean delivery resulting in decreased mortality but acceptability was low. In 1882, Kehrer and Sanger introduced adequate method for closure of wound which contributed greatly in reducing the morbidity of caesarean section. In 1911, Munro Kerr introduced the lower segment transverse incision resulting in marked reduction in death rates from caesarean section.

Step by Step Technique of Caesarean Section

The technique for caesarean delivery includes the following:

1. Laparotomy via midline infraumbilical vertical or transverse incision
2. Hysterotomy via transverse or vertical incision
3. Fetal delivery
4. Uterine repair
5. Closure

1. Skin Incision

The incision can be transverse or infraumbilical midline vertical. Transverse skin incision is preferred over vertical incision because of lesser postoperative pain, greater wound strength and better cosmetic appearance. Vertical incision is used when a faster delivery of fetus is needed and incision -to-delivery time is critical. Also, a vertical incision may be given in patients with previous vertical incision and in cases of morbidly adherent placenta where classical caesarean section or hysterectomy is anticipated.

The transverse incisions used for caesarean delivery are the Pfannenstiel and Joel- Cohen incisions (Figure 1). The Pfannenstiel incision is a slightly curved incision, around 2 to 3 cm above the pubis symphysis and this approach involves more sharp dissection to enter the peritoneal cavity. Joel- Cohn incision is a straight suprapubic transverse incision, 3 cms below the line that joins the anterior superior iliac spines and involves blunt dissection to open the abdomen.² In a recent systematic review comparing the two approaches, the Joel Cohen incision was associated with a significant advantage in terms of reduction of post-surgical acute and chronic pain.³ According to Cochrane 2007 review, Joel Cohen incision was associated with less fever, pain and analgesic requirements, less blood loss, shorter duration of surgery and hospital stay.²

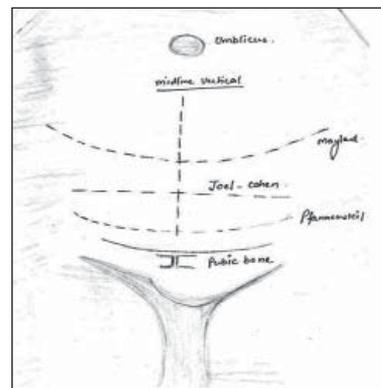


Figure 1: Skin incisions in caesarean section

2. Uterine incision (Hysterotomy)

2.1 **Types of incision:** The incision can be in lower segment or upper segment and transverse or vertical (Figure 2). It should be such that it should allow enough room to deliver the fetus without risking injury to the uterine artery or veins. Type

of incision depends upon the gestational age, fetal position, location of placenta and whether lower segment is formed or not.

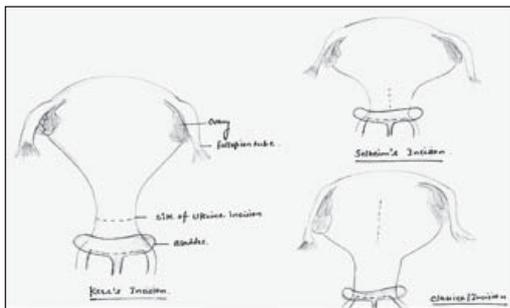


Figure 2: Uterine incisions

Lower Segment transverse incision is commonly recommended for most caesarean deliveries, advantages being lesser blood loss, less need of bladder dissection, better approximation and lower risk of rupture in future pregnancies. The major disadvantage is that it cannot be extended laterally without risking laceration of uterine vessels, requiring a J shaped or inverted T extension which can result in a potentially weaker scar later on. Vertical incision can be low vertical (Kronig, De Lee) and classical vertical. Indications of LUS vertical are placenta previa, large baby, shoulder presentation and conjoint twins. Disadvantage is possible upward extension to upper segment leading to bleeding or downward extension into bladder, cervix or vagina. A vertical incision extending into upper uterine segment/fundus is termed a classical Caesarean section. It is rarely performed these days as it is associated with a higher risk of uterine rupture in next pregnancy (4 to 9%) compared to lower segment transverse incision (0.2-1.5%). Common indications for performing a classical C- section are poorly developed lower segment (e.g. Extremely preterm breech presentation), lower uterine segment (LUS) pathology precluding a transverse incision (eg. Large leiomyoma, placenta accreta), densely adherent bladder, and post-mortem delivery.

2.2 Blunt versus sharp extension of uterine incision: Saad et al in a meta-analysis in 2014, found that blunt expansion technique was associated with lower drop in postoperative hematocrit, lower rate of unintended extensions and a shorter operative time. There were no differences in the rates of blood transfusion, endometritis, use of uterotonic, and neonatal outcomes between both techniques.⁴

3. Fetal delivery

Technique of fetal delivery depends on fetal presentation, fetal lie, gestational age, and whether

head is deeply impacted or free floating. Fetal delivery with cephalic presentation is usually uncomplicated. The obstetrician inserts his/ her dominant hand into the uterus through the hysterotomy incision, and tries to hold the top of fetal head. The head is gently elevated and flexed to bring the occiput toward the uterine incision and then taken out with the help of transabdominal fundal pressure applied by the assistant. The shoulders are then delivered one by one followed by the rest of the body. The underlying principle is to use the curvature of fetal head as leverage, avoid overflexing the wrist and using lower uterine segment as fulcrum. Some special circumstances require additional manoeuvre and more expertise.

3.1 Deeply Impacted Fetal head: Impaction usually occurs after a prolonged second stage of labour or after failed attempts of operative vaginal delivery. It is essential to know these techniques as inadvertent manoeuvre can cause extensive trauma to the uterine vessels, cervix, vagina, bladder and may even injure the fetus. Incision should not be too low in the LUS as it may incise the cervix or vagina leading to massive bleeding. It is imperative to take some time to assess the anatomy and make a well placed incision carefully to help prevent injury.

- a. **Reverse breech Extraction:** It was described by Fong and Arulkumaran in Singapore in 1997. In this technique, operator's hand is inserted into the uterine fundus to grasp the fetal feet, which are then pulled to perform a footling breech extraction. Traction should be applied parallel to the axis of the legs to avoid fracturing the fetal tibia/ or fibula. This technique appears to have a lower risk of lateral or downward uterine incision extension, less blood loss, and shorter operative times compared with abdomino-pelvic delivery.⁵
- b. **Patwardhan technique or Shoulder's First:** It is an alternative technique introduced by Dr. Patwardhan in 1957 to ease the delivery of deeply impacted head. In this technique, anterior shoulder is delivered by hooking the arm followed by another shoulder- trunk (keep back anterior)-buttocks-one leg- other leg-and finally head is delivered in succession. Compared with abdomino-vaginal method, this technique is associated with reduced risk of uterine lacerations/extensions, bladder injuries, and need for blood transfusions.⁶
- c. **Abdomino-Vaginal method:** An assistant using suitable aseptic precautions pushes fetal head upward into the vagina to disengage the impacted fetal head. At the

same time, the operating surgeon assists from above by providing steady upward traction on fetal shoulders and attempting to flex the fetal head. Disadvantage of this method is increased risk of extension of uterine incision laterally leading to laceration of surrounding structures.⁷

- d. **Use of forceps/obstetrical spoons:** As they take less space than the obstetrician's hand, they can be easily applied around a tightly impacted head. There is limited data on the risks and efficacy of these instruments.

3.2 **Free-floating head:** The free floating head is difficult to grasp or establish traction to pull it through the incision, and also applying fundal pressure has a tendency to push the head laterally rather than towards the uterine incision. Options available are

- a. **Use of forceps/vacuum-** Use of either one or both blades of outlet forceps to rotate the occiput anteriorly can be done.
- b. **Internal podalic version:** Grasping the foot and delivering as breech extraction is another option.

3.3 **Transverse Lie**

- a. **Dorso-superior (back up):** A low transverse incision is made and fetal feet is grasped to perform a footling breech extraction.
- b. **Dorso-inferior (back down):** It is more difficult to deliver because the fetal feet are difficult to grasp. One approach is to perform an intraabdominal version before hysterotomy to convert transverse lie into breech presentation and then extract fetus as footling breech

4. **Uterine repair**

4.1 **Exteriorization of uterus**

In a recent meta-analysis, Zaphiratos et al compared perioperative outcomes following uterine exteriorization versus in situ repair after C- section. They found no clinically significant differences in terms of blood loss, intraoperative nausea, vomiting or pain between the two approaches.⁸ Uterine exteriorization has been associated with shorter operating times but slightly longer time before return of bowel function.

4.2 **Choice of suture**

Choice of suture depends on institution and personal preference. A 0-delayed absorbable synthetic suture is commonly used to close the uterus. One of the interventions in CORONIS trial was to compare the use of chromic catgut versus polygalactin 910 for uterine repair. Use of either

suture material did not result in statistically significant difference in maternal outcomes.⁹

4.3 **Single versus double layered closure**

Double layered closure is usually performed for uterine repair as there is a theoretically increased risk of uterine rupture in subsequent pregnancy with single layer approach. In a systematic review by Roberge S et al, they concluded that the short term complications like endometritis, wound infection, maternal infectious morbidity, blood transfusion, length of hospital stay and mean blood loss were comparable for single versus double layered closure, except that single layer closure had shorter operating time (-6.1 min, $P < 0.001$) than double layered closure. Although single layer and locked first layer was associated with lower residual myometrial thickness on follow up ultrasounds, current evidence is insufficient to conclude about the risk of uterine rupture with either technique.¹⁰

5. **Abdominal closure**

5.1 **Closure of peritoneum**

In a Cochrane 2014 review to compare short and long term outcomes of closure versus non closure of the peritoneum at caesarean section, authors found significant reduction in operative time by 6 minutes and reduction in the period of hospitalization post-caesarean in the non-closure group. According to Cochrane review, there is currently insufficient evidence of benefit to justify additional time and use of suture material necessary for peritoneal closure.¹¹ In another study by Kapustian V et al to see the effect of closure versus non closure of peritoneum on adhesions, they found both groups were comparable with regard to proportion of patients with intraoperative adhesions at repeat caesarean.¹²

5.2 **Closure of fascia**

Fascial closure is a critical step, as it provides most of the wound strength during healing process. Applying too much tension on the fascia during re-approximation should be avoided. Classically, the sutures are placed 1 cm apart and 1 cm away from incision avoiding too much tension. For transverse fascial incisions, a delayed absorbable No. 1 braided suture is commonly used.

5.3 **Closure of skin**

In a meta-analysis, Chelmow et al found that closure of sub-cutaneous fat during caesarean delivery in women with fat thickness greater than 2 cm resulted in 34% decrease in risk of wound disruption.¹³ Routine use of wound drains in caesarean delivery was not found to be

beneficial in a 2013 meta-analysis.¹⁴ Mackeen AD et al did a meta-analysis to compare suture versus staples for skin closure after caesarean. They found that use of sutures significantly decreases wound morbidity, specifically wound separation, without significant differences in pain, patient satisfaction or cosmesis. Only drawback of suture placement is that it takes 7 minutes longer than staples.¹⁵

The CORONIS trial

CORONIS was a pragmatic international 2×2×2×2 non-regular fractional, factorial, unmasked, randomized controlled trial that examined five elements of the caesarean section technique in intervention pairs. The study was conducted at 19 sites in Argentina, Chile, Ghana, India, Kenya, Pakistan, and Sudan. The study recruited 15,935 women between May 2007 to December 2010. Five intervention pairs were-

- (a) Blunt versus sharp abdominal entry;
- (b) Exteriorisation of the uterus for repair versus intra abdominal repair;
- (c) Single-layer versus double-layer closure of the uterus;
- (d) Closure versus non-closure of the peritoneum (pelvic and parietal); and
- (e) Chromic catgut versus polyglactin-910 for uterine repair

The primary outcome was the composite of death, maternal infectious morbidity, further operative procedures, or blood transfusion (>1 unit) up to 6-week follow-up visit. The study did not find any statistically significant differences in any of the five intervention pairs for the primary outcome and concluded that any of the surgical technique is acceptable.

Conclusion

C-section is one of the most frequently performed surgery by the obstetricians. Although considered a relatively simpler surgery, complications arising from it can have devastating consequences for both the mother and fetus. It is of utmost importance for every obstetrician to select the right indication and to have the knowledge of various modifications of the standard technique of C-section to reduce morbidity and mortality.

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Reducing Caesarean Section Rates- A multifaceted challenge

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High Caesarean Delivery Rates: Present scenario

Caesarean section has revolutionized maternity care and saved lives of millions of women and babies. However, WHO states that any increase in caesarean section rates above 10% to 15% does not improve maternal or neonatal outcomes. In United States, both federal document *Healthy People 2010* and American College of Obstetrics and Gynecology have established a goal of 15.5% caesarean section (CS) for *first time* births. Although the optimal CS rate is debated internationally, there is no doubt that unacceptably high rates exist all over the world with Brazil topping the list with a national CS rate of 51.9%.¹ The high CS rates (over 50%) at government hospitals in South India are under focus with the Union Health Ministry expressing serious concern about this issue. Closer home a cluster randomised household survey in Delhi showed a CS rate of 53.8% in private sector and 23.7 % in public sector.² Varying perspectives among both providers and pregnant women drive the discussion surrounding caesarean birth. But there is no doubt that Caesareans must be performed when medically indicated and cannot be used as a surgery of convenience either for the doctor or for the patient.

Factors Affecting Caesarean Rates

In the US significant variation in the rates of nulliparous term singleton vertex cesarean births in various states indicates that clinical practice patterns affect the number of CS performed. There also is substantial hospital-level variation within the same state. Studies have shown a 10-fold variation in the cesarean delivery rate across hospitals in the United States, from 7.1% to 69.9%, and a 15-fold variation among low-risk women, from 2.4% to 36.5%.³ Studies that have evaluated the role of maternal characteristics, such as age, weight, and ethnicity, have consistently found these factors do not account fully for the temporal increase in the cesarean delivery rate or its regional variations. These findings suggest that other potentially modifiable factors, such as patient preferences and practice variation among hospitals, systems, and health care providers, likely contribute to the escalating cesarean delivery rate.

Strategies for Reducing Cesarean Rates

Reducing Caesarean section is a multidimensional issue

and is a complex project with medical, social, cultural and economic implications. Various strategies proven or presumed to be effective in this regard are:

- Focusing on the role of qualified and skilled midwives and obstetricians to manage and handle a safe vaginal delivery is one of the basic steps to reduce caesareans.⁴
- Introducing pain relief issues in the curriculums of midwifery education and obstetrics is suggested as an effective way to reduce the inclination of the mothers to caesarean deliveries.⁴
- Informing the community about the adverse outcomes of non medically indicated caesarean section should be encouraged so that mothers make a proper decision for their delivery.⁴
- Educate mothers on pain and labor physiology for increasing their knowledge and help them to overcome fear of labor. This could be achieved by closer interaction between health policy makers and mass media policy makers to influence women to choose vaginal delivery. The role of childbirth preparation classes was reported in another study.
- Also strategies that promote standards and developing regulation to provide good quality care should be driven by hospitals both private and public. Developing clinical guidelines to provide quality services is one very important step in this process.
- Since caesarean revenues and profitability for hospitals is, without doubt, an important issue associated with higher caesarean delivery rates, regular sharing of perinatal data needs to be mandated. Also insurance companies could have more supervision in preventing unnecessary cesarean deliveries and also allocating more tariffs to vaginal birth than cesarean deliveries.
- Another supposed strategy could be performance supervision and to provide feedback to health care providers to control cesarean delivery rates, as some studies showed its efficacy.⁴

Reducing Cesarean Rates: An institutional experience

We at Sitaram Bhartia Institute of Science and Research, a private non profit organisation have been making relentless efforts to promote normal delivery and reduce our caesarean section rates to a reasonable figure that ensures safe and quality care. We follow internationally accepted evidence-based guidelines in ante and

intrapartum period, promote a structured approach in which teams of health care professionals (obstetricians, Obstetric Nurses, Child birth educators, Dieticians, Physiotherapists, Neonatologists, Quality Managers) work together to comprehensively address needs of patients and their families and also continuously monitor perinatal outcomes.

Our journey towards the goal of reducing caesarean sections in the institute has been a rollercoaster ride, punctuated with both failures and successes.

In the year 2001 the overall caesarean rate was 79% in our hospital. On analyses of the situation it soon became clear that the practice of maternity care and delivery was consultant centred. Antenatal and Intrapartum care was not standardised and interventions varied from one consultant to another.

The Organisational leadership had a steadfast belief that it was possible to make a difference and reduce the alarmingly high caesarean rates. We looked into what evidence based practices were and tried to understand the economics and management issues related to maternity care services. As a consequence, the hospital created a **staff unit** and hired **consultants on full time basis** on salary with the understanding of providing **evidence based care**. The objective was to remove competition amongst the consultants and erase incentive based care.

The unit doctors were encouraged to work on building standard protocols of care and focus on professional development outside patient care. **Antenatal Workshops on labour and delivery** for expecting mothers were started. **Perinatal meetings** with informal data discussions were started on a regular basis. In the year 2006 the caesarean section rates were 40% and this model of care seemed to be working. However, in the subsequent years there was a steady increase in the rates and they hovered around 50-54 %. This created an alarm as to "What failed?"

The management along with doctors took stock of the situation. Thus, in 2011 began the second innings of the project of "reducing caesareans" at the institute. A series of important changes occurred. A **Quality Assurance Department** was introduced with defined responsibility of documentation and data surveillance, conducting regular audits and providing feedback to consultants and management. The institute joined the **perinatal improvement committee of IHI** (institute of health care improvement). It not only sensitised doctors to the concept of quality improvement and patient safety, but also provided definitive frameworks to assess care. The third most important development was the emergence of a **dedicated team of consultants** who shared the core philosophy of the institute to reduce caesarean section. This team clearly identified the reasons of high CS among our population and then

devised interventions specifically targeting the causes. These causes were found to be:

- Excessive weight gain and lack of exercise in antenatal period
- Lack of sensitisation of mothers regarding the adverse consequences of non medical CS
- Inadequate labour support and CS on demand in labour
- Opting for repeat CS
- Non uniform labour practices

Specific Interventions

Considering all the factors responsible (Enumerated above) and the scientific evidence available, the following interventions were introduced.

Antenatal Interventions

Antenatal workshops were made a part of structured and integrated antenatal care where all mothers were motivated for vaginal delivery. Physical fitness including physiotherapy/yoga was an integral part of this programme as number of studies have shown regular exercise can improve chances of spontaneous labour and reduce caesarean section. Model for education of patients and families was developed. Education began from the early antenatal period, education material in the form of handouts were given, benefits of healthy eating habits, exercise, preparation for normal labour and process of normal delivery were explained in OPD and in workshops. Families especially husbands were encouraged to participate in care and encouraging normal delivery

Intrapartum Interventions

A series of interventions in the form of defining labour ward practices, training of nurses and doctors on standardised care and involvement of patient and family as labour support partners was introduced. Labour ward practices included identifying and training a group of sisters to form a dedicated group of labour ward staff and introducing concept of one to one labour support in active labour⁵ with the help of nurses. Labour protocols were strengthened. Protocols to define admission in active labour, non-progress of labour and duration of second stage were set, standardization of interpretation of CTG was developed. Also all elective (non-medical) inductions and caesarean sections were discouraged (Fig 1) and written justification for each such delivery was documented. All eligible women with previous one caesarean section were encouraged for vaginal delivery after detailed counselling for VBAC (vaginal birth after CS) Robson classification was adopted as a measure to assess and monitor the caesarean rates.⁶

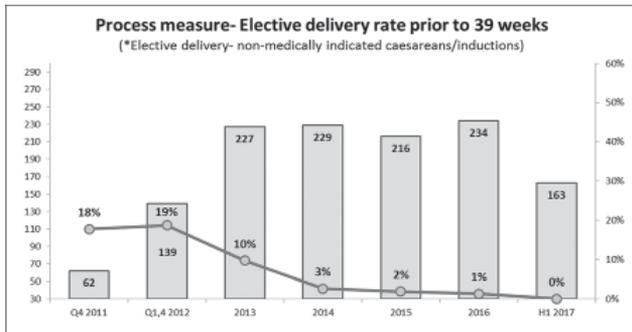


Fig1: Elective delivery rate prior to 39 weeks

Education & Training: Training of all involved in maternity care was regularised. Doctors were encouraged to enrol in online courses especially on CTG training. Regular meetings and classes to discuss cases and perinatal monthly data meets were organized to promote reflective practice. Regular training of nurses in all aspects of labour care services, CTG (cardiotocograph) training, and assessments with retraining were carried out. Group practice and team based clinical care were promoted for a stressfree work environment as solo practice is known to increase interventions.

Results of Interventions

The effects of these interventions have been gradual and sustained. Over a period of 4 years there has been a steady decline in the caesarean section rates (CSR) at our institute (Fig 2). In the year 2016 our CSR was 18%.(Graph). We have realized that preventing primary caesarean sections in low risk mothers at present will be the most effective method to reduce caesarean section rates (CSR) in future. Our CSR in low risk primigravidas is below 20% at present (Fig 3). This has been achieved without any appreciable increase in perinatal harm

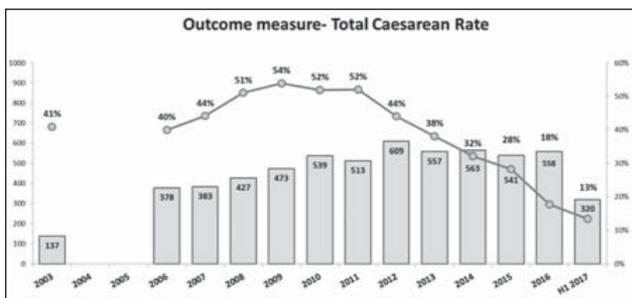


Fig 2: Caesarean Section Rates

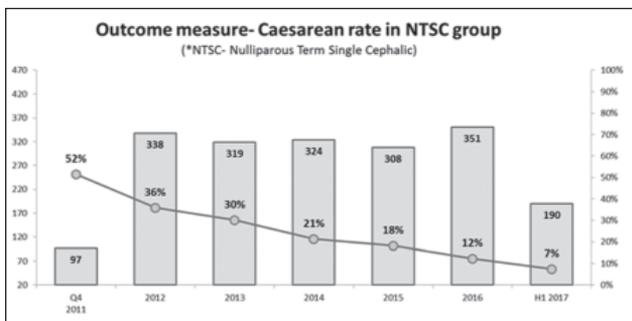


Fig 3: Caesarean rates in Low risk pregnancies

Along with these improvements, the incidence of women agreeing for trial of labour after previous caesarean section increased (Fig 4).

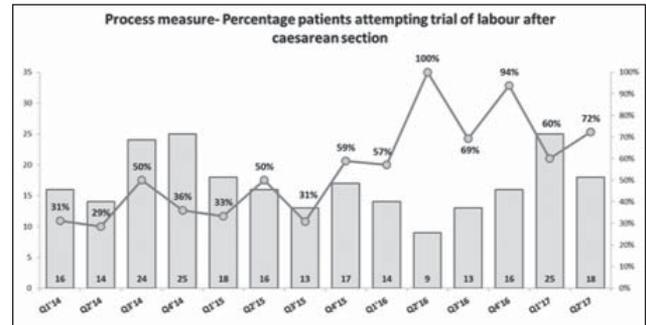


Fig 4: Attempted trial of VBAC

Conclusions

Reducing caesarean rates by interventions in maternity care is a complex ongoing challenge. Culture change in the department with emphasis on the physiological basis of pregnancy and childbirth are our guiding principles. We also believe improvements and strategies have to be customised for every hospital that wants to make a difference. In large public hospitals, demand caesareans are low and antenatal education need not emphasise the advantages of normal delivery. 1:1 labour support is not possible in staff deficient big public hospitals. But clinical interventions like admission in active labour and standard protocol for non progress of labour could work for both small and large hospitals, in private and public sectors.

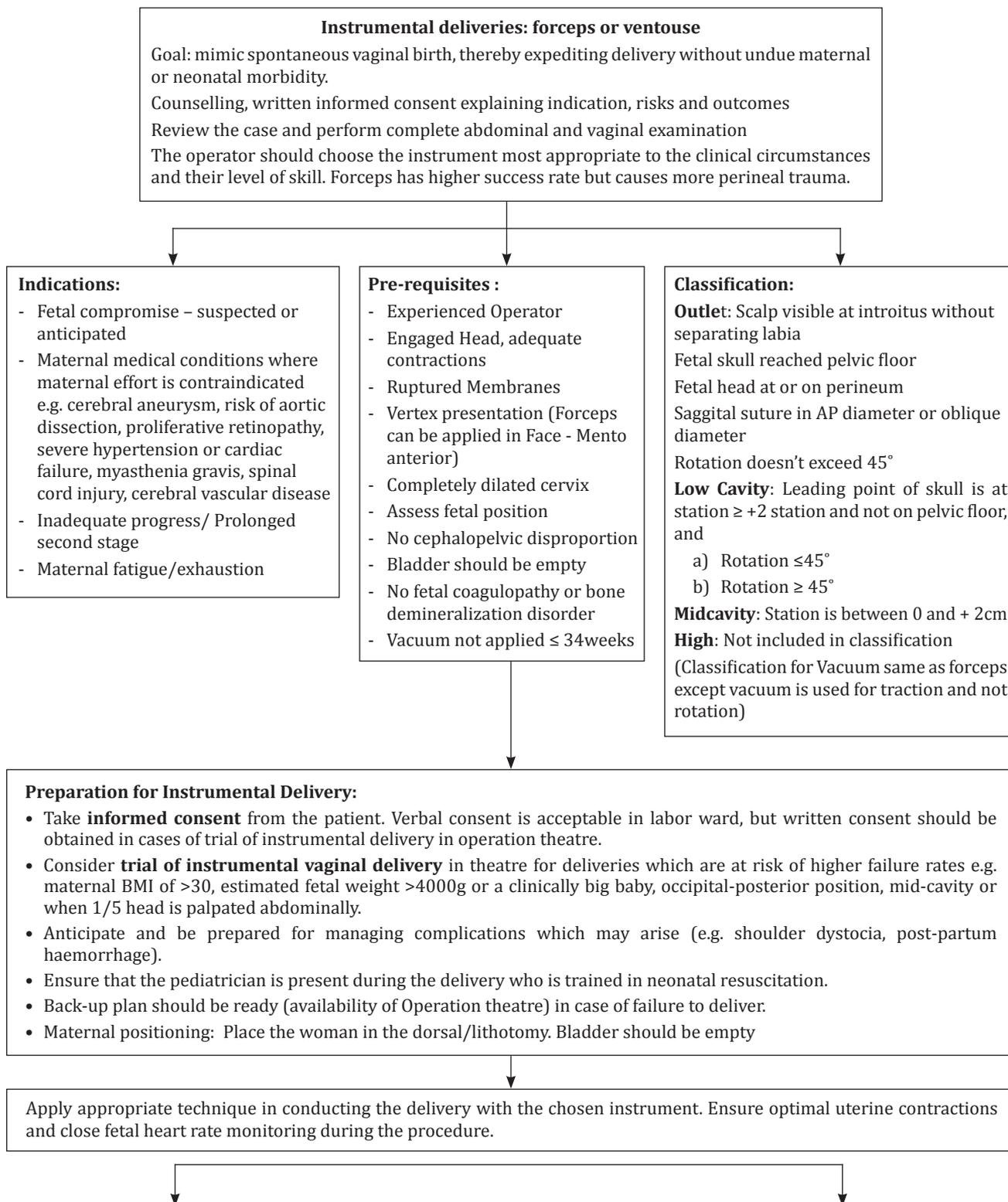
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SOP: Operative Vaginal Delivery

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Vacuum Delivery:

Effective analgesia: pudendal/ perineal infiltration
Choose the appropriate size cup that will fit the baby's head.

Apply vacuum cup with center at or behind the flexion point over the sagittal suture. The flexion point is 3cm in front of the posterior fontanelle. Check vacuum position / application

Ensure that cervix or vaginal wall is not trapped beneath the rim of the cup by palpating the entire cup circumference both before and after vacuum creation as well as prior to traction.

Procedure:

- Gradual or rapid creation of vacuum by increasing the negative pressure to 0.8 kg/cm². Chignon is formed after 1-2 minutes.
- Hold the handle and establish gentle intermittent traction coordinating with maternal expulsive efforts. Traction is initially directed downwards and then progressively directed upwards as head emerges.
- During pulls, non dominant hand should be placed inside vagina, with thumb on the extractor cup and fingers on the scalp. This helps in judging descent with traction, can detect if cup is separating.
- Abandon the procedure if cup detaches ≥ 3 times or other indications for abandonment of instrumental delivery present.
- Perform episiotomy during the crowning of the head if indicated.
- Release suction and remove cup once the head is delivered and complete delivery as normal

Forceps Delivery:

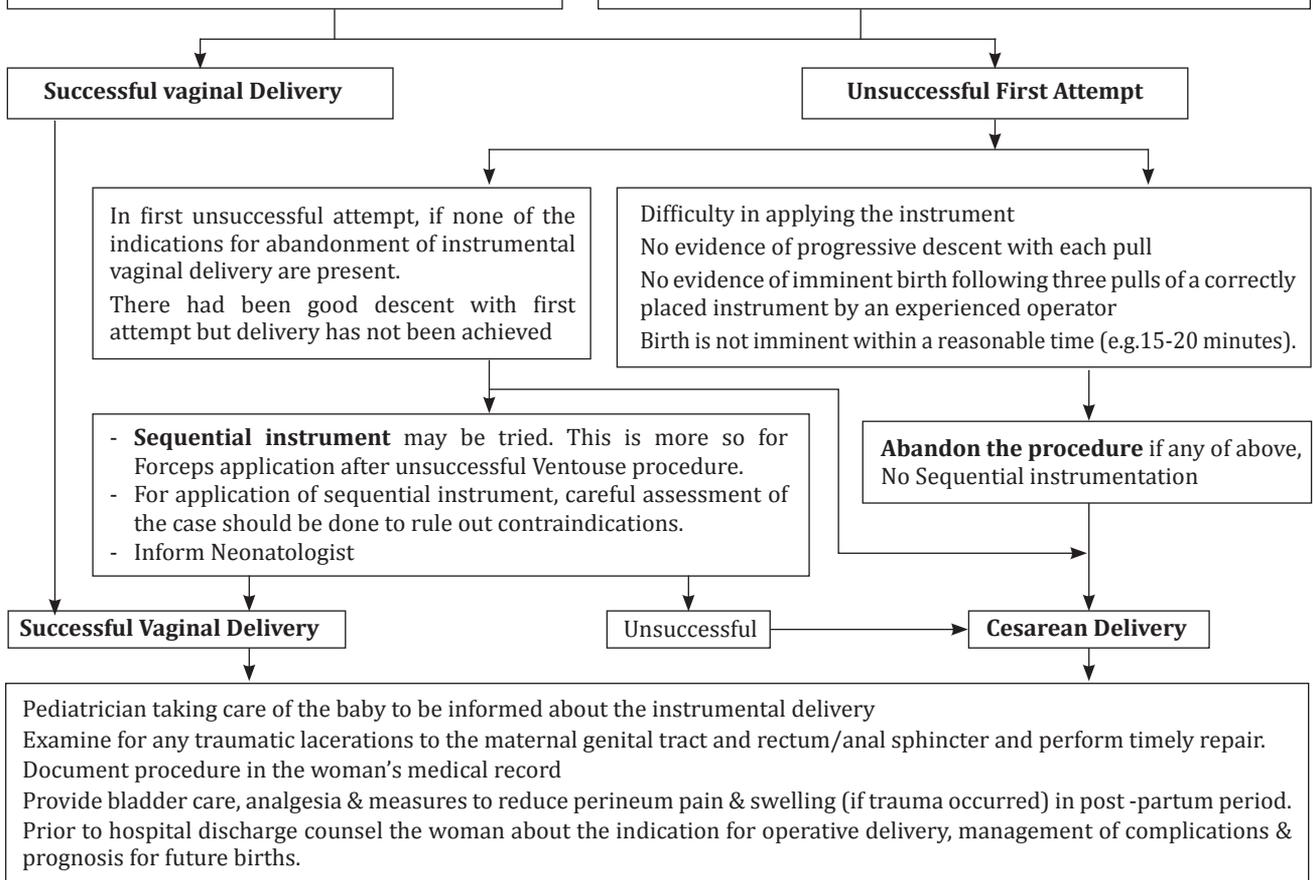
Effective analgesia: Regional or pudendal block + perineal infiltration are adequate forms of analgesia for low and outlet deliveries. A regional block (epidural or spinal) is usually required for a mid-rotational delivery.

Select appropriate instrument according to the station and rotation of the fetal head.

Phantom application: Lock the blades outside and identify Left & Right blade corresponding to the maternal sides

Procedure:

- Insert the left blade into the left side of vagina while guarding the vaginal tissue with other hand, insert the right blade with right hand. Note the time of forceps application.
 - Assess the blades to ensure correct application & lock the blades together when positioned correctly. In Occipito Anterior, correct applications is when: Post fontanelle 1cm above the plane of the shanks, Sagittal suture lies in the midline of the shanks / perpendicular to the plane of the shanks. The operator cannot place more than a fingertip between the fenestration of the blade & the fetal head on either side
 - If necessary, rotation to anterior position is performed before traction is applied. Apply traction during a contraction while the woman bears down (unless contraindicated), following the pelvic curve (downwards, forwards, upwards). The dominant hand gives outward pull while the other hand gives continuous downward pressure.
 - Unlock the blades between contractions.
 - Perform episiotomy during the crowning of the head if indicated.
 - After horizontal traction, when occiput is delivered, handles are gradually elevated, delivering head by extension.
 - Remove forceps in opposite order to the application. Note time forceps removed. Then complete rest of delivery as normal.
- Mid cavity procedures, and rotational deliveries require expertise and should be performed only by experienced operators.



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Dr Neerja Bhatla



Dr Ashok Kumar

Heartiest Congratulations

Dr Neerja Bhatla and Dr Ashok Kumar

Elected as President and Vice President AOGD 2019-20

Forthcoming Events

- Advanced fertility Gynaecology centre in association with **FOGsd** will organize Journal club and CME on **"Recurrent Miscarriages"** on **10th August** from 1:30pm onwards at Park Inn, Lajpat Nagar.
- The Reproductive Endocrinology Committee of AOGD under chairmanship of Dr. Nalini Mahajan is organizing a CME on **"Reproductive Health Dilemma's - Adolescence to Menopause"** from 2:00pm - 5:00pm on the **12th August** 2017 at the India Habitat Centre (Magnolia Hall).
- **"BOH- The Trilogy 2017"** on **19th and 20th August** focussed on current practices, breakthrough and current dilemmas on BOH patients by the FOGSI BOH Organizing Team in association with AOGD at Hotel Leela Ambience, Gurgaon
- **AOGD Clinical Meeting** at VMMC and Safdarjang Hospital, **Thursday, 24th August, 2017.**
- DGES (Delhi Gynecological Endoscopists Society) **Annual Conference** & IAGE (Indian Association of Gynecological Endoscopists- NZ) in association with AOGD on **25th-27th August, 2017** at Indian Habitat Centre, Lodhi Road; Pre Congress workshop on 25th August.
- **39th AOGD Annual Conference** on **18th and 19th November** 2017 at Indian Habitat Centre; Pre-conference workshops on 17th November 2017.

Management of Obstetric Injuries

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Maternal mortality rates have shown a drastic fall over decades. However, there is still considerable morbidity associated with childbirth and as many as 91% of women report at least one new persistent symptom till 8 weeks postpartum. Vaginal delivery is a major cause for pelvic floor and perineal trauma with about one-third sustaining occult anal sphincter trauma. The short-term sequelae of childbirth include haemorrhage, haematoma formation, nerve palsy, perineal discomfort, fistulae and dyspareunia, while the long term sequelae include uterovaginal prolapse, urinary and anal incontinence.

Lower Genital tract Trauma

Perineal Injury

Perineal Injury remains one of the most common type of maternal obstetric injuries and approximately 85% of women sustain some form of perineal trauma following vaginal delivery. Rate of obstetric anal sphincter injury (OASIS- both third and fourth degree perineal tears) is 1.7% (2.9% in primipara). With increased awareness and training, there appears to be an increase in the detection of anal sphincter injuries.

Perineal injuries have been classified by Sultan (adopted by international consultation on incontinence and RCOG) as shown in Table 1.¹

Table 1: Classification of Obstetric perineal injuries

a) First degree - Injury to perineal and / or vaginal mucosa.
b) Second-degree tears- Injury to perineum involving perineal muscles but not involving the anal sphincter.
c) Third-degree -Injury to perineum involving the anal sphincter complex
Grade 3a tear- Less than 50% of the external anal sphincter thickness torn.
Grade 3b tear: More than 50% of the external anal sphincter thickness torn.
Grade 3c tear: Both EAS and internal anal sphincters (IAS) torn.
d) Fourth Degree - Injury to perineum involving the anal sphincter complex (EAS+IAS) and anorectal mucosa.
*If there is any doubt about the degree of third-degree tear, it is advisable to classify it to the higher degree rather than the lower degree
* Rectal buttonhole tear - If the tear involves the rectal mucosa with an intact anal sphincter complex this has to be documented as a separate entity of a button hole tear and not fourth degree tear

Risk factors

These include asian ethnicity, nulliparity, birth weight >4 kg, shoulder dystocia, occipito- posterior position, prolonged second stage and instrumental delivery

Prevention

- Individualised use of medio lateral episiotomy- routine use is not recommended.
- Mediolateral episiotomies should be given with instrumental deliveries.
- Perineal protection at crowning can be protective- Hands on technique beneficial.
- Warm compresses during the second stage of labour reduces the risk of OASIS.

Identification

All women undergoing vaginal delivery should be subjected to systematic examination including digital rectal examination for the extent of injury, before suturing.

Surgical repair

Second degree tears

- Good light is needed, local anaesthesia (10-20 ml, 1% lignocaine) is infiltrated directly around the tear.
- Apex of vaginal tear is identified and starting above the apex, vagina is sutured with absorbable vicryl 2-0 / vicryl rapid 2-0 in a continuous non locking stitch.
- Perineal muscles (deep and superficial) are approximated by 3-4 interrupted stitches and not tied too tightly.
- Perineal skin is closed with interrupted or continuous subcuticular stitch.
- Vaginal examination is carried out to ensure vagina is not narrowed and rectal examination is carried out to ensure sutures have not pierced the anal canal.

Repair of OASIS

- Should be performed under regional or general anaesthesia in O.T with good lighting, good assistance, appropriate instruments and position. Anesthesia is important as it helps to relax the muscles which is crucial for good approximation.
- Torn anorectal mucosa is repaired with 3-0 Vicryl suture using either continuous or interrupted technique with knots tied in the anal lumen.(Fig 1)
- Torn IAS is identified lateral to torn epithelium and should be repaired separately with interrupted or mattress sutures (either monofilament 3-0 PDS or

2-0 Vicryl) without any attempt to overlap it. Some surgeons prefer PDS as the braided suture is likely to have higher chances of infection compared to a monofilament suture.

- EAS can be repaired either by an end to end or overlapping method. For partial thickness tears an end to end technique should be used.
- Remainder of tear is repaired as described above. Great care should be exercised in reconstructing the perineal muscles to provide support to the sphincter repair and maintain the vagino-anal distance.

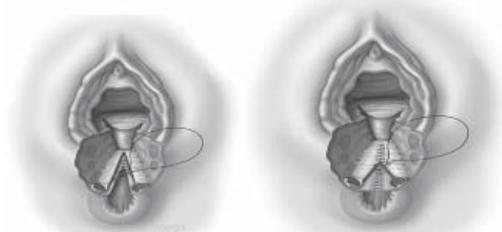


Figure 1: Repair of fourth degree perineal tear

Post operative care

- Broad spectrum antibiotics – Injection ceftriaxone & Inj Metronidazole for 3 days postoperative. (our institute protocol).
- Stool softeners (laxatives)- recommended for at least 14 days after repair
- Avoid bulking agents
- It is important to ensure that a bowel action has occurred prior to discharge.
- Patient should be reviewed at usually 6–12 weeks postpartum

Future Delivery

Those women who are asymptomatic and have no clinical evidence of a deficient perineum or low anal sphincter tone can be allowed a vaginal delivery by an experienced midwife or doctor. However, symptomatic women or those with abnormal endoanal ultrasonography and/or manometry should be counselled regarding the option of elective caesarean birth.

Periurethral and periclitoral lacerations

Small lacerations of periurethral and periclitoral regions are common in nullipara when episiotomy has not been given and pressure from the delivering head is transferred to the anterior perineum by the intact posterior perineum.

- Management-** if not bleeding actively- conservative
 If bleeding actively- repair using fine sutures after placing urethral catheter

Vaginal lacerations

Vaginal lacerations are sustained during instrumental delivery or even following spontaneous delivery. These usually involve the lower two-thirds of the postero-lateral sulci. Isolated lacerations involving the middle or upper third of the vagina are uncommon and seen following forceps application. These are usually longitudinal.

Management

- Repair is done preferably under regional or general anaesthesia.
- Good assistance, good light and long bladed retractors should be there.
- Upper extent of the tear has to be visualised and using 1-0 or 2-0 vicryl place a suture above the apex.
- If the apex is not visualised place a suture as high as possible and use this to give traction to bring the apex into view.
- A continuous or if vascular continuous locking suture is used.
- Uncontrollable generalized oozing from multiple lacerations may be controlled with the insertion of a tight vaginal pack for 12- 24 h.
- It is vital to insert a urethral catheter after inserting the pack to avoid acute urinary retention and close observation is necessary as a genital haematoma can form.
- Broad spectrum antibiotic – Injection ceftriaxone & Injection Metronidazole (our institute protocol).

Injuries to Cervix

Cervical lacerations are seen in more than 50% deliveries with majority of them being upto 0.5 cm. Major tears usually occur when dilatation is rapid or forceful due to premature pushing of presenting part through an incompletely dilated cervix, forceps application in an incompletely dilated cervix, cervical scarring or rigidity. Cervical tears are suspected when there is persistent bleeding in the presence of well contracted uterus particularly in case of instrumental or precipitate delivery. These are usually longitudinal but may be circular or cause complete annular detachment.

Management

- Cervical tears upto 2 cm- heal spontaneously while deep cervical tears need surgical management to control the bleeding.
- Cervical exploration needs good light, good assistance and long bladed vaginal retractors (atleast 2 Sims speculum) and at least 3 sponge holding forceps
- The edge of the cervix is held at 12 'o clock position with one sponge holding forceps that remains constant while the other two are applied serially at

3'o clock, 6'o clock and 9' o clock positions inspecting each quadrant individually.

- If a tear is found which is deep and bleeding two sponge forceps are placed on either side of the laceration and the cervix is gently pulled in the opposite direction to expose the apex. The suturing must start above the apex of the tear (at least 1 cm), to include all retracted blood vessels. The rest of the tear is repaired using continuous locking or interrupted stitch.(Figure 2)
- In case apex is too high to reach, a stitch is taken as high as possible and the suture is left long for further traction and the stitch can be placed above the previous one.



Figure 2. Repair of cervical tear

Complications- Fatal hemorrhage following undiagnosed upward extension into uterine vessels, cervical stenosis due to overzealous repair.

Vault rupture (Colporrhexis)

Cervical tears may reach to involve the lower uterine segment and uterine artery and its major branches, and even extend through the peritoneum resulting in torrential haemorrhage and broad ligament hematomas. Extensive tears of the vaginal vault should be explored carefully and usually require laparotomy. If there is suspicion of peritoneal perforation or of retroperitoneal or intraperitoneal haemorrhage internal iliac artery ligation with or without hysterectomy is performed.

Hematomas

Types of hematomas include vulval paravaginal, broad ligament, and retroperitoneal. Predisposing factors are prolonged second stage of labour, instrumental delivery, vulval varicosities, incomplete suturing of vaginal lacerations or episiotomies, following spontaneous vaginal delivery without obvious trauma due to rupture of vaginal venous plexus.

Vulval hematomas management (Fig. 3)

- *Small hematoma* ≤ 5 cm- can be managed conservatively with analgesics, ice packs and observation
- *Larger hematomas or enlarging hematomas-* Incision and evacuation under regional anaesthesia followed by identification and suturing bleeders if any and obliterating the dead space.



Fig 3: Vulval hematoma

Paravaginal hematoma (Fig.4): Sometimes not visible externally and may present with pain, restlessness, rectal tenesmus, inability to pass urine. Exploration is done under regional or general anaesthesia, incision made over an area of maximum distension, clots evacuated, discreet bleeders identified and ligated (frequently not found), oozing areas stitched with mattress or figure of eight suture. Dead space is obliterated and vaginal incision closed. Vaginal pack can be inserted upto 24 hours and an indwelling catheter placed.

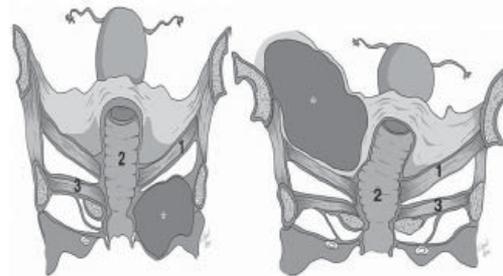


Figure 4: Paravaginal and supra levator hematomas

Broad ligament hematoma

Occurs when vessel above the level of levator ani muscle ruptures. Usually seen with deep cervical tears extending to lower uterine segment or colporrhexis. **Diagnosis** is made by presence of hypovolemic shock disproportionate to amount of external bleeding and uterus is pushed to one side by hematoma.(Fig.5)

Management- *Small hematomas* may be self limiting and will absorb in weeks. Conservative approach with close monitoring is advocated with crystalloids, analgesics and blood transfusion in hemodynamically stable patients. In case there are *signs of progressive bleeding* and patient deteriorates hemodynamically, laparotomy followed by evacuation of hematoma, ligation of bleeding points and/or internal iliac artery ligation is performed. Alternatively, angiographic embolization of branches of internal iliac arteries can be performed.^{2,3}



Figure 5: Broad ligament hematoma

Uterine rupture

Classification

- **Complete uterine rupture**- Full thickness of uterine wall with or without expulsion of fetus and /or placenta. (Fig.6)
- **Incomplete rupture or uterine dehiscence**- uterine wall ruptures but visceral peritoneum remains intact. Occurs when the scar opens completely along its length and through all three layers of the uterus.
- Uterine rupture may be *primary* occurring in a previously unscarred uterus or *secondary* being associated with a preexisting myometrial incision, injury or anomaly.



Fig. 6: Uterine rupture of previous scar

Causes

- **Previous uterine scar**- lower segment transverse scar- 0.2-1.5%, Classical & T-shaped (or inverted T) incisions - 4% and 9%.
- **Traumatic rupture of unscarred uterus**- External cephalic version/internal podalic version, blunt trauma
- **Spontaneous rupture of unscarred uterus with underlying pathology**- uterine anomalies, previous manual removal of placenta, curettage with or without perforation, multiparity with obstructed labour.

Diagnosis

- Fetal heart abnormalities on CTG (first sign)- recurrent variable or late decelerations, poor beat to beat variability
- Maternal tachycardia
- Contractions that slow down or become less intense or cease, constant abdominal pain or tenderness over previous scar, excessive vaginal bleeding.
- Fetal head not descending with uterine contractions and cervix loosely hanging over head of the fetus. Fetal parts maybe superficially palpable in the abdomen. Uterine is contour lost.
- Intrabdominal hemorrhage and shock and if rupture

extends to bladder it may present with concomitant hematuria.

Management

- Initial resuscitation with fluids and blood transfusion and emergency exploratory laparotomy is performed.
- At laparotomy diagnosis is confirmed and baby and placenta delivered quickly following which control of hemorrhage is priority. Surgical repair depends on the extent and site of rupture, patients hemodynamic condition and desire for future fertility. If tear is simple, transverse in the lower segment- repair it with interrupted sutures in layers using no. 1 vicryl.
- If rupture is longitudinal or involves lateral aspects of lower or upper segment, bleeding is uncontrollable or tissues are infected caesarean hysterectomy is done. Consideration should be given to adjacent structures broad ligament, bladder, ureter.
- Concomitant internal iliac artery ligation may be done to secure vascular control.

Injury to urinary system

Close anatomical proximity of urinary system to birth canal results in some injury during vaginal delivery

Vesico Vaginal Fistula

Causes include pressure necrosis of bladder neck following obstructed labour, direct injury or laceration following instrumental delivery, after symphysiotomy and during caesarean section due to bladder adhesions.

Treatment- Injury to the bladder during caesarean must be recognised intraoperatively and primary repair is carried out. In case fistula is recognized postoperatively, bladder should be catheterised and allowed continuous drainage for at least 2-3 weeks. If fistula still persists surgical repair is undertaken after 3 months.

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Laparoscopy in Pregnancy

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Introduction

Around 1 in 500 to 1 in 635 women require abdominal operation for a non-obstetrical surgical indication during pregnancy. Traditionally laparotomy was preferred over laparoscopy for these indications due to a presumed increased risk of uterine injury due to trocar placement or decreased fetal perfusion due to pneumoperitoneum.

Operative laparoscopy is becoming more and more popular due to its minimally invasive nature and less complications. With much evidence in literature with safety of laparoscopic approach it has become standard good clinical practice for operative treatment during pregnancy.

Indications

Most common causes of non-obstetric emergencies requiring surgery during pregnancies are appendicitis, cholecystitis and intestinal obstruction. Other causes include ovarian cysts, torsion, symptomatic cholelithiasis, obstructed hernias, adrenal tumours and unexplained acute abdominal pain.

Diagnostic workup^{1,2}

1. Ultrasound is used as the initial investigation to identify the cause of the acute abdominal pain in pregnancy. It is radiological test of choice for most gynaecological causes of abdominal pain including adnexal masses, torsion of adnexa.
2. Accurate and quick diagnosis should be preferred over concern of radiation exposure, so if X-ray and CT scan is crucial for diagnosis as in suspected intestinal obstruction, volvulus or atypical appendicitis, it should be done. Cumulative radiation dose is a primary risk factor for adverse fetal effects but fetal age at exposure is also important. It should be limited to 5-10 rads during pregnancy.
3. MRI without intravenous gadolinium can be performed at any stage of pregnancy to confirm suspicious sonographic findings.
4. Administration of radionuclides eg Technium-99 for diagnostic studies can be given after consultation with a nuclear medicine expert.
5. Intraoperative and endoscopic cholangiography may be used selectively in pregnancy. Use of lower abdominal shield while performing cholangiography

during pregnancy decreases radiation exposure to the fetus.

6. Diagnostic laparoscopy is safe and effective to use selectively in patients with acute pain during pregnancy^{3,4}

Preoperative assessment and patient selection

Once the decision for surgical intervention is done, laparoscopy or laparotomy is determined largely on the experience of the surgeon. Traditional recommendation is to delay surgery till the patient is in her second trimester of pregnancy to decrease the chances of spontaneous abortions and preterm labour. Recent studies have shown that laparoscopic surgery is safe in any trimester of pregnancy without risk to mother or baby. Large scale studies are required to assess the long term effects on children.

Intraoperative

Laparoscopy decreases chances of fetal respiratory depression due to less use of postoperative analgesics, lower infection rates, shortened hospital stay and decrease risk of DVT. Decreased uterine manipulations are required because of magnification achieved at laparoscopy. Chances of spontaneous abortions & preterm delivery are lesser than with open procedures.

Patient position: Best position for a gravid uterus is the left lateral decubitus. It decreases pressure of the uterus on inferior vena cava improving venous return and cardiac output and hence decreasing fetal compromise.

Primary port placement: This is decided according to the height of fundus of uterus. Safest options are open Hasson technique, Palmer's point or Jha's points.⁵

Intraabdominal pressure: The diaphragm of a pregnant uterus is pushed up reducing residual lung volume and functional residual capacity. Intraabdominal pressures are set at of less than 15mmHg, preferably less than 12 mmHg. It is safe during laparoscopy and does not increase adverse effects.⁵ Some animal studies have confirmed deleterious effects of carbondioxide exchange and absorption from prolonged use of carbon dioxide resulting in fetal acidosis. Though fetal acidosis has not been demonstrated in humans, concerns of possible acidosis has lead to recommendation of monitoring maternal CO2 using EtCO2 and capnography.

Laparoscopic Cholecystectomy

In the past conservative management was preferred for symptomatic cholelithiasis. Recent data shows that symptomatic gall stones cause recurrent symptoms in 92% patients diagnosed in the first trimester, 64% patients diagnosed in their second trimester & 44% patients diagnosed in their third trimester.⁶ Currently, early surgical treatment is the mandate. Laparoscopic cholecystectomy is associated with good outcomes, decreased side effects, early recovery and less incidence of spontaneous abortions or preterm labour.

Laparoscopic Appendicectomy

Accurate and timely diagnosis of appendicitis in the pregnant uterus minimises risk of abortion and improves outcome. Many a times, clinical indicators are sufficient for diagnosis however, when in doubt, ultrasound, CT or MRI should be performed as indicated for an early diagnosis. Multiple retrospective studies have shown that laparoscopic appendicectomy is safe and effective with very low rates of pre-term delivery.

Adnexal Masses

Incidence of adnexal masses during pregnancy is 2%. Generally they are functional cysts especially if diagnosed during first trimester and out of these 85-90% resolve by second trimester. Historically cysts persisting beyond 16 weeks and more than 6 cm had been removed due to presumed risk of malignancy, torsion or rupture. Recent studies have shown that if ultrasound findings are not indicating malignancy, tumour markers are normal and patient is asymptomatic, patients can be observed closely. In case if surgery is required laparoscopy has shown equivalent results as laparotomy as far as maternal and fetal outcomes are concerned.^{7,8}

Adnexal torsion can occur in 10-15 % of adnexal masses. Laparoscopy is preferred treatment for adnexal torsion. If diagnosis is made early, de-torsion of adnexa is sufficient but in case of gangrene, adnexectomy is required to prevent peritonitis, spontaneous abortion, preterm delivery and death. Progesterone therapy is required, if pregnancy is less than 12 weeks. Laparotomy may be required depending on clinical condition of the patient.

Perioperative care

Fetal heart rate monitoring should be done pre & postoperatively in case of emergency surgery during pregnancy. Obstetrical consultation should be asked for

pre and/or postoperatively depending on severity of condition, gestational age and availability of consultant. Treatment should not be delayed in acute situations as delay can increase morbidity and mortality of the patient.

Tocolysis should not be given prophylactically to patients undergoing surgery but should be started if signs and symptoms of preterm labour are present.⁴

Conclusion

Benefits of laparoscopy over open abdominal approach is well established in non-pregnant patients. Recently as laparoscopy has become common during pregnancy, data is available in form of case series and retrospective reviews. Given the surgical expertise needed to confidently perform laparoscopic procedures in pregnancy, large randomized studies to find optimal surgical approach are unlikely. Based on available literature and recommendations, laparoscopy in pregnancy is safe and associated with low rate of complications in all trimesters of pregnancy.

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Case Snippets: Cesarean scar pregnancy

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Cesarean scar ectopic pregnancy (CSEP) has a low incidence of 1:2,226 of all pregnancies and 0.15 % in women with a previous cesarean. A high index of suspicion and prompt management can prevent mortality and morbidity.

Case 1

A 28-year-old third gravida presented with 7 weeks amenorrhea and painless vaginal bleeding. She had one cesarean delivery 7 months prior. On examination, she was in hemorrhagic shock. There was tenderness in the lower abdomen; however, no mass was palpable. On bimanual examination, internal os was open. Finger went on the right side of uterus in a cavity which had a soft fleshy feel and bled on touch. Toward the left, the uterus was felt in continuity with that cavity; however, finger did not enter into the upper uterine cavity. Total uterine size corresponded to 8 weeks of pregnancy. The bilateral fornices were free. Transvaginal ultrasound revealed normal endometrial cavity and cervix. A heteroechoic 5 x 9 x 6 cm mass arose from the low corporeal anterior surface with cystic areas and increased vascularity. No definite gestational sac was visible. The myometrium was deficient between the bladder and the mass. There was no free fluid in POD. Bilateral adnexa were clear. A provisional diagnosis of scar pregnancy with dehiscence/bicornuate uterus with abnormally invasive placenta was made. Exploratory laparotomy followed by hysterectomy was done in view of excessive hemorrhage. Per-operatively, the uterus was enlarged and atonic. The lower segment was ballooned and thinned out with a bunch of vessels on the anterior surface at the previous cesarean scar site, more toward the right side. The bladder was densely adherent to the previous scar site. Later, on cut section, a small gestational sac (*4 mm) was embedded at the previous scar site surrounded by blood clots (Fig. 1).



Figure 1: Posterior uterine wall cut open to show gestation sac at scar site and surrounding hemorrhage

Case 2

Mrs. S, 31 year old P₃L₃A₁ with previous 3 LSCS presented to the outpatient department with on and off vaginal bleeding and mild pain abdomen for 25 days. She had a surgical evacuation done for 6 weeks pregnancy after a failed attempt at medical termination 4 weeks back. The bleeding was mild to moderate and occasionally associated with passage of clots. On examination vitals were stable, abdominal examination revealed mild tenderness in lower abdomen and on pervaginal examination, uterus was bulky, anterior bulge of 3x4 cms was felt in anterior fornix and lateral fornices were free but tender. Ultrasound revealed a complex cystic lesion with echogenic contents with peripheral vascularity in anterior wall of uterus measuring 5x3 cms, no fetal pole was seen (Figure 2). Bilateral adenexa were normal and there was no free fluid in pouch of Douglas. A provisional diagnosis of a nonviable scar pregnancy/ localized perforation with hematoma was made. Beta hCG on admission was 1914U/ml. The patient was started on intravenous antibiotics and after routine investigations, single dose methotrexate 50 mg intramuscular was given. Subsequent day 4 and day 7 hCG levels were 784U/ml and 446U/ml. The patient was compliant and was discharged after 2 weeks. The weekly hCG values significantly declined and were 48IU/ml and 12.6 IU/ml in the second and third week. She is currently on follow up and is asymptomatic. Ultrasound after two weeks showed a decrease in the size of the mass to 1x2 cms.

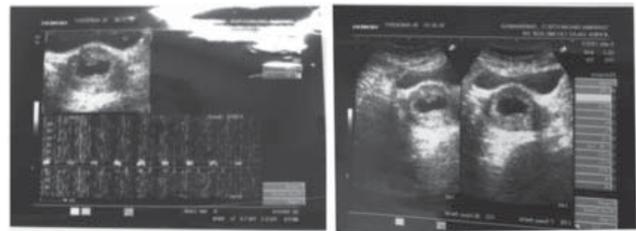


Figure 2: Cystic lesion in the anterior myometrium in the lower uterine segment with peripheral vascularity

Discussion

Apart from an abnormally invasive placenta, CSEP should be differentiated from spontaneous miscarriage in progress, cervical pregnancy or even trophoblastic tumor. Transvaginal ultrasonography has a high sensitivity of 84.6 % for diagnosing this condition. Ultrasound criteria put forward for the diagnosis of a

CSP include an empty uterine cavity and cervical canal without contact with the gestational sac, presence of the gestation sac in the anterior part of the uterine isthmus and deficient myometrium between bladder and sac. Color flow Doppler shows distinct peritrophoblastic perfusion surrounding the gestation sac.

Treatment includes conservative options like ultrasound-guided injection of methotrexate, KCl or vasopressin into the embryo or gestational sac, systemic methotrexate administration, uterine artery embolization, resection of the gestational mass under hysteroscopic guidance or definitive like hysterectomy.

Suggested Reading

1. Agarwal N, Shahid A, Odejinmi F (2013) Caesarean scar pregnancy (CSP): a rare case of complete scar dehiscence due to scar ectopic pregnancy and its management. Arch Gynecol Obstet 288(1):231-232
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Announcement AOGD Skill Workshop (2017-2018)

AOGD & The Department of Obstetrics and Gynecology, UCMS & GTB Hospital are organizing next skill workshop on Obstetric Skills. The details are as follows:

CTG: Interpretation and application in clinical practice Instrumental delivery: Forceps & Vacuum	28 th September, 2017 11:00am-05:00pm	Venue 7 th Floor Seminar Room Department of Obstetrics & Gynaecology MCH Block, GTB Hospital, Delhi Contacts Mr Ashish -9136708721, Dr A G Radhika -9868399726 Dr Richa Sharma -9868399747
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* Registration is free

AOGD MONTHLY CLINICAL MEETING Thursday, 24th August 2017; 4-5 PM Venue: Old LT (behind OPD), Safdarjung Hospital

Theme: Our journey in critical care obstetrics: arduous but satisfying

Near miss cases

1. Peripartum cardiomyopathy - timely diagnosis crucial for good outcome
2. Acute kidney injury- prevention is better than cure
3. Hypertensive disorders in pregnancy - commonest cause of obstetric critical care admissions

ALL ARE CORDIALLY INVITED FOR THIS ACADEMIC SESSION

Contact Persons: Dr Achla Batra- 9811105560; Dr Jyotsna Suri: 9810858358

Events Held in July 2017

- Indian Menopause Society- Delhi Chapter under the guidance of Dr Geeta Mehndiratta held the programme “Menopause Management - An Executive Guide” on 6th July 2017 organized by Institute of Obstetrics and Gynaecology, Sir Ganga Ram Hospital.



Indian Menopause Society- Delhi Chapter held one day programme at Sir Ganga Ram Hospital

- CME on “Urogynaecology- An evolving Concept” on 8th July 2017 at Pind Balluchi Restaurant by Urogynaecology Subcommittee of AOGD chaired by Dr. Amita Jain, arranged by Fortis Escorts Kidney and Urology Institute.



CME on Urogynaecology- An evolving Concept by urogynaecology subcommittee

- CME on “Introduction of Newer Contraceptives” in the National Family Planning Programme at UCMS, Library Block, Conference Room on 11th July 2017 organized by the Deptt. of Obs and Gynae & Family Welfare, GTB Hospital.



CME on ‘Introduction on Newer Contraceptives in the National Family Planning Programme at UCMS & GTBH.

- Department of Obstetrics and Gynecology at UCMS and GTB Hospital organized a quiz on contraception for post graduates on 17th July 2017 on the occasion of the Population Week.

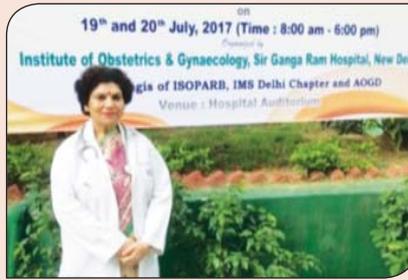


Department of Obstetrics and Gynecology at UCMS and GTB Hospital organized a quiz on contraception on occasion of World Population day

- Gurukul classes were held on 19th & 20th July 2017 at Sir Ganga Ram Hospital for Postgraduates and Residents under the leadership of Dr. Mala Shrivastava.



Gurukul classes for the postgraduates and residents at Sir Gangaram Hospital



- DGFS along with Oncology sub-committee of AOGD organized a CME at hotel Shervani on 20th July, by Dr Manju Khemani along with Dr Rupinder Sekhon.



DGFS along with oncology sub-committee of AOGD CME on 20th July

- Skill Workshop of AOGD on “Basics of Endoscopy in Gynecology” on 21st July 2017 at 7th Floor MCH Block, GTB Hospital by Dr. Radhika and Skill Workshop Organizing Committee GTBH



Skill Workshop on ‘Basics of Endoscopy in Gynecology’ at GTB Hospital

- Department of Obs & Gynae, ESI - PGIMR, Basaidarapur organized a one day Workshop on “ABC of Critical Care Obstetrics” on 22nd July 2017 under Aegis Of Multidisciplinary Committee AOGD at Silver Jubilee Auditorium by Dr. Sangeeta Gupta, Dr. Jyotsana Suri, Dr. Taru Gupta.



Workshop on ABC of Critical Care Obstetrics by ESI Basaidarapur Hospital

- “Challenges in Management of Preterm Labour” on 23rd July 2017 at R & R Army Hospital by Dr. B.K Goel and team.



CME on the 'Challenges in Management of Preterm Labour' by R & R Army Hospital

- Dr. Alka Kriplani conducted AOGD monthly clinical meeting at AIIMS, conference Hall on 28th July, where interesting cases were presented.



AOGD monthly clinical meeting at AIIMS

Corrigendum: June Events

- FOGsd under Chairperson Dr Anita Sabharwal organized a lunch CME with Sunrise Hospital in association with IMA SDB under the aegis of AOGD on laparoscopic techniques on 10th June at IHC.



FOGsd organized a lunch CME with Sunrise Hospital in association with IMA SDB

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39th Annual Conference of AOGD 2017

Scientific Programme

Day 1: Saturday, 18th November 2017

07:30am onwards	Registration	
08:00am - 09:00am	Free Communications (Hall C)	
Session 1	Hall A	Hall B
09:00am - 10:00am	Understanding Preeclampsia	Resurrection of the Contraceptive Basket
	Predictors of Preeclampsia : From bench to bedside	Antara and Chaya: Old wine in a new bottle
	Late Onset Preeclampsia: Is the pathogenesis different?	Emergency Contraception: Expanding indications
	Management of Acute Onset Severe Pre-eclampsia	Progesterone Vaginal Ring and Sino Implant II
	Drug Therapy for Control of Hypertension in Pregnancy: An update	Menstrual Moksha
	Discussion	Discussion
10:00am - 10:30am	Tea & Exhibition	
Session 2	Main Hall	
10:30am - 11:00am	AOGD President's Oration: Unfurling the Facts of Assisted Reproduction: Dr Sudha Prasad	
11:00am - 11:20am	Key Note Address: ABC of Breast Health: Dr P Raghuram, President Association of Breast Surgeons of India	
Session 3	Main Hall	
11:20am - 12:00pm	Panel Discussion: Addressing and Rationalising Rising Cesarean Section Rates	
12:00am - 12:20pm	Expert Opinion: Proritizing Surgical Safety and Minimising Surgical Infections	
12:20am - 01:00pm	Inauguration	
1.00 - 2:00 PM	Lunch & Poster Viewing	
Session 4	Hall A	Hall B
02:00pm - 02:40pm	Panel Discussion: Minimally Invasive Surgery in Gynecologic Malignancy: Safe and Best Practice	
Session 5	Hall A	Hall B
02:40pm - 03:40pm	High Risk Obstetrics: Time to up the antenna'	Infertility: Technical Update
	Pregnancy after Bariatric Surgery	Biomarkers for Ovarian Reserve: What is best?
	Jaundice in Pregnancy: Minimising morbidity & mortality	Pre-implantation Genetic Screening: Should the practice continue?
	Unexplained Recurrent Miscarriage	Ovarian Aging: Can it be stopped?
	An Approach to a Case with Oligoamnios	Luteal Support: What, when and for how long?
	Establishing a High Dependency Unit/Obstetric ICU	Maximising Successful Implantation: Advances in endometrial receptivity
	Discussion	Discussion
03:40pm - 04:00pm	Sponsored symposium (Educational grant)	Sponsored Symposium (Educational grant)
Session 6	Hall A	Hall B
04:00pm - 05:00pm	Video Session: Obstetrics	Video Session: Gynecology
	Retrograde Hysterectomy for Placenta Praevia/ accreta	Endoscopic Sentinel Node Dissection
	Laser ablation in TTTS	Le Fort's procedure: Simplicity personified!
	12 week scan: NT, Nasal Bone, Anomalies	Mini Sling for SUI
	Innovation in PPH Management: Bakri & Chhattisgarh Balloon	Clitoroplasty
	Laparoscopic Encerclage	Specimen Retrieval Techniques in Laparoscopy or Lap Vault Suspension
	Step Wise Devascularisation of Uterus & Internal Iliac Artery Ligation made Easy	Robotic Management of Deep Endometriosis
05:00pm - 05.30pm	Tea & Exhibition	

39th Annual Conference of AOGD 2017

Scientific Programme

Day 2: Sunday, 19th November 2017

07:30am onwards	Registration	
08:00am - 09:00am	Free Communications	
Session 7	Hall A	Hall B
09:00am - 10:00am	Fetal Medicine: Expert's speak	Rational Use of Hormones: Which, when, how much and how long?
	Rh Isoimmunisation/Fetal Anemia: When to refer, what to do?	Early Pregnancy Bleeding
	Options beyond Laser in Complicated Twin Pregnancy	Ovarian Insufficiency
	Growth problems, Monitoring and Timing Delivery in Multiples	Adolescent Endometriosis
	Ultrasound in Delivery decisions	Menopausal HT
	Discussion	Discussion
10:00am - 10:30am	Tea & Exhibition	
Session 8	Main Hall	
10:30am - 11:00am	Brigadier Khanna Oration: Management of Endometrial Cancer: MSKCC Practice Dr Mario Leitao, Director, Robotic surgery,	
11:00am - 11:20am	Key Note Address: Abnormal Uterine Bleeding: Evidence based practice: Alka Kriplani	
Session 9	Hall A	Hall B
11:20am - 11:40am	Contemporary Practice	Smart Science
	Genetic Tests & Prenatal Diagnosis: Changing Practice: Case studies	Understanding Genetic Tests in Breast & Gyn Cancers: Case studies
11:40am - 11:50am	Atosiban/Magnesium Sulfate in Preterm Labor	The FIGO Smart Phone Application for Management of Gynecological Cancers
11:50am - 12:00pm	Fetomaternal Risks and Monitoring in GDM	Dilemmas in Management of Ectopic Pregnancy
12:00pm - 01:30pm	Competition Papers	
01:30pm - 02:30pm	Lunch & Poster Viewing	
Session 10	Hall A	Hall B
02:30pm - 03:30pm	Best of 2017: Evidence Based Practice in Pregnancy	Best of 2017: Evidence Based Practice in Gynecology
	Exercise Training and Weight Gain in Obese Pregnant Women	Uterine Artery Embolization vs. Hysterectomy in the Treatment of Symptomatic Uterine Fibroids: EMMY trial
	Thyroid Disorders in Pregnancy: 2017 Guidelines	Treatment Strategies for WHO Type II Anovulation: Systematic review and metaanalysis
	Preterm birth prevention in Singleton & Twin Pregnancy	Risk Reducing Salpingectomy/Salpingo-Oophorectomy: Current Guidelines
	Elective Delivery versus Expectant Management for Pre-eclampsia: Meta analysis of RCT's	Morcellation in Fibroids: Risks and Current Practice
	Antiretroviral Therapy in Pregnancy: An Update	Selective Progesterone Receptor Modulator: Latest recommendations
Session 11	Hall A	Hall B
03:30pm - 04:30pm	Razor-sharp Debates	Confronting Controversies
	Cesarean on Demand is the Right of a Pregnant Mother	Management of Adenomyosis in Women under 35
	Soil and Seed are Ripe for Uterine Transplantation in India	IVF vs Reversal of Sterilisation after Tubal Ligation
	All Fibroids seen during Cesarean Section must be Removed	Hydrosalpinx: Tubal Surgery or in Vitro Fertilisation: An everlasting Dilemma
	Egg Freezing before 30: Sure shot way of achieving future pregnancy	Vaginal versus Laparoscopic Hysterectomy: The better route!
04:30pm - 05:00pm	Valedictory	
05:00pm - 05:30pm	Tea & Exhibition	



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"Mind, Body & Soul"

Benefits of Antenatal Yoga

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Yoga is a Sanskrit word introduced in 3000 BC by Patanjali, a Sanskrit scholar and an Indian physician. It has been derived from a Sanskrit word "yuj" which means *to yoke or to join together*. Yoga is widely recognized as a form of mind-body medicine that creates a balance among emotional, mental, physical and spiritual dimensions. It is a comprehensive system that uses physical postures (**asana**), breathing exercises (**pranayama**), concentration and meditation (**dharana and dhyana**), and contemplative practice¹. The regular practice of yoga promotes strength, endurance, and flexibility and cultivates a sense of calmness and well-being

Different components of Yoga work in different ways. Yoga asanas work at physical body level and for pregnant women it improves physical strength, enhances flexibility and endurance. It is also thought to increase hormones from the endocrine glands, as a result of pressure applied to the glands during set postures. Second component 'Om Chanting' has an effect on parasympathetic system and reduces stress. Third component 'Pranayama', modifies various inflatory and deflatory lung reflexes and interact with central neural element to bring new homeostasis in the body, thereby increasing oxygen supply to the fetus and facilitates easier delivery. The fourth component of yoga practice 'Yoga Nidra' is a specialized practice that generates deep relaxation. The fifth component 'Dhyana' or Meditation in conjunction with asanas and breathing awareness, reduces excessive thinking. Meditation seems to influence through modifying activity of ascending reticular activating system and thereby also interact with autonomic centers in the brainstem thus affecting cardiorespiratory and metabolic parameters.

Yoga is much more than asana, it helps a person to gain "understanding and complete mastery over the mind.

Table 1: The eight limbs of Ashtanga Yoga

1.	Yama	Ethical relationships, such as nonviolence
2.	Niyama	Internal awareness and cleanliness
3.	Asana	Physical postures
4.	Pranayama	Breath
5.	Prathyahara	Withdrawal of senses
6.	Dharana	Concentration
7.	Dhyana	Meditation
8.	Samadhi	Transcending consciousness

Table 2: Positive aspects of the practice of yoga

Physically	Assists in: <ul style="list-style-type: none"> • Weight loss • Increased muscle strength, including lung musculature
Physiologically	Improves: <ul style="list-style-type: none"> • Cardiovascular system • Immune system • Sleep quality and length • Blood pressure • Breathing control Increases: <ul style="list-style-type: none"> • Melatonin levels • Natural killer cells, which fight the growth of cancer cells
Psychologically	Decreases <ul style="list-style-type: none"> • Depression • Anxiety • Stress
Emotionally	Aids in : <ul style="list-style-type: none"> • Control over negative thoughts • Increased positive affect • Management of difficult situations • Healthy expression of negative emotions
Spiritually	Assists a practitioner in: <ul style="list-style-type: none"> • Becoming one with God • "De-embedding" one's self from thoughts, feelings, and actions • Identifying one's self as independent of thoughts, feelings, and actions Puts practitioners in a state: <ul style="list-style-type: none"> • Similar to sleep • Unaware of space, time, or bodysense Brings a practitioner's mind to peace

Why yoga during pregnancy?

Emotional stress and anxiety during the prenatal period have been associated with premature births, low birth weight, and adverse fetal neurodevelopment and child outcomes. Prenatal maternal stress is also associated with increased pains during delivery and unplanned cesarean delivery. In addition to these negative birth outcomes, there are several other common complications of pregnancy, such as pregnancy-induced hypertension, preeclampsia, eclampsia, gestational diabetes mellitus, premature rupture of amniotic fluid, small fetus for gestational

age, large fetus for gestational age, intrauterine growth retardation, and low Apgar score at birth. These lead to a troubled experience during pregnancy and adverse birth outcomes. During exposure to a stressor, the whole system of stress regulation, consisting of the hypothalamus–pituitary–adrenal cortex system (HPA axis) and the sympathetic nervous system–adrenal medulla system, is activated. Various hormones, including corticotropin-releasing hormone (CRH), adrenocorticotropin - releasing hormone (ACTH), cortisol, and noradrenaline, are released in large quantities into the systemic circulation. Elevated levels of maternal cortisol, a stress hormone, in the second and third trimester of pregnancy are associated with an increased response of infant cortisol to a heel-prick procedure after birth. These results point to the importance of evaluating the effects of a prenatal yoga intervention on the relationships between (1) maternal hypothalamic-pituitary-adrenal axis and sympathomedullary pathway and (2) changes in stress levels of the fetus by measuring variety of stress related maternal (e.g., cortisol, heart rate, and self-reported measures) and fetal (e.g., activity level and heart rate) variables over the course of pregnancy and in the early postpartum period.

Pregnant women respond differently to identical stressful stimuli, depending on genetic factors, personality traits, previous experience, and social support. In addition, normal pregnancy is associated with physical alterations, hormonal changes (often associated with rapid changes in mood), anxiety regarding labor and fetal outcome, all of which potentially worsen the stress response. To make pregnancy event free and improve birth outcomes, yoga has been suggested as an alternative and complementary system of medicine to be practiced during both prenatal and postnatal periods. The cardiovascular effects of yoga have been particularly well researched. Transcendental meditation has been shown to decrease oxygen consumption and resting heart rate and to increase cutaneous vascular resistance along with a reduction in the heart rate, suggesting increased mental alertness in a physiologically relaxed state. There are various RCT's which have studied the role of yoga in reducing adverse pregnancy outcomes.

Narendran et al compared the effects of a ~20-week-long integrated yoga. Main outcome measures included birth weight and gestational age at delivery. Secondary outcomes assessed were pregnancy-induced hypertension (PIH), intrauterine growth retardation (IUGR), pregnancy-induced hypertension (PIH) with IUGR, duration of labour, mode of delivery, preterm delivery, and intrauterine death (IUD). The number of infants weighing over 2500g was significantly greater for women who had participated in the yoga program; however, the mean birth weight of infants

did not statistically differ between the two groups. In addition, the number of women who experienced preterm labour (i.e., before 37 weeks) was significantly lower and complications such as IUGR and PIH with associated IUGR occurred significantly less often in the yoga group.

A study evaluated the same outcomes in women who were specifically selected as having abnormal Doppler readings of umbilical and uterine arteries. In this subsample of women, the authors reported that infants who were born to mothers in the yoga group weighed significantly more and that a greater number of them weighed at least 2500g when compared to the control group. By contrast, there were only trends in favour of the yoga group for pregnancy related complications and number of preterm deliveries.

One of the most common complaints in pregnancy is progressive low back pain, especially in the lumbo sacral area. Exercises focusing on stretching and strengthening of the back and abdominal muscles are frequently recommended to relieve pregnancy-related pain. Martins et al concluded that a 1 hour a week Hatha yoga practice for 10 weeks can significantly lower lumbo pelvic pain during pregnancy. A more frequent practice of yoga 3 times per week for 30 minutes each over a 12- to 14-week period was also shown to have similar findings in pain reduction during gestation. Chuntharapat et al from Thailand was the only group to study pain during labor. Seventy-four women were randomized into those performing yoga for 10 to 12 weeks versus those receiving standard prenatal care. Women who were in the yoga intervention group were found to have significantly more comfort during labor and was also associated with a shorter duration of the first stage of labor.

Rakshani et al showed significantly fewer occurrences of pregnancy induced hypertension (PIH), preeclampsia, gestational diabetes (GDM), and intrauterine growth restriction (IUGR) in the yoga group ($P = 0.018, 0.042, 0.049,$ and $0.05,$ resp.) Significantly fewer small-for-gestational-age (SGA) babies were born in the study group ($P = 0.033$). Also, APGAR scores within 1 and 5 minutes of delivery were significantly higher in the yoga group ($P = 0.006$)

Yoga therapy appears to be a promising, non-invasive and non pharmacological intervention for reducing stress in pregnant women. It is a holistic system of mind body relaxation which includes not only physical postures or asanas but also breathing exercises, deep relaxation, meditation and prayers. Various studies have found a significantly lower incidence of adverse pregnancy outcomes such as hypertension, preterm delivery, fetal growth restriction. Incorporating yoga therapy in antenatal care appears to be a feasible, safe and cost effective strategy.



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29 th September 2017	Hindu Rao Hospital
27 th October 2017	ESI Hospital, Basaidarapur
24 th November 2017	MAMC & LN Hospital
29 th December 2017	Sir Ganga Ram Hospital
19 th January 2018	Dr RML Hospital
23 rd February 2018	Lady Hardinge Medical College
23 rd March 2018	UCMS & GTB Hospital
27 th April 2018	Apollo Hospital, Sarita Vihar

Cervical Cerclage: Indications and Techniques

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“To be incompetent is never static neither permanent even in the virtual world. There are always methods to make it competent”

Introduction

Preterm delivery (PTD) is the leading cause of neonatal morbidity & mortality. The management of preterm birth always remain a major challenge in modern obstetrics. Though cervical cerclage remains a common prophylactic intervention that has been used in the management of second trimester loss (MTL) for ages, yet it remains one of the most controversial surgical interventions in obstetrics. There are various factors that are to be considered and evaluated before cervical cerclage. Also there are disagreements in respect to the optimal procedure or technique, the timing of insertion etc.

Factors that increase the likelihood of increased risk of incompetent cervix are cervical trauma, forced dilatation and curettage, previous cone biopsy or LEEP procedure on cervix, uterine anomalies, DES exposure and congenitally short cervix.

Indications for Cerclage

Prophylactic Cerclage/ History Indicated Cerclage¹

This is done on retrospective basis with presence of risk factors related to a woman's obstetric or gynaecological history. It is an elective procedure usually done at 13-16 weeks gestation as a prophylactic measure in asymptomatic women preferably after assessment of viability and congenital anomaly risk. The largest randomized controlled trial comparing history-indicated cerclage with expectant management was conducted by the Medical Research Council and RCOG. The evidence indicates that a history-indicated cerclage is of benefit to women with three or more previous preterm births wherein their risk of preterm birth reduced by more than half. This may justify prophylactic cerclage in this subgroup of high-risk women.

Ultrasound Indicated Cerclage

In cases of short cervical length (< 25 mm) by transvaginal ultrasound and history of second trimester loss, cerclage can be done between 16-23 weeks. A large randomized study concluded that in absence of a previous MTL/PTD ultrasound-indicated cerclage is not beneficial in women who have an incidental finding of a short cervix of < 15mm. Vaginal progesterone may be

used to treat these women. Conversely, a meta analysis of 4 randomized controlled trials showed that women with a previous MTL/PTD and a cervical length of less than 25 mm may benefit after insertion of cerclage. This meta analysis also didn't find any benefit of cerclage in a woman with an incidental finding of a short cervix by ultrasound examination but no prior risk factors for preterm birth.² Both ACOG³ and RCOG⁴ recommend that women with a history of one or more spontaneous mid-trimester losses or preterm births who are undergoing transvaginal sonographic surveillance of cervical length should be offered an ultrasound indicated cerclage if the cervix is 25 mm or less and before 24 weeks of gestation

Physical Examination Indicated Cerclage

In cases with dilated cervix on manual or speculum examination, emergent cerclage can be done between 16-23 weeks. Cerclage maybe effective upto 4 cm of cervical dilatation.⁵ The current data suggests that emergency cerclage is associated with a longer latency and better pregnancy outcomes when compared with bed rest.

Other Indications

The existing published studies are either inadequately controlled or include insufficient numbers to be able to make evidence-based recommendations on the role of cerclage in other high-risk groups such as women with Mullerian anomalies, previous cervical surgery (cone biopsy, large loop excision of the transformation zone) and multiple pregnancy.

Currently, there is insufficient evidence to recommend routine amniocentesis or genital tract screening prior to rescue or ultrasound-indicated cerclage.

Contraindications

Include uterine contractions, intrauterine fetal demise, cervix > 4cm dilated, ruptured membranes, fetal anomaly incompatible with life, chorioamnionitis and vaginal bleeding.

Preoperative Care⁶

The following preoperative measures should be taken:

- Ultrasound to confirm fetal viability, gestational age and rule out any identifiable anomaly.
- Clinical examination to rule out active bleeding, preterm labour and PPROM.
- Pre anaesthetic checkup.
- Written & informed consent after explaining the advantages and associated risks.

- There is insufficient evidence to assess the risks and benefits of progesterone use at the time of cerclage. Routine use perioperatively is not recommended but women already on 17α hydroxyprogesterone (Inj Proluton) because of a prior PTB, who also have indication(s) for cerclage, should continue the 17P.
- There is insufficient evidence to routinely recommend tocolysis at the time of cerclage.
- Routine use of antibiotics for history indicated cerclage is not recommended. However, some studies have demonstrated benefits of antibiotic usage for either ultrasound- or physical examination–indicated cerclage.
- Routine catheterization is not recommended and the patient can void before surgery.

Surgery

Surgery is carried out under regional anaesthesia for vaginal route and general anaesthesia is given for abdominal and laparoscopic approach.

Transvaginal Approach

Mc Donald's stitch

It is the most commonly applied cerclage procedure, in which purse string stitch with non absorbable suture is placed circumferentially around the cervix in 4-6 bites, just distal to the vesicocervical reflection (at the junction of the ectocervix and the anterior ruggated vagina) without bladder mobilisation and posteriorly, just distal to the vaginal-rectal reflection. About 1 cm of spacing can be left between the exit of the last bite and the entry of the new bite of suture into the cervix. Each pass should be deep enough to capture sufficient cervical stroma to avoid pulling through and later displacement but not so deep as to enter the endocervical canal (and risk rupture of the membranes, especially in women with digital cervical changes present). The uterine vessels should be avoided laterally. The suture should be placed as high as feasible, at least 2 cm or more above the external os. The knot is tied anteriorly (Fig 1). It's the easiest among all with the least risk. It is usually placed at 12-16 weeks and removed at 37weeks gestation. Besides easy insertion another advantage is that it is readily accessible for removal and doesn't need anaesthesia.^{4,6}

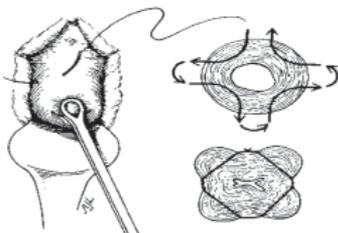


Fig 1: McDonald's Cervical Cerclage

Shirodkar cerclage: First used by Dr. Shirodkar in 1963. The main objective is to mobilize the bladder and place the suture above the level of the cardinal ligaments nearer to the level of internal os.(Fig 2). Knot is tied posteriorly to prevent bladder erosion. In

classical Shirodkar's technique, Fascia Lata strip was used for cerclage and was passed submucosally around the cervix, from anterior incision to posterior using aneurysm needle and now a mersilene tape on needle is commonly used. The dissection and suture placement and removal takes a longer time than the McDonald technique and removal is done in operation theatre as the knot can get embedded. The two techniques have never been compared in an RCT. Data from various cohort studies have shown equal efficacy with both techniques. Hence, US Preventive Services Task Force recommends that McDonald technique is preferred over Shirodkar because of its easier placement and removal, and its proven comparative effectiveness (recommendation B; level: moderate).

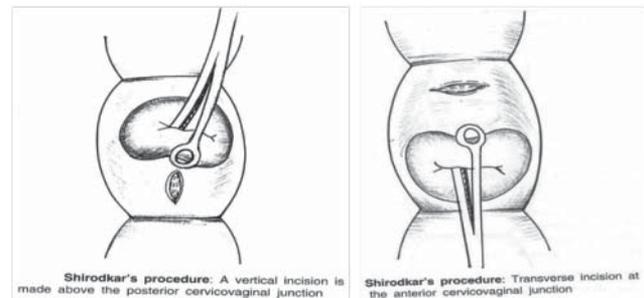


Fig 2: Incisions for Shirodkar's Cervical Cerclage

Hefner/ Wurm's cerclage

This is usually applied during late pregnancy when there is a need for emergent cerclage like funnelling of membranes is present, cervical length is very short and the cervix appears dilated. A U/W or mattress suture is given to the minimal amount of cervix that is left.

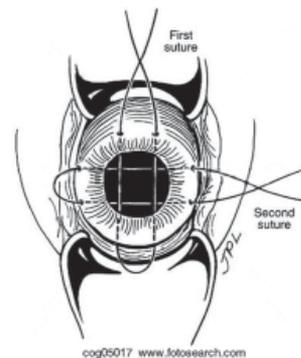


Fig 3: Würm's Stitch

LASH Cerclage

This is a permanent stitch performed before pregnancy in a non-pregnant state. Usually done in cases where there is trauma to cervix or anatomic abnormality. A transverse vaginal incision is made for approximately 2-3 cms at the junction of the vaginal mucosa and portio of the cervix. This may require extending the mucosal incision laterally in a block "Ü". Defect is exposed and unhealthy cervical tissue is excised. Opening is closed in two layers with interrupted 2-0 Dexon sutures. The sutures are tied inverting the defect into the cervical

canal. This is a permanent suture and female needs to deliver by caesarean section.

Cervical occlusion

Total cervical occlusion involves closure at the external os in addition to primary cerclage, with a hypothesised action of preserving the mucus plug to maintain an immunological barrier against vaginal pathogens. Though observational studies have shown total cervical occlusion to be effective for preventing preterm birth due to cervical insufficiency, The CERVO trial which was a large, multicenteric, randomized prospective trial, demonstrated no added benefit of cervical occlusion to cerclage.⁷

Suture material

The commonly used sutures are Mersilene 5 mm tape, large caliber nonabsorbable monofilament (eg, Prolene, Ethicon, Inc) and silk. In the absence of data suggesting the superiority of one suture type, the choice of suture should be investigated further and currently left to the operators' preference.⁶

Abdominal Cerclage

In 1965, Benson and Durfee described the placement of an abdominal cerclage at the level of cervical isthmus, positioned in the avascular space above the level of cardinal and uterosacral ligaments following laparotomy. This transabdominal approach is usually undertaken following a failed vaginal cerclage or extensive cervical surgery or in presence of congenital anomalies e.g. DES exposure. It is a permanent method and recommended to remove the sutures once the women have completed her family. It can be removed by posterior colpotomy but sometimes even a laparotomy required. There are no studies comparing the effectiveness of transabdominal cerclage with expectant management or with transvaginal cerclage; and this is certainly an area which would benefit from further research.

Laparoscopic Cerclage

Laparoscopic/ robotic insertion of abdominal cerclage has been described placing a 5-mm Mersilene band at the level of the cervical isthmus, above the cardinal and uterosacral ligaments, after dissecting the bladder away from the uterus. The most dreaded complication is hemorrhage from the paracervical veins and recently a needleless technique by using mersilene tape after skeletonization of the uterine vessels and formation of window in the broad ligament has been described by both laparoscopic and robotic routes to minimize complications. There are no published data at present to suggest whether laparoscopic approach is superior, in terms of efficacy, to laparotomy for an abdominal cerclage. Available evidence demonstrates that TAC should be limited preferably to non-pregnant patients. As with the open transabdominal approach, delivery is by caesarean section.

Postoperative care

It includes use of prophylactic antibiotics where indicated. Woman is kept under observation to monitor for premature uterine contractions and discharged once ambulating. Acetaminophen alone usually provides adequate analgesia for most women. There is insufficient evidence to recommend any type of activity restriction after cerclage placement

Regular ANC visits are advised and woman is asked to report in case of warning signs such as contractions/ cramping, intermittent lower abdominal pain/ back pain, vaginal bleeding, fever >100F or 37.8 C or chills, foul smelling vaginal discharge or leaking per vaginum.

Complications include infections (1-7%), cervical laceration, dystocia, PPROM (1-9%), preterm labour, cervical stenosis, bladder injury and haemorrhage. Cervical cerclage is associated with a low risk for complications, but the transabdominal technique is associated with a higher risk for hemorrhage compared with the transvaginal approach.

Conclusion

In summary, clinicians must rely on evidence-based practice wherever possible when faced with decisions involving cerclage. All the controversies like time & type of surgery, removal of suture, suture material etc. can be resolved to some extent by the discretion of surgeon. We must continue to further our knowledge on this complex subject through robust research trials.

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Systematic Stepwise Pelvic Devascularization for Post Partum Hemorrhage

Himsweta Srivastava¹, Prabha Verma²

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“While managing PPH, time lapsed in a minute -one has not lost one minute, but 60 seconds.” - Ian Donald

Postpartum hemorrhage (PPH) is an obstetric emergency with many potentially effective interventions for management. PPH may result from failure of the uterus to contract adequately (tone), vaginal or cervical lacerations (genital tract trauma), uterine rupture, retained placental fragments (tissue) or maternal bleeding disorders (thrombin). Once severe atonic PPH has been recognized, if bimanual uterine compression and pharmacological measures fail to control the hemorrhage, surgical methods are recommended without delay. Uterus sparing surgical interventions have long been practiced as an alternative to hysterectomy in the management of such cases. The easiest and less-morbid procedures should be preferred.

After resorting to balloon tamponade and haemostatic brace suturing, a stepwise uterine devascularization is done which involves bilateral uterine artery ligation followed by ligation of utero-ovarian anastomosis. If bleeding is not controlled by this, finally bilateral hypogastric artery ligation is done. Obstetric haemorrhage poses real threat to the managing obstetrician. Since Stepwise devascularization of uterus is a life saving procedure every obstetrician must learn this procedure.

Procedure: Uterine Devascularization

Uterus receives 90% of its blood supply from the uterine arteries and hence ligation of these arteries may help reduce ongoing blood loss. **Stepwise Uterine Devascularization** technique was first described in 1994. It entails 5 successive steps, so if bleeding is not controlled by one step the next step is taken, till bleeding stops. Since bilateral uterine artery ligation is technically easier and safer than internal iliac artery ligation, it is usually performed as the initial procedure when attempting systematic devascularization. It is first line treatment to control postpartum hemorrhage at the time of cesarean delivery. This technique is most useful and successful when hemorrhage is of moderate degree and originates from lower uterine segment, such as bleeding from low placental implantation site.

Step 1: Unilateral Uterine Artery Ligation at the Upper part of Lower uterine segment:

- Bladder is advanced before placement of sutures to avoid bladder injury.
- Uterine artery and vein are ligated at the lower uterine segment just at the level of the transverse uterine incision. For this the index finger is introduced behind broad ligament to identify avascular space.
- Absorbable suture no.0 chromic or polyglycolic acid suture is placed through the lateral aspect of the lower uterine segment, 2 to 3cm medial to the uterine vessels through the myometrium, and then back through the avascular space in the broad ligament just lateral to uterine vessels. (Fig 1)
- Suture is tied to compress the vessels.

Step 2: Bilateral uterine vessels ligation

Step 3: Ligation of descending branch of uterine artery (bilateral)

- Bladder needs to be adequately mobilized
- Double ligation of bilateral uterine artery is done by applying second ligature about 2cm lower from the first. This is to ligate the descending branch of uterine artery.

Step 4: Ligation of unilateral ovarian vessels (Utero-ovarian anastomosis)

- Ligature is placed just below the attachment of ovarian ligament to uterus (Fig 2) The procedure involves ligation of utero-ovarian vessel anastomosis to reduce uterine blood supply.

Step 5: Ligation of bilateral ovarian vessels (Utero-ovarian anastomosis)

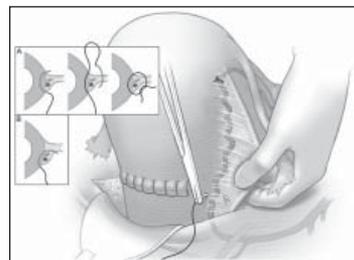


Figure 1: Uterine Artery ligation. Technique of suture placement.

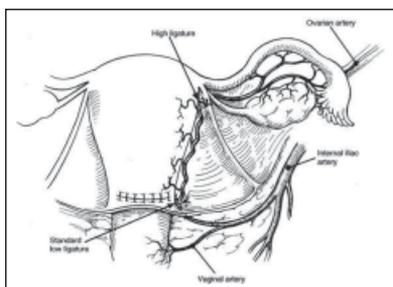


Figure 2: Ligation of Utero-ovarian anastomosis (High ligature)

Advantages

Stepwise Uterine Devascularization has following advantages over Internal Iliac Artery ligation

- Easier Dissection
- Less risk of Complications
- More distal occlusion of blood supply results in less potential for rebleeding due to collaterals

In cases if bleeding is not controlled with uterine devascularization steps, Uni/ Bilateral Internal Artery Ligation needs to be performed.

Procedure: Hypogastric Artery (Internal iliac artery) Ligation

The major blood supply to uterus and pelvis comes from the internal iliac artery, often called the hypogastric artery. Bilateral ligation of anterior branch of this artery can effectively control significant bleeding and prevent need for hysterectomy. The physiology of internal iliac artery ligation has been described by Burchell. It seems that ligation of the artery controls the bleeding by converting an arterial system into venous system, which decreases the pulse pressure by as much as 85%. This technique may also prove useful for controlling bleeding in patients with large hematomas of the broad ligament or for a lacerated artery that has retracted into the broad ligament.

Steps -

The technique of hypogastric artery ligation is shown in Fig 3 & Fig 4.

- The peritoneum overlying the common iliac artery is opened. The ureter is identified attached to the peritoneum and retracted medially
- The internal iliac artery is identified as it arises and runs from common iliac artery posteriorly into the pelvis just beneath the infundibulopelvic ligament
- The sheath covering the internal iliac (hypogastric artery) is opened longitudinally.
- The ligation is performed about 2cm distal to the bifurcation of common iliac artery to avoid disrupting the posterior division of the hypogastric artery, which can lead to ischemia and necrosis of the skin

and subcutaneous tissue of the gluteus. This step also ensures that the anterior division of hypogastric artery is ligated.

- A right angle clamp is gently passed under the artery from the lateral to the medial direction with blunt dissection to avoid injury to the internal iliac vein.
- Two non-absorbable sutures of 2-0 silk should be used for ligation.
- Hypogastric artery ligation should be performed bilaterally to adequately decrease pressure to the uterus.
- Bilateral femoral pulses should be palpated to ensure internal iliac artery ligation only.

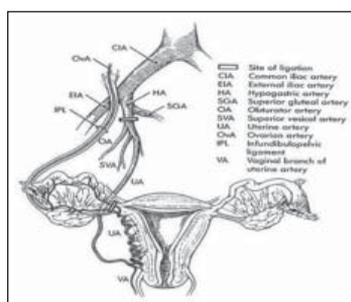


Fig.3. Ligation of Right Hypogastric artery.

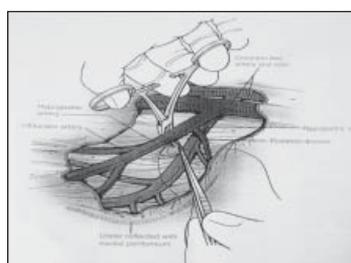


Fig.4. Suture placement in hypogastric artery ligation.

Complications of Internal iliac artery ligation

Internal iliac artery ligation is not easy to perform technically and requires special skill and experience especially in the presence of a surgical emergency. Risk of injury to other vessels is high with inexperienced surgeon.

- Internal iliac vein laceration or injury.
- External iliac vein injury
- Ureteral injury
- Ligation of wrong structure like ureter, external/common iliac artery.
- External iliac artery spasm and thrombosis.

Postligation reproductive function- Because of good collateral circulation reproductive function usually is not affected.

To conclude, Stepwise uterine devascularization is simple, easy to learn, effective technique with very low risk of complications to manage PPH while conserving uterus. Every obstetrician should be proficient in performing all these steps whenever required. For

refractory cases, internal iliac artery ligation is an effective alternative to hysterectomy.

Suggested Reading

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First Announcement

24th Annual Conference of NARCHI Delhi 2017

Dates: 28th -29th October (Friday to Sunday)

Pre-Conference Workshops

Date: 27th October 2017

Venue: S J Auditorium, LHMC

organized by

**Department of Obstetrics & Gynaecology
Lady Hardinge Medical College & Smt. S K Hospital**

Conference Theme

Maternal & Child Health: Intensifying Core Competencies

Paper Topics

- Contraception
- High Risk Pregnancy
- Community Obstetrics
- Miscellaneous

Pre- Conference Workshops

- Colposcopy
- Uro-Gynaecology
- Live Ultrasound Workshop for Obstetricians: Essential to Advance

Conference Registration fee

Registration Details of Conference (Please tick the category)

Registration fee	Early bird registration till 30 th August, 2017	Till 7 th October, 2017	Spot Registration
Members	3000/-	3300/-	3500/-
Non-Members	3500/-	3700/-	4000/-
PG Student	2500/-	2800/-	3300/-
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Pre conference workshop: 27/10/2017 (Please tick the category)

	Till 30 th August 2017	Till 7 th October 2017	Spot Registration
Registration fee per workshop	1000/-	1200/-	1500/-

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Managing the Morbidly Adherent Placenta: An Obstetrician's Guide

Bindiya Gupta

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Over the last century, the incidence of placenta accreta, increta, and percreta, collectively referred to as morbidly adherent placenta, has risen dramatically. It occurs in 1:2500 deliveries and has increased ten fold in the past 50 years. This condition is associated with increased maternal morbidity and mortality primarily due to hemorrhage and when unsuspected, outcomes can be catastrophic to the pregnant woman. Timely diagnosis during the antenatal period, on the contrary, allows for optimal planning of a multidisciplinary management approach and delivery at a tertiary care institution. This article discusses the appropriate investigations and management options available for a successful outcome.

Diagnosis

Risk factors¹

Patients with antepartum diagnosis of placenta previa, the risk for placenta accreta was 3%, 11%, 40%, 61%, and 67% for the first, second, third, fourth, and fifth or more cesarean section, respectively. Other risk factors include multiple D&C, previous uterine surgery, submucous fibroid and Asherman's syndrome.

Imaging

Diagnosis of placenta accreta is usually based on findings of transabdominal ultrasound with doppler in the second or third trimester. However, transvaginal ultrasound allows for a more detailed assessment of a placenta's invasiveness, compared to transabdominal scan.

A low lying gestational sac, close to the uterine scar with thinning of the myometrium is suspicious of accreta in the first trimester. Ultrasound features associated with a high risk of placenta accrete include, presence of placental lacunae (irregular vascular spaces resulting in a "Swiss cheese" appearance) with turbulent blood flow, retroplacental myometrial thickness (less than 1 mm), loss of the normal hypoechoic retroplacental zone and anomalies of the bladder-myometrium interface.² Irregular intraplacental vascularization with tortuous confluent vessels affecting the entire placental width and hypervascularity of the entire serosa-bladder wall interface with bridging vessels are specific for percreta.

MR imaging can provide more information in posterior placenta and regarding depth of invasion and parametrial

extension. It obtains the best definition of the uterine-placental interphase and its relation to the bladder. The findings on MR imaging are uterine bulging, heterogeneous placenta, placental bands and focal interruptions in the hypointense myometrial border. It is advised to use MRI in all cases with a non-conclusive ultrasound or doppler and doubtful parametrial invasion.

Preoperative checklist

- Referral to a tertiary centre with experience in the management of placenta accreta preferably with facility for interventional radiology and intensive care unit.
- Multidisciplinary team comprising of senior obstetrician, neonatologist and anesthetist. Surgical expertise from vascular surgeons, trauma surgeons, gynaecological oncologists and urologist may be required.
- A written informed consent of peripartum hysterectomy with consent for need for transfusion, ICU care, ventilation should be taken. Consent regarding injury to pelvic structures should also be taken.
- All required blood products, including red blood cells, fresh frozen plasma and platelets, should be available. Facility for cell salvage techniques may be helpful.
- Arrange hemostatic agents like Factor VIIa etc.
- The decision to use balloon occlusion or embolization catheters should also be determined in advance.
- Preoperative ultrasound for placental mapping to determine the upper edge of the placenta

Treatment³

Electively scheduled cesarean delivery and hysterectomy at 34 weeks after antenatal steroids is the gold standard to decrease morbidity associated with vaginal bleeding and emergent delivery.⁴ General or regional anesthesia may be used and depends on the surgeon's preference. After induction of anesthesia, multiple points of vascular access should be obtained like central venous catheter as well as a peripheral arterial line placement.

Steps of surgery

- Once the abdomen is entered, the entire pelvis

should be inspected. The most common site of placental invasion is through the anterior uterine wall to the bladder. The presence of any vascular channels, evidence of anterior placental invasion and parametrial extension should be noted.

- After identification of placental abnormalities, the hysterotomy site should be chosen. Ideally, hysterotomy is performed away from the placenta, incision usually given 2 cms above the upper edge determined on ultrasound to prevent cutting through the placenta. Alternatively, a classical incision can be given.
- After delivery of the infant, the placenta should not be disrupted and uterotonics are administered. Although some reports recommend avoiding uterotonics to limit placental disruption, other data suggests that uterotonics reduce uterine atony and limit uterine bleeding.
- Once the decision is made to proceed with hysterectomy, the hysterotomy incision should be closed expeditiously and the procedure initiated. Hysterectomy is performed according to standard steps.
- However, in increta and percreta, when the placenta invades the wall of the uterus, the myometrium is typically very thin and friable. If hysterectomy is performed in a standard fashion by placing clamps along the wall of the uterus the uterine wall is often disrupted and substantial bleeding can result. To prevent this, a **retrograde hysterectomy** can be performed as described below.
- The round ligament is divided and retroperitoneum is opened widely. The ureters are visualized and sloped, the utero-ovarian ligaments divided, and the ovaries packed. The vesicouterine peritoneum is then stripped over the bladder to the extent possible without placental disruption. The uterine artery and its collateral channels are then ligated. After the major vascular channels are divided, dissection is continued until the area below the placental tissue is reached. This typically requires additional dissection of the plane between the bladder and uterus/placenta. In cases of percreta, it may be necessary to perform a cystotomy to fully separate the bladder from the uterus. Once below the placental tissue the lower uterine segment and cervix are gently elevated, anterior and posterior colpotomy is done, lateral clamps applied and the fundus of the uterus with the placental mass is delivered. If haemostasis is obtained at this point the cervix can be left in situ; however, there are often significant vascular channels remaining on the surface of the cervix, and removal of the entire cervix is often required to obtain haemostasis.
- After the uterus and placenta have been completely removed the entire pelvis should be re-inspected. Ensure hemostasis and do retrograde filling of bladder to check for integrity.

Measures to prevent urinary tract injuries

- Using pre-op cystoscopy to check for obvious bladder wall involvement
- Placement of large bore ureteral stents for easier palpation.
- Filling the bladder with methylene blue prior to bladder mobilization.

Measures to reduce blood loss

- Pelvic artery embolization is the most frequently performed radiologic procedure for obstetric hemorrhage. Catheters are placed, under fluoroscopic guidance, into the internal iliac artery. If needed, hemostatic substances can then be administered via the catheters. Embolization catheters can be placed preoperatively, to be used if bleeding ensues or in the case of patients with obstetric hemorrhage after delivery.
- Balloon occlusion catheters can be placed prior to hysterectomy under fluoroscopic guidance within the internal iliac artery. At the time of hysterectomy, the balloons can be inflated prophylactically or if heavy bleeding is encountered.
- Alternatively, prophylactic bilateral ligation of anterior division of internal iliac artery can be performed to reduce blood loss.

Conservative Management

Conservative management describes any approach whereby hysterectomy is avoided and should be considered only with appropriate counseling in centers equipped to manage the initial procedure and any subsequent complications. **Indications include:**

- (a) Conditions in which an upfront hysterectomy carries an unacceptably high risk of hemorrhage or adjacent tissue injury.
- (b) In women who desire future child-bearing. Occasionally, conservative management may be an option for highly motivated, appropriately counseled women who are willing for close follow-up.

Uterine-sparing techniques⁵

Leaving the placenta in situ: expectant management

The technique is a typical hands-off approach, in which the umbilical cord is ligated close to its placental insertion after delivery without any attempt to remove the placenta. After a cesarean delivery, the hysterotomy is closed in the routine fashion. Other adjunctive measures like uterotonics, compression sutures, balloon tamponade, uterine artery embolization, and/or uterine artery ligation may reduce uterine perfusion, decrease postpartum hemorrhage, and

expedite placental resorption. The time to spontaneous resolution ranges from 4 weeks to 9-12 months, with a mean of 6 months. Available evidence does not support the use of Methotrexate as it further increases chances of infection, methotrexate-related pancytopenia and nephrotoxicity. Also, the time to resolution is same as expectant management. Success rates range between 40%-50%.⁶

Hysteroscopic resection of retained adherent placenta

Placental remnants can be resected under hysteroscopic guidance. The depth of placental invasion must be measured preoperatively on transvaginal sonography and the procedure can be done under laparoscopic guidance to avoid inadvertent injury. It helps to reduce pain and expedite placental resolution. Moreover, the procedure is under continuous visualization minimizing the chances of injury to uterus and surrounding structures and chances of adhesion formation are less. In a series, complete resolution occurred after a single procedure in 5 patients (42%), after 2 attempts in 2 patients (17%), and after 3 attempts in 4 patients (30%).⁷ This procedure is not recommended for increta and percreta.

Placental-myometrial en bloc excision and repair

The best candidates are women with a clearly delineated, focal area of involvement and an accessible border of healthy myometrium.

Triple P procedure:⁸ This procedure involves 3 steps: (1) preoperative placental localization using transabdominal ultrasound to identify the superior border of the placenta, with transverse hysterotomy planned 2 fingerbreadths above the uppermost placental edge; (2) preoperative placement of intraarterial balloon catheters with inflation after delivery or ligation of the uterine arteries when catheterization is unavailable; and (3) no attempt to remove the placenta with en bloc myometrial excision and uterine repair. During the excision, a 2cm margin of myometrium is preserved above the bladder edge to allow hysterotomy closure. This procedure is contraindicated in percreta with lateral extension into the broad ligaments, or deep infiltration into the cervix or the ureters and other regions inaccessible to immediate hemostatic control.

In cases involving bladder invasion or low-lying placenta, hemostatic clamps are placed along the incision edges, the lower segment is everted, placental fragments are removed piecemeal, and compression sutures are placed as needed for hemostasis. The resulting myometrial defect is then closed in the same way as a hysterotomy made at the time of cesarean delivery. Limited evidence shows less blood loss with local resection as compared to hysterectomy.⁹

Risk of Conservative Management

Complications include delayed hemorrhage, disseminated intravascular coagulopathy, endomyometritis, sepsis and rarely uterocutaneous fistula and arteriovenous fistula formation. Long term complications include recurrence (upto 30%) and adhesion formation (10-14%).

Criteria defining failure of conservative management⁵

These include the following:

- Ongoing hemorrhage despite conservative management (no time limit; may occur hours to weeks after delivery)
- Cardiovascular instability or signs of hemorrhagic shock (hypotension, tachycardia, decreased urine output)
- Disseminated intravascular coagulopathy (immediate or delayed)
- Development of complications as a result of conservative techniques requiring abandonment of the approach (ie, arterial injury after attempted intraarterial balloon occlusion or embolization)
- Severe pain following conservative management
- Maternal request for definitive surgical management (hysterectomy) after attempted conservative management

Delayed Hysterectomy¹⁰

Planned delayed hysterectomy is aimed at prevention of complications that may occur with either immediate hysterectomy or prolonged placental retention. The advantages include reduced risk of hemorrhage at the time of hysterectomy, planes of surgery are better and in cases of bladder invasion it helps in better identification of the uterovesical fold thereby reducing chances of bladder injury (Figure 1). Published data to support this practice are scarce, and the optimal timing of planned delayed hysterectomy is unclear.

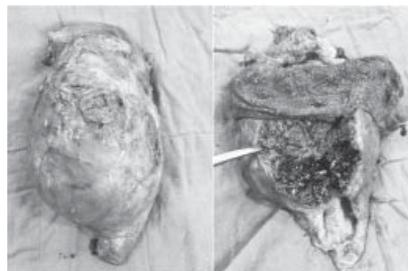


Figure 1: Delayed hysterectomy for placenta accreta with parametrial extension after 4 weeks. Patient had uterine artery embolization after the placenta was left in situ.

To conclude, the prenatal diagnosis of accreta on ultrasound is crucial and is associated with a significant reduction in maternal blood loss and post partum complications. An elective cesarean hysterectomy at

34 weeks remains the gold standard, the trend towards conservative management of placenta accreta using embolization techniques, and observation must be balanced with a significant rate of complications such as infection and DIC.

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When a child is born....

A ray of hope flickers in the sky
A tiny star lights up way up high
All across the land dawns a brand new morn
This comes to pass when a child is born

A silent wish sails the seven seas
The winds of change whisper in the trees
And the walls of doubt crumble tossed and torn
This comes to pass when a child is born

A rosy hue settles all around
You've got the feel you're on solid ground
For a spell or two no-one seems forlorn
This comes to pass when a child is born

And all of this happened
Because the world is waiting
Waiting for one child
Black, white, yellow, no one knows
But a child that would grow up and turn tears to laughter
Hate to love, war to peace
And everyone to everyone's neighbour
Misery and suffering would be forgotten forever

It's all a dream and illusion now
It must come true, sometimes soon somehow
All across the land dawns a brand new morn
This comes to pass when a child is born

- Adapted from the lyrics of the song "A child is born"
by BoneyM

Journal Scan

Megha Jindal¹, Richa Aggarwal²

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Am J Obstet Gynecol. 2017 Jan; 216(1):78.e1-78.e2.

Minimizing blood loss at cesarean-hysterectomy for placenta previa percreta

Michael A. Belfort, Alireza A. Shamshiraz, Karin Fox

Abstract

Preventing blood loss at the time of a cesarean delivery during a scheduled, nonemergent cesarean hysterectomy for placenta percreta may reduce the need for crystalloid and blood product transfusion. Commonly a classical hysterotomy is created and this can result in as much as a 500-800 mL blood loss before the hysterotomy is closed. Our technique involves placement of 4 full-thickness interrupted sutures in a box pattern to create an unperfused area of upper uterine segment. Diathermy is used to open the uterus to the membranes in the center of the "box" without blood loss. A finger is then inserted between the membranes and uterus to create a space into which 1 side of an 80-mm linear cutting stapler is introduced. The other side of the stapler is then attached and clamped closed, and the stapler is activated. Forward motion of the lever lays down 2 rows of staples, and backward movement of the lever divides the uterine muscle between the 2 staple lines. The stapler is removed and reloaded and reintroduced 1 or 2 times as needed to create an avascular hysterotomy large enough to atraumatically deliver the baby. The membranes are then opened and the baby is delivered. Following this the

umbilical cord is clamped and cut without any attempt to remove the placenta, replaced in the uterine cavity, and the hysterotomy is closed with a running locked suture that incorporates the membrane edges. The hysterectomy then proceeds. In most cases there is minimal blood loss (usually <20 mL) from the cesarean delivery.

Editor's comment

The rate of cesarean hysterectomy ranges from 0.4 to 2.5 per 1000 births and has risen significantly during the past few decades. Most commonly it is performed for intractable uterine atony or abnormal placentation. A classical hysterotomy done for placenta percreta itself results in a 500-800 mL blood loss before the hysterectomy even begins. Theoretically, an almost bloodless cesarean delivery may reduce the blood loss for the entire procedure, avoiding significant crystalloid/colloid infusion and/or blood product transfusion despite as much as a 1500mL blood loss at the time of hysterectomy. The author has used this technique in three patients and noted less than 20cc blood loss at the time of cesarean section in each case, with no need for transfusion. Such novel technique may prove to be useful in near future but at present requires more trials.

Arch Gynecol Obstet. 2017 Jul 28.

Outcomes of nonsurgical versus surgical treatment of cesarean scar pregnancies in the first trimester

Erin E. Washburn, Katherine Pocius, Daniela Carusi

Purpose

To compare outcomes of nonsurgical versus surgical treatment of Cesarean scar pregnancies (CSP) in the first trimester and identify optimal treatment methods for CSP.

Methods

Retrospective cohort study of all women diagnosed and treated with CSP in the first trimester at a single tertiary care center from 2000-2012. Main outcome measures were need for additional treatments, hemorrhage, or emergent hysterectomy. Future pregnancy outcomes were considered secondarily.

Results

Twenty-three cases of CSP treated in the first trimester

were confirmed including 12 treated surgically and 11 treated nonsurgically. Of the nonsurgical patients, none treated with a combination of intrasac potassium chloride (KCl) and systemic methotrexate (MTX) required further treatment versus 5/8 (62%) of those treated with a single agent ($p = 0.18$). One patient who was treated with intrasac KCl alone experienced hemorrhage. Of the nine patients treated with suction dilation and curettage (D&C), two (22%) required additional intervention, but none experienced major complications. Nonsurgical therapy had a higher rate of needing further intervention (45%) than surgical therapy (17%) ($p = 0.19$). There was one recurrent CSP in 11 subsequent deliveries with no uterine ruptures or hysterectomies.

Conclusions

We have described nonsurgical and surgical treatments of first trimester CSP with a low rate of major complications and no emergent hysterectomies. Of the nonsurgical therapies, single-agent treatment with either systemic MTX or intrasac KCl was associated with high rates of needing additional treatment and should be avoided. Our method of ultrasound-guided suction D&C resulted in no major hemorrhage and is a reasonable surgical treatment option.

Editor's comment

The incidence of cesarean scar pregnancy approximates 1 in 2000 normal pregnancies and has increased alongside

the cesarean delivery rate. Standard treatment protocols are lacking and several nonsurgical and surgical treatment modalities have been described, yet controversy persists regarding the optimal approach. Though hysterectomy is an acceptable initial choice in those desiring sterilization, usually patients seek fertility preserving options. The latter can be either nonsurgical or surgical approach. In this series, the nonsurgical treatment group (systemic MTX or intrasac KCl) had a higher overall rate of failure than the surgical group (D&C or laparoscopic resection). Possible explanation is the universal use of ultrasound guidance during D & C favoring gestational sac removal with minimal curettage of the prior Cesarean scar site.

BMC Pregnancy Childbirth. 2017 Apr 18;17(1):105.

Chewing gum for intestinal function recovery after caesarean section: a systematic review and meta-analysis

Zunjia Wen, Meifen Shen, Chao Wu, Jianping Ding, Binbin Mei

Background

Gum chewing has been reported to enhance the intestinal function recovery after caesarean section, current perspectives and practice guidelines vary widely on the use of gum chewing, more studies on the role of gum chewing after caesarean section are needed.

Methods

We performed a comprehensive, systematic meta-analysis of randomized controlled trials (RCTs) on the efficacy of gum chewing after caesarean section. Studies were identified by searching EMBASE et al database (until June 30, 2016). Summary odd ratios or weighted mean differences with 95% confidence intervals were calculated for each outcome with fixed- or random-effects model.

Results

Ten RCTs with a total of 1659 women were included in our meta-analysis. Gum chewing provided significant benefits in reducing the time to first passage of flatus, first defecation, first bowel sound, first bowel movement and the length of hospital stay, but not in the time to first feeling of hunger.

Conclusions

Gum chewing hastens the intestinal function recovery after caesarean section and offers a safe and inexpensive option. High-quality and larger-scale RCTs are still warranted to clarify the role of gum chewing in intestinal function recovery after caesarean section.

Editor's comment

The incidence of caesarean delivery rate has increased worldwide over the past decades. However, it may lead to many complications such as postoperative ileus with a mean incidence of 10–15%, resulting in longer hospital stay, increased postoperative morbidity and excessive medical costs. Traditionally, physicians forbid oral feeding with concern to the risks of intestinal fistula, re-bleeding and aspiration mistakenly, but recent studies have supported that early postoperative feeding can stimulate bowel motility and shorten hospital stay. Gum chewing is a safe, simple and inexpensive modality for hastening the recovery of intestinal function after caesarean section, which is worthy of promotion for clinical use. This study supports that gum chewing is associated with early recovery of intestinal function after caesarean section, which may be helpful to reduce the time to first passage of flatus, first defecation, first bowel sound, first bowel movement and shorten the length of hospital stay.

Proceedings of AOGD Monthly Clinical Meet

AOGD Monthly Clinical Meeting was held at AIIMS Hospital, New Delhi on 28th July, 2017, 4.00-5.00pm. Following interesting cases were discussed.

Laparoscopic Management of Vesicouterine Fistula

Alka Kriplani, Vikas Yadav, Kartik S, Garima Kachhawa, Reeta Mahey

Introduction: Vesicouterine fistula (VUF) comprise 2-9% of all urogenital fistula. VUF was described for the first time in literature in 1908. 90% of cases of Vesicouterine fistula are Youssef syndrome. In 1957, Youssef described the classic triad of cesarean delivery, amenorrhea and cyclic hematuria.

Case Presentation: We present a case of 32 yr P2L2, Last child birth was 9 monthths back. FTLSCS was done i/v/o cervical fibroid came with complaint of Cyclical hematuria since 5-6 mnths and abnormal uterine bleeding since 5-6 mnths. On examination 16 wks abdominopelvic mass felt arising from posterior wall of uterus obliteration POD. Patient underwent MRI and cystoscopy preoperatively for confirmation of vesicouterine fistula. Patient underwent laparoscopic myomectomy and cervicovesical fistula repair repaired with 3-0 v-lock (polyglyconate)-barbed suture, full thickness single layer repair done with omental patch. Post operatively catheter was put for 21 days along with anticholinergics and urine alkalinizing agent. On day 21 patient was continent and happy. Pecularity about this case was unusual presentation of AUB in vesicouterine fistula, use of barbed suture and most importantly the case was done by gynecologist rather than urologist.

Unusual cause of Primary infertility - Transverse vaginal septum

Bhawani Shekhar, Jyoti Meena, Sunesh Kumar, KK Roy, Neeta Singh, Seema Singhal, Juhi Bharti, Aarthi Jayraj

Introduction: Transverse vaginal septum is a rare anomaly of incomplete vertical fusion of mullerian duct with urogenital sinus. Incidence ranges from 1 in 2,100 to 1 in 80,000. A perforated transverse vaginal septum is an unusual entity in patients presenting with infertility.

Case Presentation: A 36 year old, nulliparous female presented with primary infertility and dyspareunia since 15 yrs. She had no menstrual complaints. On examination secondary sexual characters were well developed. Per speculum and per vaginal examination revealed a 2 cm deep blind vagina. Ultrasound showed normal uterus and cervix with no collection.

Examination under anesthesia during menses revealed a transverse vaginal septum with a small central perforation. Septum was resected with simple excision with end to end anastomosis. Patient was followed after 2 wks and 6 wks. There was no evidence of restenosis and patient was relieved of dyspareunia. Patient is now trying for conception.

Conclusion: Perforate transverse vaginal septum is a rare entity. Patients present late as there is no menstrual complaint. If diagnosed correctly a simple surgical procedure can treat the condition.

Rh Isoimmunisation: The challenge continues

Dipika Deka, Vatsla Dadhwal, K Aparna Sharma, Piyush Bansal

In India Rh Isoimmunisation still occurs. Despite the availability of anti D injection, facilities for monitoring and techniques of IUT, women are often referred late (with hydrops fetalis). The main problems are that in Rh negative women indirect combs' test (ICT) is not done at booking. Even if it is done, it is not repeated 4 wks and done late at around 28-32wks. By that time hydrops usually occurs. In Rh iso-immunised women monitoring is wrongly done with ICT even after critical titres are reached rather than MCA-PSV doppler monitoring. Patients are often referred late after 4-8 wks of ICT positive report, with hydrops fetalis, even MTP advised. They are usually delivered preterm and there is also the practice of giving Inj Anti-D before referring patient. Intravenous immunoglobulin is given without fetal monitoring, along with steroids for decreasing ICT titers. Often, in these women, karyotype is advised, and a genetic consultation is sought.

In our recent experience, a G4P1+1+1+1 Rh Isoimmunised mother presented at 24 wk POG with fetal hydrops and mirror syndrome in mother (pre-eclampsia and anasarca). Emergency IUT was done, anti-hypertensives started. Edema and Hydrops resolved completely after 4 IUTs. Received a total of 7 IUTs. Last at 33 wk. BP controlled without medication at 33wk. Confirming diagnosis of mirror syndrome. She is presently at 35 wks and planned for induction at 36wk.

Over the last 16 years we have given 1023 IUTs to 389 women, presently it is over 100 IUTs every year. There is better awareness among physicians and the cases referred with hydrops has reduced by 50%. However

still around 20% of patients come with hydrops because of poor antenatal and postnatal management of Rh negative mothers.

On an average an immunized fetus needs 2-3 IUTs, however even upto 7 IUTs may be needed in special cases. The POG at first IUT is mostly around 26-28 wks however there is a significant increase in cases receiving first IUT at around 20 wks. With better techniques of monitoring and managing Rh Isoimmunised pregnancies, the fetuses can usually be carried beyond

34 weeks with a significant number of them going beyond 36 weeks too.

Around 40% fetuses can be delivered vaginally. The procedure related pregnancy losses are now around 4-5%. The overall survival of fetuses is more than 90% with survival even in hydropic fetuses increasing over the years from 70% to 93%. The principles of successful management includes timely prophylaxis, intensive serial US and Doppler monitoring of isoimmunised cases and fetal blood transfusion in cases of severe anemia.

World Breastfeeding Week (1-7th August)



World Breastfeeding Week (WBW) is an annual celebration which is being held every year from 1 to 7 August across the globe to encourage breastfeeding and improve health of babies around the world. It was first celebrated in 1992 by World Alliance for Breastfeeding Action (WABA) and is now observed in over 120 countries by UNICEF, WHO and their partners including individuals, organizations, and governments. WABA was formed on 14 February 1991 with the goal to re-establish a global breastfeeding culture and provide support for breastfeeding everywhere.

The theme for 2017 World Breastfeeding Week (WBW) is **“Sustaining Breastfeeding Together”**. This is the 25th year of WBW. **International Lactation Consultant Association (ILCA)** is partnering with organizations around the globe - including United Nations Children’s Fund (UNICEF), World Health Organization (WHO), International Baby Food Action

Network (IBFAN), La Leche League International (LLLI), The Academy of Breastfeeding Medicine (ABM), Well Start International, The Global Goals, and the World Alliance for Breastfeeding Action (WABA) to promote the pivotal role of breastfeeding in valuing our wellbeing. The main aim is to protect, promote and sustain breast feeding worldwide.

In 2016, WABA began the 15-year journey to achieve the Sustainable Development Goals (SDGs) by linking each of these goals to breastfeeding by 2030. However, this it is not possible to achieve sustainable development without multi-level partnerships at all levels. WBW 2017 will call on advocates and activists, decision-makers and celebrants to forge new and purposeful partnership to achieve the goals. Together this will help attract political support, media attention, participation of young people and garner much wider coverage and support for breastfeeding.

Heartiest Congratulations to the Winners of Quiz of July Issue

1. Dr Poonam

2. Dr Anita Rajhoria

3. Dr Monika Sharma

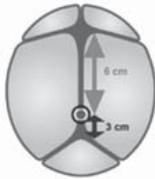
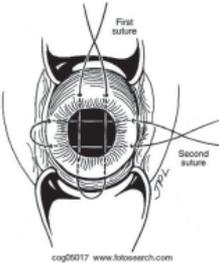
Answers Key to Quiz – July issue

1. Khanna’s & Shirodkar sling surgery 2. c, 3. a 4. Ovary is sutured to posterior aspect of uterus or lateral pelvic wall 5. Medially uterine vessels, laterally ureter and below posterior layer of broad ligament. 6. Previous RVF/VVF repair, severely restricted uterine mobility with severe endometriosis 7. Morcellation, bisection, myomectomy, intramyometrial coring 8. Xi system 9. A: Sydney in bag morcellation bag b: MorSafe bag 10. a) F b) T c) T d) T

Quiz Time: Tick it, Fill it, Click it, Whatsapp/ Email it

Compiled by **Rashmi, Bindiya Gupta**

Assistant Professor, Department of Obstetrics & Gynecology, University College of Medical Sciences & Guru Teg Bahadur Hospital, Delhi

- Q.1 What is the Triple P procedure?
- Q.2 WHO recommends an ideal C-section rate of
- Q.3 Mc Donald cerclage is preferred over Shirodkar because
- Q.4 Two methods for conservative management of placenta accreta are
- Q.5 As described originally by AbdRabbo in 1994, all are components of stepwise uterine devascularization except
- Ligating uterine vessels
 - Ligating decending branch of uterine arteries
 - Ligating utero ovarian anastomosis
 - Ligating ovarian vessels at infundibulopelvic ligaments
 - Ligating Anterior branch of internal iliac artery
- Q.6 All are true about Internal Iliac artery ligation except
- Internal iliac artery is ligated just before the origin of the posterior branch
 - Right angle clamp is passed underneath the artery from lateral to medial side
 - To ensure correct application, femoral artery should be palpated after ligation
 - Artery is ligated with non absorbable suture
- Q.7 What is true about laparoscopy in pregnancy?
- Chances of preterm delivery and abortion are less as compared to open surgery
 - Intra abdominal pressures are set preferably at < 18mm Hg
 - Laparoscopic cholecystectomy is contraindicated in first trimester
 - CT abdomen is contraindicated in pregnancy
- Q.8 All are true about instrumental deliveries except
- Written consent is a must before the procedure
 - Fetal coagulopathy is a contraindication
 - Vacuum is contraindicated in preterm fetus < 34 weeks
 - In outlet forceps application, rotation of head shouldn't exceed 45°
- Q.9 What is this point shown in diagram below
- 
- Q.10 Identify the procedure
- 
- Q.11 Write T/F
- Routine tocolysis should be given as a part of perioperative management in cerclage
 - Methotrexate is not recommended in conservative management of placenta accreta
 - After Forceps application, if there is no decent with each pull, sequential application of Ventouse can be tried
 - Unlock the blades of Forceps in between contractions
 - Episiotomy should be given before applying Forceps/ Ventouse
 - Joel Cohen incision is associated with a significant advantage in terms of reduction of post-surgical acute and chronic pain compared to Pfannestiel incision
- Q.12 Fill in the blanks in the following statements about Instrumental delivery
- Correct application of Forceps is whenis 1 cm above the plane of shanks andis in the midline of shanks.
 - Apply tractions duringwhen woman bears down.
 - Applying the blades outside and finding out Right or Left before application is known as
 - During Vacuum delivery, negative suction pressure is raised gradually to.....kg/cm².

Tick the MCQs and fill in the blanks. Click a pic and whatsapp or email to us

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ANNOUNCING NEXT COURSES / CONFERENCE The RCOG UK MRCOG Part II Final Preparation Course Enhanced Revision Programme (ERP)

Overview - E-lectures live from UK. Virtual interactive weekly classroom sessions.

Important Dates

- Last date for registration **21st August 2017**
- Online classrooms start **3rd September 2017- 3rd December 2017**

Course Fee: £300.00

Registration Guidelines (Online registration available on website)

<https://www.rcog.org.uk/en/departmental-catalog/Departments/revision-courses/1896---enhanced-revision-programme---september-2017/>

Simms Black Travelling Professorship Program

Prestigious fellowship by RCOG UK

Organized by RCOG N Z & Chandigarh Obstetrics & Gynaecology Society

Topics: Early assessment and first trimester screening, Algorithms to manage IUGR & twin pregnancies.

Dates: 8th September 2017

Speaker: Dr Pranav Pandya (Director of Fetal Medicine, UCLH London UK, Chair of Fetal Anomaly Screening Programme Advisory Group)

Program- 2:30pm to 5:00pm (PGI Chandigarh)

Convener- Prof. Dr Rashmi Bagga (Department of OBG PGI Chandigarh) E-mail: rashmibagga@gmail.com

Program- 6:00pm onwards. (Venue to be announced later)

Convener- Dr Nirja Chawla (President, Chandigarh Obstetrics & Gynaecology Society) E-mail: drnirja@gmail.com

31st Annual AICC RCOG Conference

Date: Saturday 2nd September and Sunday 3rd September, 2017 **Venue:** Hotel Trident, Nariman Point, Mumbai

For Online Registration visit: www.aicccog2017.com

RCOG UK Franchise MRCOG Final Preparation: Part II Written Course Saturday 30th - Sunday 31st December 2017 & Monday 1st January 2018 (Total 3 Days)

Limited to 25 candidates only (First Come First Serve basis)

Course Fee: Rs 30,000

Certificate of attendance for this course will be provided by the RCOG UK

Venue: RCOG North Zone Academic Centre, B-235, C R Park, New Delhi-110019, INDIA

UK Course Organizer & Convener - Dr Sanjeev Sharma

India Conveners and Contacts for details - Dr Saritha Shamsunder (shamsundersaritha@gmail.com/9313826748)

Dr Sweta Gupta (swetagupta06@yahoo.com/8130140007)

Dr Mamta Sahu (mamta2sahu@yahoo.co.in/ 9810106470)

Online payment available on website. www.aicccognzindia.com

RCOG North Zone India Announces Bi-Annual Colposcopy Courses Under Aegis of ISCCP & AOGIN

(Approved by the International Federation of Colposcopy & Cervical Pathology)

Venue: RCOG North Zone Academic Centre, B235, CR Park, New Delhi

Course Convenors: Dr Saritha Shamsunder (shamsundersaritha@gmail.com /Contact no. 9313826748)

Dr Mamta Dagar (mamtadagar2004@yahoo.co.in/ Contact no. 9811437782)

BASIC COLPOSCOPY COURSE on Monday 18th December, 2017

ADVANCED COLPOSCOPY COURSE on Tuesday 19th December, 2017

Course Fee: Rs 2000/- for Basic Colposcopy Course & Rs 2500/- for Advanced Course

Number of Delegates Limited to 25 only for each course

Last Date to Apply: 18th November 2017

Spot Registration subject to availability of seats.

Registration Guidelines

Online payment available on website. *There will be no refunds on cancellation.*

Offline Payment

Download Registration form from website www.aicccognzindia.com and send by Bank Transfer or Demand Draft made in favour of "RCOG NZ 2012 Plus" payable at New Delhi. (Cheques not accepted). Registration request along with Demand Draft to be posted to the Secretariat mailing addresses as given below.

Kindly Block Dates Saturday 16th & Sunday 17th December 2017 RCOG North Zone Annual Conference

Mailing Address: RCOG North Zone Secretariat

Sant Parmanand Hospital, 18 Alipur Road, Civil Lines Delhi 110054

Tel No - 91-11-23981260 Ext. 314, 9560069925 / 9716801190 Email: rcog_nz2012@yahoo.com

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- Laparoscopic Sling Surgery for Nulliparous Prolapse.
- All Gynae Urological Surgeries : TVT, TOT
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- Specialized Vaginal Surgeries: Sacrospinous Fixation, Vaginal Rejuvenation Surgeries
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