



2024, Volume 24, September, Issue 05

AOGD BULLETIN

Shared Decision Making - Enhancing Women Emancipation



Theme
Urogynaecology Updates

AOGD SECRETARIAT
Department of Obstetrics & Gynaecology
Maternity Nursing Home
ABVIMS & RML Hospital, New Delhi - 110001
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AOGD Bulletin

2024, Volume 24, September, Issue 05



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Disclaimer

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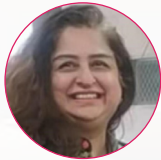


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Message from the President



President

Dear AOGDians,

Namaskar,

In this pleasant month of frequent rains, we have again come up with yet another topic of profound importance to the health and well-being of women across our nation—Urogynecology. This specialized field of medicine focuses on the diagnosis and treatment of pelvic floor disorders, which can affect millions of women at various stages of their lives and affect their quality of life, emotional well-being, and sense of dignity. This issue on Urogynecology is another step forward in our endeavour to ensure that every woman has access to the specialized care.

In the month of August, many important activities were held. The breastfeeding week was celebrated along with special CME and various awareness programmes to emphasize and make women aware of the importance of breastfeeding. The CMEs were also conducted by subcommittees to enlighten participants on very basic yet very relevant topics like AUB, caesarean section skills and preeclampsia. The certificate courses on PPH (second in series) and Medicolegal Training (module II) were conducted under the guidance of the experienced faculties.

Also, I would like to invite all of you to register for our upcoming 46th Annual Conference being held on 21-25 November, 2024 with lot many interesting workshops.

Best wishes and happy reading!

Dr. Ashok Kumar MD, PhD, FICMCH, FICOG, FAMS

President, AOGD

Vice Chairperson, Elect, ICOG, an Academic Wing of FOGSI

National Corresponding Editor, Journal of Obstetrics & Gynaecology of India

Director Professor & Head

Department of Obstetrics & Gynecology,

Atal Bihari Vajpayee Institute of Medical Sciences &

Dr. Ram Manohar Lohia Hospital, New Delhi

Message from the Hon. Secretary



Hon. Secretary

Dear AOGD members,

Warm greetings to all from the AOGD secretariat at ABVIMS & Dr RML Hospital

We are thankful to all our readers for their constant support and encouragement.

World Breastfeeding Week was observed in the preceding month. AOGD and its subcommittees organised various activities including CMEs, outreach programmes, and a few online campaigns. A PPH hands-on workshop series and a medicolegal certificate course have been initiated by the AOGD. Both the programmes were widely appreciated and well attended. The third of the PPH series and the second module of the medicolegal certificate course were held the previous month.

The Annual conference preparations are in full swing. Both pre and post-conference workshop details have been displayed on the website. The aim is to provide a comprehensive conference that will help the members advance their knowledge and skills.

The current bulletin aims to provide information on one of the most practical gynaecological topics - "Urogynaecology". Though a complicated topic, the editorial team has done a good job of covering all aspects in a simplified way.

September is also the month we celebrate Ganesh Chaturthi and Teachers' Day. Our teachers do not just instill knowledge in us, they are the ones who make us dream big, realise our potential, help us become our best selves, and make sure in this pursuit we never lose our values. On behalf of AOGD, we bow in respect to all our teachers and pray for their good health and happiness.

The safety and security of every girl in the country is of paramount importance. Let us all become alert, aware, and united like unbreakable sticks in a bundle, to fight for this basic right.

सब धरती कागज करूँ, लिखनी सब बनराय
सात समुद्र की मसि करूँ, गुरु गुण लिखा न जाय



Left to Right: Dr. Vandana Agarwal, Dr. Neha Pruthi Tandon, Dr. Kamna Dutta and Dr. Geetanjali Nabiyal

1st August 2024

Webinar - Adolescent PCOS - SIG PCOS IFS, IFS Uttar Pradesh (East) Chapter, Infertility and Endocrinology Committee, AOGD

Webinar on Adolescent PCOS organized SIG PCOS IFS
 In collaboration with IFS Uttar Pradesh (East) Chapter & Infertility and Endocrinology Committee AOGD
 1st August 2024, Thursday 4.00 to 7.00 pm

Dr Prof (Col) Pankaj Tishwar,
VSM, PhD
President IFS

Dr (Prof) Shweta Mittal Gupta
Secretary General IFS

Dr Ashok Kumar
President, AOGD

Dr Indu Chawla
Vice President AOGD

Dr Mala Arora
Mentor SIG

Dr Neeti Tiwari
Convener SIG

Dr Pooja Saxena
Chairperson, Reproductive and Endocrinology Committee AOGD

Dr Malvika Mishra
Secretary IFS UP East Chapter

PROGRAM		
TIME	TOPIC	SPEAKER
Master of ceremony - Dr Bhawani Shekhar		
4.00-4.05 pm	Welcome address by Convener	Dr Neeti Tiwari & Dr Pooja Saxena
4.05-4.10 pm	Address by Chief Guests	Dr Pankaj Talwar, President IFS & Dr Shweta Mittal, Secretary General
4.10- 4.15 pm	Address by Guest Of Honor	Dr Indu Chawla, Vice President AOGD
Introduction to Webinar		
Mentor SIG Dr Mala Arora		
First Session :		
Chairpersons – Dr Mala Arora, Dr Chandrawati, Dr Geeta Khanna		
4.15- 4.30 pm	Re - emergence of LETROZOLE	Dr Rashmi Sharma
4.30- 4.45 pm	Is CLOMIPHENE still relevant in PCOS ?	Dr Ruma Satwik
4.45- 5.00pm	Walking the tight rope - Gonadotropins in PCOS	Dr Renu Tanwar
5.00- 5.15 pm	Adjuvants in PCOS	Dr Neelam Bapna
5.15- 5.30 pm	Audience Interaction	
Second Session		
5.30 – 6.45 pm	Panel Discussion (case-based)– Managing Tricky Situations during ovulation induction in PCOS	Moderators Dr Neeti Tiwari, Dr Parul Garg
Panelists- Dr Shweta Mittal, Dr Pooja Saxena , Dr Poonam Mishra , Dr Malvika Mishra, Dr Renu Makkar, Dr Vaishali Jain, Dr Shalini Raman		
6.45 pm :	Vote of thanks	Dr Malvika Mishra

3rd August 2024

Refresher Course - Basics to Breakthrough in Gynaecology Max Institute in Cancer Care in with AOGD

MAX Healthcare

Max Institute of Cancer Care, Vaishali
 In association with Association of Obstetricians and Gynaecologists of Delhi (AOGD)
 cordially invites you to a Series of Refresher Course
Basics to Breakthrough in Gynae Oncology

Saturday, 3rd August 2024 1:00 pm to 5:00 pm
 Conference Hall, Service Floor, Tower -1, Max Hospital Vaishali, Ghaziabad

Advisor: Dr. Ashok Kumar, President, AOGD
 Convener: Dr. Satinder Kaur, Director - Gynae Surgical Oncology
 Co - Convener: Dr. Hemlata Garg, Chairperson - Gynae Surgical Oncology, Dr. Kamna Datta, Hon. Secretary AOGD

Series-1: Ca. Cervix

Time	Details	Speakers
1:00 pm to 1:45 pm	Registration & Lunch	
1:45 pm to 1:55 pm	Welcome Address	Dr. Ashok Kumar, President AOGD
1:55pm to 2:05 pm	Introduction	Dr. Satinder Kaur, Director - Gynae Surgical Oncology

For registration kindly Call or WhatsApp on 9999154483 (Ms. Anshika) (Free & Mandatory Registration)

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SESSION-1		
Chairpersons: Dr. Anita Sharma, Dr. Madhu Gupta, Dr. Jasmine Chawla Sharma, Dr. Meenakshi Sharma		
Time	Topics	Speakers
2:05 pm to 2:20 pm	Anatomy of Pelvic Spaces & Retroperitoneum	Dr. Urvasi Miglani, DDU
2:20 pm to 2:35 pm	Etiopathogenesis of Cervical Neoplasia	Dr. Arpita De, HSB
2:35 pm to 2:50 pm	FIGO Staging for Cervical Cancer and its Implications	Dr. Sharda Patra, LHMIC
2:50 pm to 3:00 pm	Discussion	
SESSION-2		
Chairpersons: Dr. Shanti J, Dr. Alpna Agarwal, Dr. Sowjanya Aggarwal, Dr. Vikas Goswami, Dr. Samta Gupta		
Time	Topics	Speakers
3:00 pm to 3:20 pm	Surgical Management of Early Ca. Cervix	Dr. Bindya Gupta, UCHS
3:20 pm to 3:35 pm	Management of Locally Advanced Ca. Cervix	Dr. Gagan Saini, MRC, Vishal
3:35 pm to 3:50 pm	Role of Chemotherapy and Immunotherapy in Advanced Metastatic & Recurrent Ca Cervix	Dr. Sachin Khurana, AIMS Delhi
3:50 pm to 4:00 pm	Discussion	
SESSION-3		
Chairpersons: Dr. Manoj Tangri, Dr. Sushma Dikhit, Dr. Aparna Chaturvedi, Dr. Archana Mehta, Dr. Vandana Jain		
Time	Topics	Moderator
4:00 pm to 4:15 pm	Recent advances in Ca. Cervix	Dr. Seema Singhal, AIMS Delhi
4:15 pm to 4:30 pm	Targeted Therapy & Immunotherapy Trials	Presenter: MCh Gynae Onco Students
4:30 pm to 5:00 pm	Case Based Discussion	Presenter: Dr. DNB students
Examiners: Dr. Sunitha Malik, Dr. Indu Chawla, Dr. Shruti Bhatia		
Followed by High Tea		



1st – 7th August 2024

World Breastfeeding Week - Theme - Closing the gap: Support for All



02/08/24 - Workshop on issues related to Breast feeding for Gynaecologist, Pediatricians and General physicians – Community Health and public awareness Subcommittee AOGD

03/8/24 - Educational programme Community Health and public awareness Subcommittee AOGD in association with LNJP Hospital

4



04/8/24 - Breast Feeding Awareness talk at Neeru Maternity Centre, Mundka - Community Health and public awareness Subcommittee



5th August 2024

CME – Rishta - all Mothers, Everywhere - AOGD under the aegis FOGSI



Association Of Obstetricians and Gynaecologists Of Delhi
Invites you to a CME under the aegis of FOGSI



5th August, 2024
Monday

1.00pm Onwards

India Habitat Center,
New Delhi

Convenors



Dr. Jaydeep Tank
President, FOGSI



Dr. Charulata Bapaye
Chairperson - Study of Female Breast Committee, FOGSI



Dr. Neharika Malhotra
Past Chairperson - Youth Talent Promotion Committee, FOGSI

Convenors



Dr. Divya Singhal
National Coordinator,
Breast Committee, FOGSI



Dr. Kavita Kumari
Convenor

Agenda

Time	Topic
1.00pm to 2.00pm	Lunch
2.00pm to 2.15pm	Registration

Time	Topic	Chief Guest
Inauguration & Lamp Lighting	2.15pm to 2.50pm	Dr. Neera Agarwal, Dr. Sunita Mittal, Dr. Vandana Bagga

Time	Topic	Speaker	Chairperson
2.50pm to 3.10pm	Breastfeeding An overview- Benefits, the golden hour	Dr. Neharika Malhotra	Dr. Bindu Bajaj, Dr. Sushma Sinha, Dr. Kiran Chhabra
3.10pm to 3.30pm	A practice based approach- Tips and tricks, Medication, Inability to feed, How long to feed	Dr. Sangeeta Rai	Dr. Anita Sabharwal Kapoor, Dr. Kamna Datta, Dr. Anuja Prakash Dr. Garima Kachhawa,
3.30pm to 3.50pm	WHO Labour care guide- current definition and timelines	Dr. Manju Puri	Dr. Indu Chawla, Dr. Mala Srivastava, Dr. Monika Bhatia
3.50pm to 4.10pm	Augmenting labour when and how	Dr. Sonal Bathia	Dr. Renuka Malik, Dr. Ratna Biswas, Dr. Anuradha Kapoor
4.10pm to 4.30pm	Intra Partum Monitoring	Dr. Chanchal	Dr. L. Shyam Singh Dr. Jyoti Sachdeva, Dr. Pushpa Mishra,

High Tea





6th August 2024

2nd Hands on Workshop on PPH by AOGD at VMMC & SJH

Association of Obstetricians & Gynaecologists of Delhi Hands-on Workshop on POST PARTUM HAEMORRHAGE		
Organized by Department of Obstetrics and Gynaecology, VMMC and Safdarjung Hospital, Delhi		
Tuesday 6 th August, 2024 2:00 - 5:00 PM		
Venue: Gynae Lecture Theatre and Skills Lab (Near Ward 6, Entry from Gate no 5)		
Advisors: Dr Ashok Kumar, President AOGD Dr Indu Chandra, Vice President AOGD Dr Bhadra Bhat, AGO, OHS and IAS, VMMC & Safdarjung Hospital Dr Anand Kumar, Secretary AOGD		
Time	Topic	Speaker
2:00 - 2:15 PM	Registration	
2:15 - 2:20 PM	Orientation of the Program and Welcome	Dr Ashok Kumar Dr Kanika Datta
2:20 - 2:30 PM	Inauguration	
Chairpersons: Dr Anjali Dabral, Dr Jyotsna Sati, Dr Ujjwala Saxena		
2:30 - 2:45 PM	Overview of PPH and Preparedness	Dr Bhadra Bhat
Chairpersons: Dr Sushila Yadav, Dr Usha Kati, Dr Vandana Sarwal, Dr Rajisha Das		
2:45 - 3:00 PM	PPH Drill	Dr Harshika Gulkarwal Dr Kavita Agarwal
3:00 - 3:15 PM	Tea Break	
3:15 - 5:00 PM	Work Stations	
Station 1	Estimation of blood loss	Dr Niharika Dhillon (VMMC)
Station 2	NAAC (New generation Anti Shock Garments)	Dr Rekha Bhatti (VMMC)
Station 3	Balloon Tamponade	Dr Shashikata Kabra (DDIR)
Station 4	Compression sutures	Dr Durgesh (ARVMS & Dr BMS, Hospital)
Station 5	Stepwise devascularization	Dr Sumitra Bhambhani (VMMC) Dr Kanika Chopra (LHMC)
Summarization & Vote of Thanks Dr Rajesh Kumar		



9th August 2024

Erasing the blots: AUB to Endometriosis in Adolescent adolescent health subcommittee AOGD & DGF

Dear Doctor,
Adolescent sub committee of
Association of Obstetricians & Gynaecologists Delhi,
Delhi Gynaecologist Forum & Bayer Pharma
invites you for
the academic updates

"Erasing the Blots; AUB to Endometriosis in Adolescent"
9th August | 1:30 pm onwards
Venue: Hotel Metropolitan, CP, Delhi.

CHIEF GUEST
Dr. Sharda Jain

GUEST OF HONOUR
Dr. Alka Kiplani

ORGANISING COMMITTEE
Dr. Kirti Chhabra, Dr. Taruna Dua, Dr. Alka Kiplani, Dr. Jyoti Surti, Dr. Jyoti Bhaskar

SPEAKERS
Dr. Alka Kiplani, Dr. Jyoti Surti, Dr. Jyoti Bhaskar

Scientific Agenda

TIME	TOPIC	SPEAKER	Chairperson
18:00-18:05	Welcome and Lamp Lighting	Chief Guest, Guest of Honour & Faculties	
18:05-18:30	Medical and Laproscopic Management of Adolescent Endometriosis	Dr. Alka Kiplani	Dr. Mahika Subharwal, Dr. Smita Malik, Dr. Manju Khemari, Dr. Manju Puri, Dr. Rajara Sharma
18:30-18:45	Q & A session		
18:45-19:00	Management of Adolescent AUB: Clinical Challenges	Dr. Jyotana Surti	Dr. Alha Saad, Dr. Reena Yadav, Dr. Reena Misra, Dr. Vandana Gupta, Dr. Taru Gupta
19:00-19:15	Q & A session		
19:15-19:30	Q&A: Awareness and Acceptance in AUB	Dr. Jyoti Bhaskar	Dr. Geeta Mediratta, Dr. Meenakshi Ahuja, Dr. Sonal Bhatia, Dr. Shikanta Kumar, Dr. Dipi Nahi,
19:30-19:45	Q & A session		
19:45-20:00	Vote of Thanks	Organising Committee	



11th August 2024

Health camp by Breast and cervical cancer awareness and prevention Subcommittee AOGD



23rd August 2024

WEBINAR: Preeclampsia update fetal medicine and genetics Subcommittee AOGD

WEBINAR Practical Tips in Obstetrics and Gynaecology - NAMAHA & Breast and Cervical Cancer awareness and prevention Subcommittee

Fetal Medicine and Genetics Sub Committee, AOGD
is pleased to invite you to
PRE-ECLAMPSIA: UPDATE
Friday | 23rd August, 2024 | 6:00 - 8:00 PM

Chief Guest
Dr. Ashok Kumar, President, AOGD

Guest of Honour
Dr. Seetha Ramamurthy Pal, Chairperson, Genetics and Fetal Medicine Committee, FOGSI

Moderators
Dr. AG Radhika, Dr. Jaya Chawla, Dr. Indu Chawla, Dr. Manjori Puri

Panelists
Dr. Ratna Bhow, Dr. Sandi Bathia, Dr. Krishna Agrawal, Dr. Rinku Sengupta Dhar, Dr. Anupama Gill Sharma, Dr. Pallavi Gupta

7:30-7:50 PM - Gestosis Score: Clinical Implications

Speakers
Dr. Girija Wagh, Dr. YIM Mala, Dr. Sujata Dahli, Dr. K. Aparna Sharma

7:50 PM - Vote of Thanks

National Association of Mentors for Adolescent and Youth Health & Breast and cervical cancer awareness and prevention committee AOGD

23rd August 2024, Friday | 7 PM to 8 PM

Practical Tips in Obstetrics & Gynecology

Chief Guest
Dr. Nandita Paisetkar

Convenor
Dr. Seema Prakash

Guests of Honor
Dr. Amrita Sunela, Dr. Ashok Kumar

Co Convenors
Dr. Upasana Verma, Dr. Nilanchal Singh, Dr. Srishri Prakash

Scientific Agenda		
TIME	TOPIC	SPEAKER
07:00-07:05 PM	Introduction	Dr. Seema Prakash
07:05-07:20 PM	Inauguration Wisdom Pearls	Dr. Nandita Paisetkar Dr. Amrita Sunela Dr. Ashok Kumar
07:20-07:35 PM	Session 1 Journey of HPV Vaccination in India: Prevent the Preventable	Dr. Nilanchal Singh Chairpersons Dr. Priya Ganeshkumar Dr. Subhas Malviya Dr. Anubhuti Singla Dr. Anjana Saxena
07:35-07:50 PM	Session 2 Cervical Cancer Screening- Detect The Detectable	Dr. Anju Singh Chairpersons Dr. Kumika chechi Dr. Priyanka Mimani Dr. Neelha Singhal Dr. Brajpal Tiwari
Vote of Thanks - Dr. Upasana Verma		

30th August 2024

Monthly clinical meeting – AIIMS

Online Meeting

Association of Obstetricians & Gynaecologists of Delhi

AOGD MONTHLY CLINICAL MEETING
Friday | Date: 30th August, 2024
Organised by All India Institute Of Medical Sciences, New Delhi

AGENDA

4:00 - 4:10 PM

President's Address
Secretary's Report

4:10 - 4:55 PM

1. Navigating phaeochromocytoma- paraganglioma (PPGL) in pregnancy - A critical clinical conundrum
Dr. Aditya Sarkar, Dr. Juhi Bharti
2. From Misapprehension to revelation: Story of a pelvic mass
Dr. Priyanka Das, Dr. Jyoti Meena
3. Obstructed hemi-uterus: Dilemma in diagnosis and management- A Case Series
Dr. Nutan Sahu, Dr. Reeta Mahey

4:55 - 5:00 PM

Audience Interaction

1. Navigating pheochromocytoma paraganglioma in pregnancy: A critical clinical conundrum
2. From misapprehension to revelation: Story of a pelvic mass
3. Obstructed hemi-uterus: Dilemma in diagnosis and management – A case series

31th August 2024

Certificate Course on Medicolegal Training Module 2

Association of Obstetricians & Gynaecologists of Delhi
CERTIFICATE COURSE ON MEDICOLEGAL TRAINING
(MODULE 2 OF THE SERIES OF 6 TRAINING MODULES)
organized by
AOGD, Medicolegal Sub Committee
31st August 2024 | 1:00 PM - 5:00 PM
Auditorium, Fortis Hospital
Shalimar Bagh

Dr. Ashok Kumar
President, AOGD

Dr. Indu Chawla
Vice President, AOGD

Dr. Kamna Datta
Hon. Secretary, AOGD

Dr. Nidhi Khera
Chairperson
Medicolegal Committee

Laws applicable to running your clinics:
• Biomedical waste disposal
• Documentation at clinics: What all you need to maintain ?
• Fire and safety laws

POCSO Act in day to day practice: Navigating the conundrums

Tubal ligation: Legal know how

Prescribing contraceptives : Gully or not Gully

LEARN FROM THE ESTEEMED EXPERTS

Dr. Jyoti Sachdeva
State Program Officer
Maternal Health, Family Planning,
Directorate of Family Welfare

Dr. Geetendra Sharma
M. D./LL. B.
Medico-legal Consultant
V. F. - FOGSI - 2022-23

Dr. Gaurav Aggarwal
Medicolegal
Consultant & Lawyer

Adv Anil Tiwari
Partner (Criminal Litigation),
Hamsurabi and
Solomon Partners (Law Firm)

There is no Registration fee
but Prior Registration is Mandatory

HURRY!
LIMITED SEATS

After completion of this Module, registered delegates would be awarded certificate stating that they have completed Medicolegal training Module 2
Note: Final Certificate will be issued to participants who completes All 6 Modules of Medicolegal Training



Forthcoming Events “for the month of September”

- 6th – Anaemia detection camp by Community health and Public Awareness Sub-Committee
- 27th – Monthly meeting ESI Basaidarapur
- 28th – Oncology Committee Webinar

From the Editors Desk



Chief Editor

Warm greetings to all!

Welcome to the 5th issue of the AOGD bulletin, where we have come up with the topic of “Urogynaecology”. Healthy women lead to a healthy nation and therefore we are emphasizing all aspects of women’s health. Urogynaecology is a sub-specialty that deals with female pelvic floor dysfunction. We as gynaecologists need to be well versed with all the disorders related to urogynaecology and recent advances in this field as we are the first contacts of the women presenting with urogenital symptoms and play a vital role in the preliminary diagnosis and management of these conditions.

The articles compiled describe briefly the major fundamental concepts of urogynaecology making the issue very educative and of great clinical importance. In this issue, we have covered multiple topics that will provide our readers valuable tips to be used in day-to-day practice.

Safety Foremost - Just like the health, the safety of women from violence/assault/crime is also of prime importance and concern. The independence of women from fear is the real independence of a country. We strongly emphasize towards safety of every woman.

Hope you will find this issue enriching, relevant, and useful for the practice. We look forward to any suggestions and feedback from you.

Wish you all a happy learning!

10 **Dr. (Prof) Renuka Malik**

Editor

Professor and Senior Consultant, ABVIMS & RML Hospital



Editorial Team: (Left To Right) Dr. Kanika, Dr. Preeti, Dr. Renuka, Dr. Kavita.
(Second Row Left To Right) Dr. Seema, Dr. Niharika

***Thought for the month: The day a woman can walk freely on the roads at night,
that day we can say India has achieved real independence - Mahatma Gandhi***



PRADHAN MANTRI SURAKSHIT MATRITVA ABHIYAAN



Call for Action from Directorate of Family Welfare & Association of Obstetricians and Gynaecologists of Delhi

Join hands with DFW for PMSMA on the 9th of Every Month!
Be a Samaritan for Moms-to-Be with Your Expertise



Free Antenatal Check-ups for high risk pregnant women by private doctors at Government dispensaries

Date: 9th of Every Month (10th if 9th is a Sunday)

Venue: Nearest Government Dispensary

Timings: Between 08:00 AM - 01:00 PM

“Spare some time for public interest”

Support the Dispensary staff in management of High Risk Pregnancy

Benefits of Volunteering:

You will be a part of a noble cause
You experience a new perspective
You can earn recognition

We urge all members of the AOGD to come forward and volunteer.

Together, we can make a dent in Maternal mortality and morbidity indicators.

Let us unite in this mission to ensure safe motherhood for every woman in Delhi.

Thanking you in anticipation

Dr. Vandana Bagga
Director

Directorate of Family Welfare, Delhi

Dr. Ashok Kumar
President
AOGD

Dr. Jyoti Sachdeva
State Program Officer (MH & FP)
DFW

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Clinical Relevance of Urodynamic Studies

Dr. Karishma Thariani

Consultant, Center for Urogynecology and Pelvic Health, New Delhi

INTRODUCTION

The study of observation of the changing function of the lower urinary tract over time is known as “Urodynamics”.¹ In the year 1988, the International Continence Society (ICS) defined it as an assessment of the function and dysfunction of the urinary tract by any appropriate method.² Over the last few decades urodynamic studies have evolved to include sophisticated means to study the symptoms, function, and dysfunction of the lower urinary tract.

In most cases, a thorough clinical evaluation including a good history and a clinical examination is enough to reach a diagnosis and start initial management. However, in complex scenarios with confusing history, in cases where the patient’s history does not corroborate with the examination findings, and in cases where initial treatments have failed to show any improvement in patient outcomes, urodynamic study (UDS) may help in coming to an accurate diagnosis by replicating patient’s symptoms in clinical settings. Therefore, UDS provides an insight into the physiology of bladder storage and voiding function, which may have no meaning by themselves unless coupled with the overall history and examination.^{1,3} The aim of any invasive UDS test is to reproduce the patient’s storage or voiding symptoms and to relate them to any synchronous urodynamic observation.

THE MICTURITION CYCLE

To understand and interpret a UDS one must have a basic understanding of the physiology of micturition. The micturition cycle (Figure 1) consists of 2 phases: the storage phase and the voiding phase.⁴ A normal bladder due to its property of accommodation fills with no or minimal increase in pressure or detrusor contraction. During this phase, the bladder outlet is tightly closed with contraction of the extrinsic and intrinsic urethral sphincter. Whereas in the voiding phase, the urethral sphincter relaxes along with the contraction of the detrusor initiating the process of voiding. The urethral pressure is always similar to or more than the intravesical pressure during the filling phase of the bladder. In a normal anatomic position, the urethral

pressure increases with any rise in intraabdominal pressure to prevent incontinence of urine. Any disorder in this well-orchestrated mechanism can lead to LUTS.

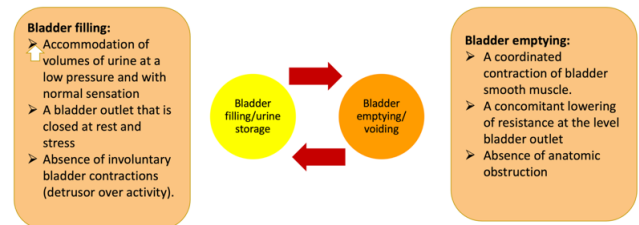


Figure 1: Micturition Cycle

Indications of Urodynamics

As discussed above urodynamic testing may not be a part of the initial workup of an uncomplicated patient with urogynaecological issues. The workup should always be started with a detailed history and examination, based on the observations, the need for further evaluation should be decided. Urodynamic studies should always be planned after formulating the questions one needs the test to answer using it. The American Urological Association (AUA) in collaboration with the Society for Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction (SUFU) summarizes the main indications for performing urodynamic studies into the following categories:⁵

1. To identify or rule out factors contributing to lower urinary tract dysfunction and assess their relative importance.
2. To obtain information about other aspects of lower urinary tract dysfunction.
3. To predict the consequences of lower urinary tract dysfunction on the upper tract.
4. To predict the outcome including undesirable side effects of a contemplated treatment.
5. To confirm the effects of an intervention or understand the mode of action of a particular type of treatment (especially a new one).
6. To understand the reasons for failure of previous treatments for symptoms or lower urinary tract function in general.

The common indications in urogynecology practice are:

1. Stress/ Mixed urinary incontinence (SUI/MUI) before invasive treatment
2. Voiding dysfunction
3. Refractory Overactive bladder (OAB)
4. Pelvic organ prolapse (POP) with SUI
5. Neurogenic bladder
6. Recurrent SUI with a history of previous failed surgery
7. Complicated or unclear history

ICS standard urodynamics protocol

Urodynamic tests should be performed to answer a specific question. "Formulating the urodynamic question" is a process of reviewing the clinical assessment already available and what potential therapy options may subsequently be appropriate, so the test can replicate the patient's symptoms, confirm the diagnosis, and identify appropriate treatment options and potential adverse effects. The following steps should be followed before performing the invasive testing.⁶

1. Clinical history, including valid symptom and bother score(s) and medication list.
2. Relevant clinical examination (abdominal/pelvic/genital examination, and checking for possible neurological disease or oedema).
3. Three-day bladder diary.
4. Representative uroflowmetry with post-void residual (PVR)

Technique of UDS:

UDS involves a combination of non-invasive office-based tests known as uroflowmetry and slightly more complex invasive procedures requiring sophisticated equipment such as 1. Urethral pressure profile, 2. Filling cystometry, 3. Pressure flow study. These tests individually or collectively can be used to gain insights about the lower urinary tract function. These tests are summarized below in brief:

Uroflowmetry: It is the measurement of the rate of urine flow over time. It is also an assessment of bladder emptying and is the only non-invasive test of urodynamics. A normal uroflow is a bell-shaped curve (Figure 2). When the flow rate is reduced or the pattern is altered, this may indicate bladder underactivity or bladder outlet obstruction. The voided volume, the voiding time, the average flow rate, and the maximum flow (Q_{max}) are recorded. For women, a peak flow rate (Q_{max}) of 15-20 ml/s is regarded as normal. As Q_{max} is dependent on the voided volume, a minimal bladder volume of 150ml is recommended for reporting the uroflow. The flow curve may vary in the same individual also at different times.

The 3 phases of standard invasive urodynamic testing include urethral pressure profile, cystometry during the filling phase, and a pressure-flow study during the voiding phase.

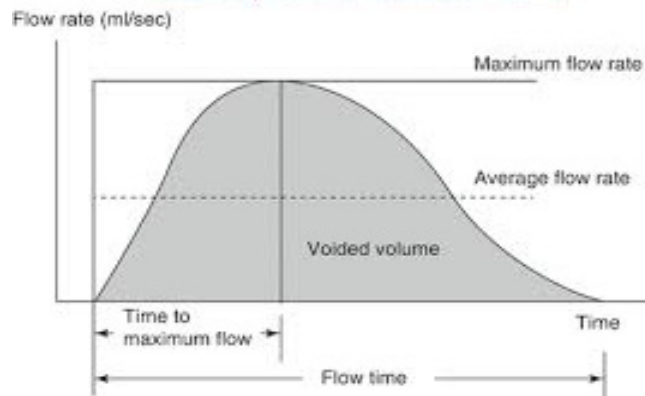


Figure 2: Bell shaped curve of normal uroflow

1. **Urethral Pressure Profile (UPP)** provides the measurement of the urethral length and its competence. It is typically performed in women to help identify the etiology and severity of stress urinary incontinence. The UPP helps in measuring the urethral closure pressure that is the pressure needed to open a closed urethra Pclo. The typical common practice is to perform UPP twice and then obtain the maximum urethral closure pressure (MUCP). If the value of MUCP is < 20 cm of H₂O, it is suggestive of intrinsic sphincter deficiency (ISD).
2. **Filling Cystometry:** Filling cystometry is the procedure in which the bladder storage phase is studied. It involves the dynamic measurement of detrusor pressure during the continuous filling of the bladder. It begins with the infusion of fluid into the bladder with a catheter. This can be done as a single-channel or multichannel procedure. Multichannel is better and usually preferred as it eliminates the changes in bladder pressure due to raised intraabdominal pressure and is also known as subtracted cystometry. Two pressure transducers are placed one each, in the bladder and rectum to record the intravesical (Pves) and intraabdominal pressures (Pabd) respectively. The bladder is filled at the rate of 50 ml/min with normal saline Pves and Pabd are measured continuously and detrusor activity Pdet is calculated by subtracting Pabd from Pves (Pves-Pabd). During the process of filling the patient is asked about the various bladder sensations such as first desire, normal desire, strong desire, and urgency. All these values are noted. It also determines the compliance and the capacity of the bladder. The competence of the sphincter can also be assessed during any abnormal detrusor contraction that occurs as well as on increasing the intraabdominal pressure by coughing, performing the Valsalva maneuver, and other activity that reportedly causes incontinence in the patient. Cystometry ends with a micturition command, or "permission to void."
3. **Pressure flow study (PFS):** At the end of the filling study, when the patient reports a sensation of maximal bladder filling or urgency, the patient is permitted to void. This measures the change in

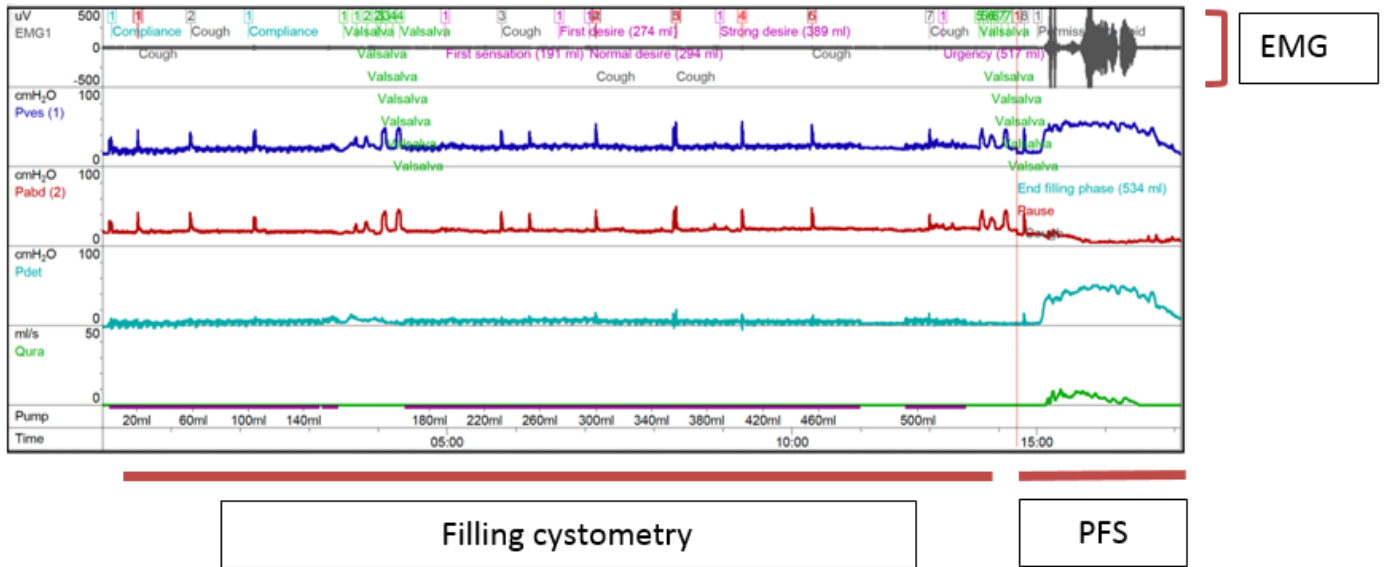


Figure 3: A UDS graph showing all phases of filling cystometry, pressure flow study and EMG

Pves, Pabd, and Pdet with the rate of flow of urine. An EMG may also be attached at this time to study the changes in the pelvic floor at the time of voiding. Ideally, a voiding study should be done leaving the patient alone to void in a private space, the patient can ring an alarm or bell when voiding is done. Additional variables that the clinician should note from the VPS include maximum detrusor pressure (cm H₂O), detrusor pressure at maximum flow (cm H₂O at ml/ sec), detrusor pressure at minimum flow (cm H₂O at ml/ sec), and urethral opening pressure (cm H₂O) which indicates detrusor pressure required to overcome urethral resistance to outflow. Maximum Pdet typically varies from 5 to 30 cm H₂O in normal women. An elevated maximum Pdet along with a prolonged or interrupted flow pattern may indicate a bladder outlet obstruction. Similarly, no rise in Pdet with an interrupted flow may be suggestive of a hypo contractile detrusor.

4. Electromyography (EMG): records the electrical potentials generated by the pelvic floor muscle activity utilizing surface electrodes or in some cases needle electrodes. The surface electrodes are applied on the perineal skin at 5 and 7 o'clock positions. Ideally during the filling phase an increase in EMG activity is seen when the patient is made to cough, this is called the guarding reflex, and at the time of voiding reduction in EMG activity should occur suggestive of pelvic floor relaxation.

Several important parameters, such as age, sex, body mass index, technique, equipment e.t.c can affect urodynamic values, making it challenging to define the normal values.⁷ Table 1 shows some normal urodynamic parameters in females based on the current literature.

Table 1: Normal range of values of various parameters assessed in urodynamic evaluation

Urodynamic Parameter	Normal value
First Sensation (ml)	100-250
First Desire to void (ml)	200-330
Strong Desire to void (ml)	350-560
Bladder Compliance (ml/ cm H ₂ O)	≥ 50
Detrusor activity	Stable
Maximum Cystometric capacity (ml)	450-550
Maximum Flow	13-25 ml/s
Detrusor pressure at maximum flow	18-30 cm H ₂ O
Voided volume	250-600 ml
Valsalva leak point pressure	< 60 cm H ₂ O suggestive of ISD
MUCP	< 20 CM H ₂ O suggestive of ISD

CONCLUSION

As discussed above, the parameters and interpretation of the UDS depend on many variables including the expertise of the technician and the comfort level of the patients. If these variables are not controlled it can hugely impact the test results, nonetheless, it remains the gold standard for the evaluation of LUTS.

After reviewing the existing literature, Cochrane concluded that urodynamics affects clinical decision-making in women, but there is a lack of similar trials for men and children.

KEY POINTS

1. Women who undergo urodynamic testing are more likely to have a change made to their management compared to those who do not undergo testing.
2. Women are also more likely to receive medical management and less likely to undergo surgical intervention, following a urodynamic investigation.
3. The evidence does not show a difference in overall continence rates, nor an improvement in the quality of life, following urodynamics testing.⁸

REFERENCES

1. Wyndaele M, Abrams P. Urodynamics in Female Urology. Eur Urol Suppl. 2018;17(3):91-9
2. Abrams P, Cardozo L, Fall M et al. The standardization of terminology of lower urinary tract function: report from the Standardisation Sub-committee of the International Continence Society. Neurourol Urodyn. 2002; 21 (2): 167–78.
3. Serati M, Cattoni E, Siesto G, et al.: Urodynamic evaluation: Can it prevent the need for surgical intervention in women with apparent pure stress urinary incontinence? BJU Int. 2013; 112(4): E344–50.
4. Lenherr SM, Clemens JQ. Urodynamics: with a focus on appropriate indications. Urol Clin North Am. 2013 Nov;40(4):545-57. doi: 10.1016/j.ucl.2013.07.001. Epub 2013 Aug 8. PMID: 24182974.
5. Collins CW, Winters JC; American Urological Association; Society of Urodynamics Female Pelvic Medicine and Urogenital Reconstruction. AUA/SUFU adult urodynamics guideline: a clinical review. Urol Clin North Am. 2014 Aug;41(3):353-62, vii. doi: 10.1016/j.ucl.2014.04.011. PMID: 25063591.
6. Drake MJ, Doumouchtsis SK, Hashim H, et al. Fundamentals of urodynamic practice, based on International Continence Society good urodynamic practices recommendations. Neurourol Urodyn. 2018 Aug;37(S6):S50-S60. doi: 10.1002/nau.23773. PMID: 30614058.
7. Mahfouz W, Al Afraa T, Campeau L, et al. Normal urodynamic parameters in women: part II--invasive urodynamics. Int Urogynecol J. 2012 Mar;23(3):269-77. doi: 10.1007/s00192-011-1585-y. Epub 2011 Oct 20. PMID: 22011933.
8. Foon R, Toozs-Hobson P, Latthe P. Prophylactic antibiotics to reduce the risk of urinary tract infections after urodynamic studies. Cochrane Database Syst Rev. 2012 Oct 17;10:CD008224. doi: 10.1002/14651858.CD008224.pub2. PMID: 23076941.

The poster for the AOGD 2024 46th Annual Conference features the following elements:

- Logos:** The Association of Obstetricians and Gynaecologists of India (AOGD) logo on the left and the Atal Bihari Vajpayee Institute of Medical Sciences logo on the right.
- Text:** "AOGD 2024" in large red letters, "46th Annual Conference of AOGD" in blue, "Organised By: Department of Obstetrics and Gynaecology, Atal Bihari Vajpayee Institute of Medical Sciences and Dr. Ram Manohar Lohia Hospital, New Delhi", "Empower Women - Empower the Nation", and "22nd - 24th November, 2024 | India Habitat Centre, Delhi".
- Information Brochure:** A circular inset image showing hands holding a brochure with a colorful chart.
- QR Code:** A QR code in the bottom left corner with the text "Scan QR Code to Register".
- Decorative Elements:** A stylized cityscape at the bottom, a QR code, and the "CONFERENCES INTERNATIONAL" logo.

Recurrent Urinary Tract Infections in Women: An Eye View

Dr. Sudhaa Sharma¹, Dr. Anil Mehta²

Former Professor PG Department of Obs and Gyn GMC Jammu, Vice President Indian Menopause Society (IMS).

Honorary Professor IMA,¹

Former Professor and Head Department of Obs and Gyn GMC Kathua, Past President Jammu Menopause Society.²

ABSTRACT

Women are particularly susceptible to urinary tract infections (UTIs), which can account for up to 25% of all illnesses they develop. Approximately 50–60% of women will develop UTIs in their lifetime, with *Escherichia coli* being the primary causative organism. Recurrent UTIs (RUTIs) are mainly caused by reinfection by the same pathogen. Frequent sexual intercourse is a significant risk factor for RUTIs. Complicated RUTIs, often associated with comorbid conditions, can lead to upper urinary tract infections or urosepsis. Properly defining RUTIs and distinguishing them from complicated UTIs, based on the number of infection episodes over a specific time frame, is essential. Understanding the role and limitations of urinary cultures in diagnosing RUTIs, along with the judicious use of antibiotics to prevent resistance, is crucial.

Keywords: Recurrent Urinary Tract Infection (RUTI), therapy, Antibiotic Prophylaxis, Prevention

INTRODUCTION

Women are more likely affected than males to get urinary tract infections. The most common illness that affects women the most out of all infections is UTI. In most UTI infections, *Escherichia coli* is the main pathogenic bacterium. After two bouts of acute bacterial cystitis within six months or three episodes within a year, recurrent urinary tract infections, or rUTIs, are identified.

The classic indicators of a urinary tract infection (UTI) include more than a hundred thousand colonies (colony-forming units) of urine culture together with symptoms including urgency, frequency, dysuria, or suprapubic pain. In individuals with acute, uncomplicated cystitis, voided midstream urine culture usually identify *E. coli*, as the cause. In hospital settings, UTIs are the most frequent infection among women; in community settings, they rank second.¹

Need for review: This review aims to provide guidelines for clinicians on various aspects of RUTIs, including epidemiology, diagnosis, and management in women.

It emphasizes preventing and reducing inappropriate antibiotic use, thereby minimizing the risk of antibiotic resistance and adverse effects. It also emphasizes non-antibiotic methods of RUTI prophylaxis that enhance ease of life and healthcare outcomes while lessening the risk of UTI relapse.

Epidemiology

In women, urinary tract infections (UTIs) are substantially more prevalent than in men, with an 8:1 ratio. Three out of every four women will have had a history of UTI by the age of 24, and 50–60% of women report having had a UTI at some point.² Recurrent UTIs (rUTIs) affect 20–30% of women with an initial episode of UTI. Incidence peaks in young, sexually active women and postmenopausal women due to hormonal changes and altered vaginal flora. This highlights the need for targeted preventive and management strategies for different age groups.

Figure 1 shows the incidence rates of rUTIs across different age groups, with the highest rates in women under 24 and postmenopausal women. This pattern underscores the importance of age-specific strategies to effectively manage rUTIs.

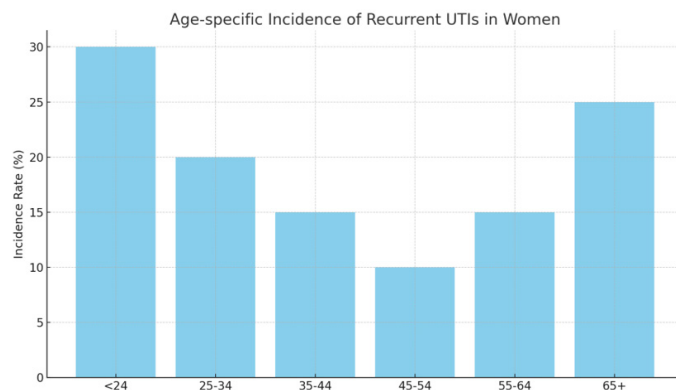


Figure 1: Age-specific incidence of recurrent UTIs in women: This figure illustrates the hypothetical incidence rates of recurrent UTIs across different age groups, highlighting the variations in incidence among women of various ages after reviewing different published literature.

Pathophysiology

Recurrent urinary tract infections (rUTIs) occur due to a complex interaction between the urinary tract environment and pathogens like *Escherichia coli*. These bacteria adhere to urothelial cells, causing inflammation and cystitis symptoms such as dysuria and urinary urgency. Their ability to form biofilms makes them resistant to immune defenses and antibiotics. Alterations in vaginal and urinary microbiota, due to factors like estrogen deficiency or antibiotic use, further disrupt natural defenses, facilitating infection. This cycle of infection and inadequate pathogen clearance leads to chronic urinary symptoms and recurrent episodes, highlighting the need for targeted therapies and preventive measures.

Risk Factors for RUTIs

Several factors contribute to the increased risk of RUTIs in women:

1. **Sexual Activity:** Frequent sexual intercourse is a known risk factor for UTIs. The introduction of bacteria into the urinary tract during intercourse can lead to infections.
2. **Spermicide Use:** The use of spermicides, especially in combination with a diaphragm, can alter vaginal flora and increase the risk of UTIs.
3. **Postmenopausal Changes:** Reduced estrogen levels in postmenopausal women can lead to changes in the vaginal flora and a higher susceptibility to UTIs.
4. **Genetic Factors:** Some women may have genetic predispositions that make them more susceptible to UTIs.
5. **Previous UTI History:** Women with a history of UTIs are at higher risk for recurrent infections.
6. **Urological Abnormalities:** Individuals may be at risk of recurrent infections due to defects in the structure or function of the urinary tract.³

Common Definitions

Acute Bacterial Cystitis: an infection of the urinary tract caused by a bacterial pathogen identified by culture. Acute-onset symptoms include dysuria, haematuria, a higher rate and intensity of urine, and either new or aggravated leakage are its defining characteristics.

Recurrent Uncomplicated Urinary Tract Infections in Women: Two distinct bouts of acute bacterial cystitis with accompanying symptoms that have been culture-proven within six months, or three episodes within a year.

Table 1: Key Definitions and Terminology

Term	Definition according to AUA/CUA/SUFU Guideline (2022) ⁴
Uncomplicated UTI	Infection in a healthy patient without recognized risk factors with an anatomically and physiologically normal urinary system.

Term	Definition according to AUA/CUA/SUFU Guideline (2022) ⁴
Complicated UTI	Infection in a patient with one or more complicating characteristics that raise UTI risk and lower treatment efficacy—such as anatomical anomalies, neurogenic bladder, immunocompromised state, or multi-drug-resistant bacteria.
Recurrent UTI (RUTI)	Defined as two bouts of acute bacterial cystitis within six months or three episodes within one year.
Asymptomatic Bacteriuria (ASB)	presence of pathogens in urine devoid of any symptoms.

Symptoms

UTI in Young Women

1. **Dysuria:** A central symptom presents in 90% of young adult women.
2. **Increased urinary urgency and frequency:** Variable presence.
3. **Haematuria:** May or may not be present.
4. **New onset or worsening incontinence:** May or may not be present.

Dysuria is a critical symptom in diagnosing UTIs, with a high specificity of around 90% in young women who do not have concomitant vaginal irritation or increased vaginal discharge. Other symptoms, including urinary frequency, urgency, suprapubic pain, and haematuria, can vary.

UTI in Older Women

Older women may exhibit fewer distinct symptoms. A valid diagnostic criterion is acute-onset dysuria, particularly when accompanied by new or worsening storage symptoms. Cloudy urine, dry vagina, burning in the vagina or perineum, pelvic or bladder pain, frequent and urgent urination, and incontinence are common nonspecific symptoms.⁵

Factors contributing to UTIs in older women:

1. **Decreased Estrogen Levels:** Lower estrogen levels in postmenopausal women lead to changes in the urinary and vaginal tissues, reducing their natural defense against infections.
2. **Thinning of the Epithelial Lining:** The thinning of the epithelial lining in the urinary tract makes it easier for bacteria to invade and cause infections.
3. **Altered Vaginal pH:** Changes in vaginal pH due to decreased estrogen can disrupt the natural balance of the vaginal microbiota, increasing the risk of UTIs.
4. **Impaired Immune Response:** Aging can weaken the immune system, making it harder for the body to fight off infections.

5. **Increased Postvoid Residual Urine:** Incomplete bladder emptying, which is common in older women, provides a breeding ground for bacteria.
6. **Pelvic Organ Prolapse:** Conditions like pelvic organ prolapse can obstruct urine flow, increasing the risk of UTIs.
7. **Incontinence and Catheter Use:** Incontinence and the use of urinary catheters are more common in older women, both of which are significant risk factors for UTIs.⁶

- **Sexual Hygiene:** Practice good hygiene before and after sex, and avoid spermicides to maintain vaginal flora.
- **Diet:** Eat probiotic-rich foods and consider cranberry supplements to support urinary tract health.
- **Menstrual Hygiene:** Change pads or tampons regularly to prevent bacterial growth during menstruation.

Molecular diagnostics, such as PCR and Next-Generation Sequencing (NGS), provide rapid and precise identification of uropathogens and their resistance profiles. PCR amplifies bacterial DNA for quick detection, while NGS offers detailed insights into the urinary microbiome and antibiotic resistance, enabling targeted treatment strategies.

DIAGNOSIS

Diagnosing cystitis requires a combination of acute-onset symptoms and laboratory detection of uropathogens in the urine. Common pathogens include *E. coli* (75-95%) and other Enterobacteriaceae, *P. mirabilis*, *K. pneumoniae*, and *S. saprophyticus*. Urinalysis and urine culture are essential for accurate diagnosis, with urine culture being the gold standard.

Accurate diagnosis of rUTIs involves a combination of clinical assessment and laboratory tests:⁷

1. **Urine Analysis:** Dipstick tests and microscopy to detect pyuria, haematuria, and bacteriuria.
2. **Urine Culture:** Gold standard for confirming the presence of uropathogens and determining antibiotic susceptibility.

Urine Analysis and Culture

Urinalysis can provide immediate clues about the presence of an infection, such as pyuria (white blood cells in the urine) and bacteriuria. However, urine culture remains the definitive method for diagnosing UTIs, as it identifies the specific causative organism and its antibiotic sensitivities. Despite the financial and time costs associated with urinary cultures, they are essential for guiding appropriate treatment.

Management

Effective management of rUTIs includes both pharmacological and non-pharmacological approaches:

Non-Pharmacological Approaches:

- **Hydration:** Increasing fluid intake helps flush out bacteria from the urinary tract.
- **Cranberry Products:** May prevent bacterial adhesion to the urinary tract.
- **D-mannose:** A sugar that can prevent bacterial adherence to urothelial cells.
- **Probiotics:** Use of lactobacilli to restore normal vaginal flora and reduce infection risk.
- **Behavioral Modifications:** Practices like proper hygiene, adequate hydration, and voiding after intercourse.

Difficulties and Limitations of Urine Culture

1. Standard agar-based methods have limitations, as many urinary bacteria cannot be grown on agar gel.
2. Clinically significant bacteriuria has traditionally been defined as 10⁵ CFU/mL. This threshold was set to reduce the chances of detecting contaminants in asymptomatic individuals.

Personal Hygiene Factors that Help Prevent Recurrent Urinary Tract Infections (RUTIs)

- **Proper Cleaning:** Clean the genital area with mild soap, washing front to back to prevent bacterial spread.
- **Frequent Urination:** Urinate regularly, especially after sex, to flush out bacteria and reduce UTI risk.
- **Hydration:** Drink plenty of water to dilute urine and promote frequent urination, flushing bacteria from the urinary tract.
- **Breathable Clothing:** Wear cotton underwear and loose clothing to keep the genital area dry and prevent bacterial growth.
- **Avoid Irritants:** Avoid scented products and harsh soaps in the genital area to prevent irritation and infection.

2. Antibiotic Therapy:

- **Acute Treatment:** Short-course antibiotics for treating acute UTI episodes.
- **Prophylaxis:** Continuous or post-coital antibiotics for women with frequent recurrences, tailored based on culture results. Commonly used antibiotics are discussed in Table 2.

3. Hormonal Therapy:

- **Topical Estrogen:** Applied in postmenopausal women to restore vaginal flora and reduce the risk of UTIs.

Table 2: Commonly Used Antibiotics for UTIs

Antibiotic	Use	Considerations
Nitrofurantoin	Uncomplicated cystitis	Minimal impact on normal flora, effective for uncomplicated cases.
Trimethoprim-Sulfamethoxazole	Uncomplicated cystitis	Increasing resistance, effective against many pathogens.
Fosfomycin	Uncomplicated cystitis	Single-dose therapy is convenient and effective.
Fluoroquinolones	Complicated cases	Broad spectrum, reserved for complicated UTIs due to resistance potential.

Preventive Antibiotic Strategies

For women with frequent recurrent UTIs, preventive antibiotic strategies may be considered. These include:

- 1. Post-Coital Prophylaxis:** For women whose illnesses are brought on by sexual activity, one dosage of an antibiotic administered following a sexual encounter can help to avoid urinary tract infections.
- 2. Continuous Low-Dose Prophylaxis:** A low dose of an antibiotic taken daily or three times a week can help prevent recurrent UTIs.
- 3. Intermittent Self-Start Therapy:** Women who recognize the early symptoms of a UTI can start a short course of antibiotics without waiting for a doctor's visit.

Prevention

Prevention strategies focus on reducing risk factors and modifying behaviors:

- 1. Lifestyle Changes:** Increased fluid intake, voiding regularly, and maintaining good personal hygiene.
- 2. Sexual Practices:** Urinating before and after intercourse, avoiding spermicides.
- 3. Prophylactic Measures:** Use of non-antibiotic prophylaxis and judicious use of antibiotics.

Judicious Use of Antimicrobials in Uncomplicated and Recurrent UTIs

Judicious antimicrobial use is crucial in managing uncomplicated and recurrent UTIs to prevent antibiotic resistance.⁸ For uncomplicated UTIs, short-course antibiotic regimens based on local susceptibility patterns are recommended to minimize antibiotic exposure. In rUTIs, antibiotic prophylaxis should be considered only after non-antibiotic measures have failed, with therapy tailored to the patient's history and pathogen profile. Molecular diagnostics can aid in selecting targeted antibiotics, reducing the use of broad-spectrum agents. Implementing antimicrobial stewardship programs further ensures appropriate antibiotic prescribing, optimizing UTI management, and preserving treatment efficacy.

Antibiotic Stewardship

Antibiotic stewardship programs aim to optimize the use of antibiotics to combat the rise of antibiotic resistance. Key strategies include:

- 1. Education:** Educating healthcare providers and patients about the appropriate use of antibiotics and the risks associated with misuse.
- 2. Guideline Adherence:** Encouraging adherence to evidence-based guidelines for the treatment of UTIs.
- 3. Surveillance:** Monitoring antibiotic resistance patterns to inform treatment decisions and update guidelines as needed.
- 4. Infection Control:** Implementing measures to prevent the spread of resistant bacteria in healthcare settings.⁹

DISCUSSION

Recurrent UTIs are a global issue for women, with 50-60% experiencing a UTI in their lifetime and 20-30% developing recurrent infections. While poor sanitation and socioeconomic factors are prominent in India, *Escherichia coli* remains the leading pathogen worldwide. However, Indian studies report higher rates of *Klebsiella pneumoniae* and *Proteus mirabilis*. Antibiotic resistance is a growing challenge, particularly in India due to over-the-counter availability and self-medication. Both Western and Indian guidelines emphasize non-antibiotic prophylaxis and hormonal therapy for postmenopausal women, with global research focused on innovative treatments like vaccines and microbiome modulation.

CONCLUSION

Comparative studies highlight both commonalities and regional differences in the epidemiology, risk factors, microbiological profiles, and management of RUTIs in women. While the global burden of RUTIs is significant, tailored approaches that consider local epidemiology and resistance patterns are crucial for effective management. Continued research and international collaboration are essential to develop innovative and region-specific strategies to improve patient outcomes and reduce the recurrence of UTIs.

FUTURE DIRECTIONS

Research into new diagnostic methods, treatments, and preventive measures is essential to address the challenges posed by RUTIs and antibiotic resistance. Potential areas of exploration include:

- 1. Vaccines:** Vaccines for common recurrent UTIs are still in development, but the oral vaccine MV140 has shown promising efficacy in studies, suggesting it could be recommended in the future.¹⁰

2. **Phage Therapy:** Using bacteriophages to target and kill specific bacterial pathogens without affecting normal flora.
3. **Novel Antimicrobials:** Discovering and developing new antibiotics with unique mechanisms of action to overcome resistance.
4. **Microbiome Modulation:** Exploring ways to manipulate the urinary and vaginal microbiomes to prevent infections.

KEY POINTS

1. **Prevalence:** UTIs are common in women, with 50-60% experiencing one in their lifetime; 20-30% will have recurrent UTIs (RUTIs).
2. **Causative Agent:** Escherichia coli is the primary pathogen for UTIs.
3. **Risk Factors:** Frequent sexual activity, spermicide use, postmenopausal changes, genetic predispositions, and urological abnormalities increase RUTI risk.
4. **Diagnosis:** Confirm with urinalysis and urine culture; molecular diagnostics (PCR, NGS) offer rapid, precise pathogen identification.
5. **Management:** Use tailored antibiotics, consider non-antibiotic measures (hydration, cranberry products, probiotics), and practice behavioral modifications. Hormonal therapy can help postmenopausal women.
6. **Antibiotic Stewardship:** Essential to prevent resistance through judicious use and culture-guided prophylaxis.
7. **Future Directions:** Research is focused on vaccines, phage therapy, novel antimicrobials, and microbiome modulation.
8. **Comparative Insights:** Regional differences in risk factors and resistance patterns necessitate tailored treatment approaches.

BIBLIOGRAPHY

1. Abou Heidar, N.F., et al., Management of urinary tract infection in women: A practical approach for everyday practice. *Urol Ann*, 2019. 11(4): p. 339-346.
2. Sihra, N., et al., Nonantibiotic prevention and management of recurrent urinary tract infection. *Nature Reviews Urology*, 2018. 15(12): p. 750-776.
3. Muhammad, A., et al., Prevalence and antibiotic susceptibility pattern of uropathogens in outpatients at a tertiary care hospital. *New Microbes New Infect*, 2020. 36: p. 100716.
4. Naber, K.G., G. Bonkat, and F.M.E. Wagenlehner, The EAU and AUA/CUA/SUFU Guidelines on Recurrent Urinary Tract Infections: What is the Difference? *European Urology*, 2020. 78(5): p. 645-646.
5. Gbinigie, O.A., et al., Diagnostic value of symptoms and signs for identifying urinary tract infection in older adult outpatients: Systematic review and meta-analysis. *J Infect*, 2018. 77(5): p. 379-390.
6. Mody, L. and M. Juthani-Mehta, Urinary tract infections in older women: a clinical review. *Jama*, 2014. 311(8): p. 844-54.
7. Chakraborty, D., et al., Diagnostic validation study of rapid urinary tract infection diagnosis kit at peripheral health facilities of West Bengal, India. *Scientific Reports*, 2024. 14(1): p. 297.
8. Akhtar, N., Rahman, R., Sultana, S., & Rahman, M. R. (2017). Antimicrobial Sensitivity Pattern of Bacterial Pathogens Associated with Urinary Tract Infection. *Delta Medical College Journal*, 5(2), 57–62.
9. Bankar NJ, Ugemuge S, Ambad RS, Hawale DV, Timilsina DR. Implementation of Antimicrobial Stewardship in the Healthcare Setting. *Cureus*. 2022 Jul 8;14(7):e26664.
10. Nickel JC, Kelly KL, Griffin A, et al. MV140 sublingual vaccine reduces recurrent urinary tract infection in women Results from the first North American clinical experience study. *Can Urol Assoc J*. 2024 Feb;18(2):25-31.

AOGD Risk Management Support (ARMS) Group

One of the ways to ensure stress-free work environment and optimal patient care is mutual support among professional colleagues. An advisory group was set up last year so that they can be contacted if any of us is caught in a complex clinical dilemma/dealing with aggressive clients or is apprehensive about how to document or effectively troubleshoot a potential problem. The same group will continue to provide timely advice and is led by

Convener – Dr. Vijay Zutshi – 9818319110

Co-convener – Dr. Aruna Nigam – 9868656051

We invite suggestions from all members regarding functioning of this cell which will guide us forming the SOPs. Please mail to aogd.ucmsgtbh2023@gmail.com

Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS)

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INTRODUCTION

Interstitial cystitis/Bladder Pain Syndrome (IC/BPS) is a chronic pain condition characterized by pain or discomfort in the bladder area with one or more irritating urinary symptoms like daytime frequency, urgency, and nocturia that can have a profound detrimental impact on quality of life.¹

The etiology of IC/BPS is not known, the pathophysiology is unclear and the presentation and response to treatment is highly variable. There are no validated urinary markers, no specific radiographic, laboratory, or serologic findings; and no biopsy patterns that are pathognomonic for interstitial cystitis. As a result, the syndrome remains a diagnosis of exclusion with no universally effective treatment. The management usually involves various supportive, behavioral, and pharmacologic measures. Surgical intervention is rarely indicated.

THE NOMENCLATURE

The term Interstitial Cystitis (IC) is a misnomer as it directs attention only to the urinary bladder and its inflammation. It does not take into account patients with typical IC symptoms but normal cystoscopic and histological findings. There is no clear evidence that bladder inflammation (cystitis) is always involved in the etiology or pathophysiology of the condition, also, there is no evidence that the condition is reliably associated with abnormalities of the interstitium of the bladder. IC patients may have the syndrome without any evidence of inflammation of the deeper layers of the bladder, there may be a reflection of pathological conditions outside the bladder, sometimes far away from it.²

Therefore, the term Bladder Pain Syndrome (BPS), introduced by the European Society for the Study of Interstitial Cystitis (ESSIC),³ seems to be more appropriate which includes pain in the region of the bladder and the diagnosis should be made based on a specific combination of symptoms and signs of BPS after exclusion of confusable diseases.

DEFINITION

European Society for the Study of IC/BPS (ESSIC) in 2008⁴ Pelvic pain, pressure, or discomfort perceived to be related to the bladder, lasting at least 6 months, and accompanied by at least one other urinary symptom, for example, persistent urge to void or frequency, in the absence of other identifiable causes.

Global IC/BPS Society India (GIBS)⁵

Pain and/or discomfort in the lower abdomen and/or urogenital area of more than 3 months duration, which is usually worse on full bladder, along with one or more lower urinary tract irritative symptoms like frequency, urgency, and nocturia, with or without stigmata on cystoscopy, provided that any other discernible pathology mimicking these symptoms has been excluded.

American Urological Association⁶

American Urological Association guidelines, use the following definition for the diagnosis of interstitial cystitis/bladder pain syndrome (IC/BPS): "An unpleasant sensation (pain, pressure, discomfort) perceived to be related to the urinary bladder, associated with lower urinary tract symptoms of more than six weeks duration, in the absence of infection or other identifiable causes"

Pain associated with bladder filling and relieved by bladder emptying and pelvic tenderness on examination are characteristic features that further support the diagnosis when no other cause has been found.⁷

PREVALENCE

Interstitial cystitis is relatively uncommon. A large American study⁸ found prevalence rates of 2.3–6.5% but the reported prevalence is likely to be an underestimate due to varied diagnostic criteria. BPS is between two to five times more common in women than men.⁹ Median age at presentation is 40 years.¹⁰ However, it is also seen in children.

ETIOLOGY

The etiology of interstitial cystitis remains unknown and is likely multifactorial. Proposed etiologies include the following:

- Infection with a poorly characterized agent (eg, a slow-growing virus or an extremely fastidious bacterium)
- Toxic substance production in the urine
- Manifestation of pelvic floor muscle dysfunction or dysfunctional voiding
- Autoimmune disorder
- a partial genetic predisposition¹¹

Some common associations:

- History of gynecologic surgery, urinary tract infections, or childhood bladder problems.
- Association with some chronic diseases and autoimmune conditions such as irritable bowel syndrome, vulvodynia, fibromyalgia, SLE, Atopic allergy, and Sjögren syndrome.
- Psychiatric conditions like anxiety disorder, depression, and adjustment reactions.

Pathophysiology

The pathophysiology of interstitial cystitis /BPS is not well understood. The clinical syndrome of urinary frequency, urgency, and pelvic pain may be a representation of several as yet undefined, disparate pathologic conditions such as:

- Deficiency in the glycosaminoglycan layer on the luminal surface of the bladder, resulting in increased permeability of the underlying submucosal tissues to toxic substances in the urine¹²
- Pathogenic role of mast cells in the detrusor and/or mucosal layers of the bladder
- Dysregulated immune or inflammatory signals
- Neurogenic hypersensitivity or inflammation-mediated locally at the bladder or spinal cord level¹³

Subgroups of Interstitial cystitis

Based on findings at cystoscopy, Interstitial cystitis is often divided into two distinct subgroups, the **ulcerative** and the **nonulcerative** types. Clinical presentation is variable, with ulcerative patients presenting with more bladder symptoms like frequency, nocturia, and lower bladder capacity, indicating that it may be more of a condition of the bladder. On the other hand, nonulcerative patients tend to have a more diffuse pain syndrome with multiple systemic complaints. Such differences have important implications for diagnosis and therapy.

Evaluation

A high clinical index of suspicion is the key to diagnosis, at the same time, it's important not to over diagnose this

condition. All the following pathologies that mimic the above-mentioned symptoms must be carefully excluded.

- **Bladder diseases:** Overactive bladder, neurogenic bladder, benign or malignant bladder tumour, bladder calculus, radiation cystitis, chemotherapy-induced cystitis (Cyclophosphamide, ketamine, etc.)
- **Urethral diseases:** Urethral diverticulum, urethral stricture
- **Genitourinary infections:** Bacterial cystitis, tubercular cystitis, urethritis,
- **Gynaecologic diseases:** Chronic pelvic inflammatory diseases, active genital herpes, vaginal candidiasis Endometriosis, uterine myoma, vaginitis, climacteric disturbance, uterine/ cervical/ vaginal cancer, Polyuria, pelvic floor muscle spasm, vulvodynia, vestibulodynia, pelvic congestion syndrome.

History

Pain / Discomfort

- There is a persistent unpleasant sensation related to the bladder, of which the most consistent feature is an increase in discomfort with bladder filling and relief with voiding.
- Bladder symptoms are usually described as painful but can include pressure, discomfort, or spasms. Symptoms may vary over time from mild to severe. The pain or discomfort is usually in the suprapubic or urethral area although it could be in the lower abdomen or lower back with bladder filling.
- Symptoms are usually gradual in onset but could be abrupt or severe from their onset. Sometimes a preceding event may be identified.
- Exacerbation of symptoms may occur after intake of certain foods or drinks, during stress, after certain activities like exercise, sexual intercourse, prolonged sitting, or during the secretory phase of the menstrual cycle.

Urinary symptoms

Patients can report frequent voiding. However, in contrast to patients with overactive bladder syndrome where the reason to void frequently is to avoid urinary incontinence, patients with IC/BPS void frequently to maintain low bladder volumes to avoid discomfort with a distending bladder. In extreme cases, patients may describe sitting on a toilet for hours to let urine dribble from their bladders more or less continuously so that bladders remain as empty as possible and pain is minimized. Other urinary symptoms include urinary urgency and nocturia. IC/BPS is not commonly associated with urinary incontinence.

Associated histories of:

- Prior pelvic surgery
- Urinary infection or calculus
- Pelvic inflammatory disease

- Pelvic radiation
- Infertility
- Endometriosis
- Neurological disease
- H/o allergies/ bronchial asthma /Seasonal hay fever/ drug allergies/urticaria
- H/o of pelvic floor spasm
- Burning character of pain suggestive of neuropathic pain
- Recent changes in diet, like health drinks, excessive tea/ green tea/ coffee/ dark chocolates, or something else that the patient wasn't used to earlier.
- Recent drug treatment for an unrelated disease
- Fibromyalgia
- Migraine
- Mental stress
- Irritable Bowel syndrome

Examination

1. General examination
 - The dismal look
 - Gait
 - Mental state
 - Somatic signs of anxiety like pallor, sweating, etc.
2. Abdominal examination
 - Scars of previous surgeries
 - Any abdominal masses
 - Tenderness in the abdomen, mainly suprapubic or any other area
3. Local examination

Pelvic examination- inspection, per speculum, and digital examination

 - Areas of tenderness in the lower abdomen
 - Pelvic floor muscle tone
 - Trigger points
 - Myofascial bands
4. Focused neurological examination if indicated

Investigations

- At least a one-day Frequency Volume Chart to get a fair idea about the function of the urinary bladder.
- Ultrasonography of the pelvis and KUB to exclude pelvic pathologies and to rule out high residual urine
- Urinalysis in all patients but Urine culture when urinalysis is suggestive of Urinary Tract infection.
- Urine cytology in case of chronic smoking, microhaematuria, and persistent irritative lower urinary tract symptoms with no response to initial treatment

- Symptom scoring and Quality of Life scores
- Urodynamic studies in selected patients
- Cystoscopy: According to the American Urology Association, cystoscopy may not be mandatory to make the diagnosis of IC/BPS.¹⁴ The European Association of Urology (EAU) guidelines,¹⁵ the Japanese guidelines,¹⁶ and the Global Interstitial Cystitis and Bladder Pain Syndrome Society (GIBS)¹⁷ include cystoscopy as an essential part of the diagnostic pathway of these patients. Cystoscopy has a definite role in excluding other aetiologies and in further evaluating patients who do not respond to initial therapy. It also offers an opportunity for hydro distension and cystoscopic treatment of intravesical lesions including Hunner lesions.¹⁸ Cystoscopy may also serve to further phenotype these patients and help in planning specific treatment.
- Bladder biopsy: Biopsies should be considered to exclude carcinoma in situ and tuberculous cystitis, when there is clinical suspicion.

Treatment Guidelines

As the etiology of this chronic pain condition is uncertain, there is no definitive treatment, or cure and the aim of management is to provide symptomatic relief to achieve a good quality of life. There are many therapeutic approaches for IC/BPS, but none has been proven to be helpful for all patients.¹⁸

There is a lack of high-quality data to support one treatment over another. The treatment plans are developed using shared decision-making based on individual patient characteristics, including symptom severity and progression and earlier response to treatments taken.¹⁰

To Follow for All Patients¹⁹

1. Patient education: explain the following
 - What is the normal bladder function
 - What is BPS/IC.
 - Natural history of remissions and exacerbations
 - How to avoid flares
 - Benefits and risks of available treatment options
 - No curable single treatment available
 - Realistic expectations from the treatment
2. Self-care and lifestyle modification
3. Timed voiding
4. Controlled fluid intake
5. local application of hot or cold compression over the bladder or perineum.
6. Bladder training
7. Exercises: Pelvic floor muscles relaxation exercises, stretching exercises, hyperbaric oxygen, stress reduction techniques, managing working hours
8. Support groups for patients

9. Diet manipulation: Avoiding dietary triggers, acidic beverages, tea, coffee, soda, spicy food, artificial sweeteners, and alcohol.
10. Psychosocial support
11. Treat superimposed or existing acute and chronic illnesses like bladder infections and gastrointestinal problems.

Different Modalities of Treatment

1. Physical therapy for patients with pelvic floor muscle tenderness²⁰

Pelvic physical therapy includes treatment of the pelvic muscle tender points and trigger points. Pelvic floor strengthening exercises (eg, Kegel exercises) may exacerbate pelvic pain symptoms and this should be avoided.

2. Pharmacotherapy

In addition to the above initial measures, many patients will also require pharmacotherapy. For occasional symptom flares, only analgesics suffice. However, for patients with frequent flares, or in whom symptoms are more severe, oral medications should be used as initial pharmacotherapy. Initiation of oral therapy must be individualized, keeping in mind, the severity of symptoms, the frequency of flares, patient preference, and the potential adverse effects. Some patients may require a combination of drugs. However, clinicians should be aware of polypharmacy risks and should consider discontinuing medications that have not provided clear improvement.

Oral medications:

Analgesics

- Analgesics such as nonsteroidal anti-inflammatory drugs and Acetaminophen are the first line. Tramadol and other narcotics are other options.
- In addition, an oral urinary analgesic like Phenazopyridine may be used for short-term relief of urinary symptoms, either alone or in combination with NSAID. As it has been associated with methemoglobinemia, its long-term use is avoided. Other complications such as renal or liver dysfunction have also been observed with prolonged use.
- Intravesical instillation of drugs may be considered in patients who experience an acute episode of severe bladder pain,

Antihistamines for patients with allergic disorders

- **Hydroxyzine:** The most commonly used antihistamine for the treatment of IC/BPS. The typical dose is 25 to 50 mg at bedtime. It is usually well tolerated but may cause sedation or dizziness. The sedative qualities may be helpful in patients who complain of insomnia due to nocturia.

- **Montelukast:** More data needed

Other oral medications

- Neuropathic pain agents – Gabapentin and Pregabalin
- Cimetidine – Limited data to support its use.
- Sildenafil – Limited data to support its use.
- Amitriptyline: 10-75 mg/day or Nortriptyline
- Hydroxyzine: 25-75 mg /day useful in patients with allergies.
- Pentosan polysulfate 300mg/day, takes 3-6 months for optimum response
- Others: Azathioprine, Cyclosporine (3 mg/kg/day)

Assessing response to initial therapy

Patients should be reviewed in two or three months after initiation of treatment or earlier if needed. Patients often require several treatment trials of different modalities before achieving substantial symptom improvement. However, the diagnosis of IC/BPS should be reconsidered if no improvement occurs after several trials of differing therapies. In such cases, referral to a urologist and cystoscopy are appropriate.

Other treatment modalities in patients with refractory symptoms

- Cystoscopy- Low-pressure short-duration hydro distention. The beneficial effect is possibly due to the disruption of sensory nerves within the bladder wall. Treatment of Hunner's lesions can be done at the same time.²¹ Hydrodistension is expected to work by disrupting the nerve endings carrying the pain fibers, thus breaking the pain > inflammation > pain cycle.²²
- Intravesical therapies- Intravesical drugs are administered due to poor oral bioavailability establishing high drug concentrations at the target, with few systemic side-effects. Disadvantages include the need for intermittent catheterization, which can be painful in BPS patients, cost, and risk of infection.

In Pregnancy, Intravenous heparin is considered a safe option. Although one course of DMSO may be used before pregnancy for symptom remission with good pregnancy outcomes. DMSO is known to be teratogenic in animal studies. It is typically used for symptom flares.

Various Cocktail Therapies for intravesical instillation use Marcaine, Lidocaine jelly, Heparin, Triamcinolone, Hydrocortisone, Sodium bicarbonate, Kenalog, Solucortef and Dexamethasone in different combinations and proportions.

- Intradetrusor botulinum toxin (BoNT) – Because of the risk of urinary retention, which may be particularly problematic for a patient with a painful bladder. Any patient considering this treatment must be willing and able to perform intermittent self-catheterization.

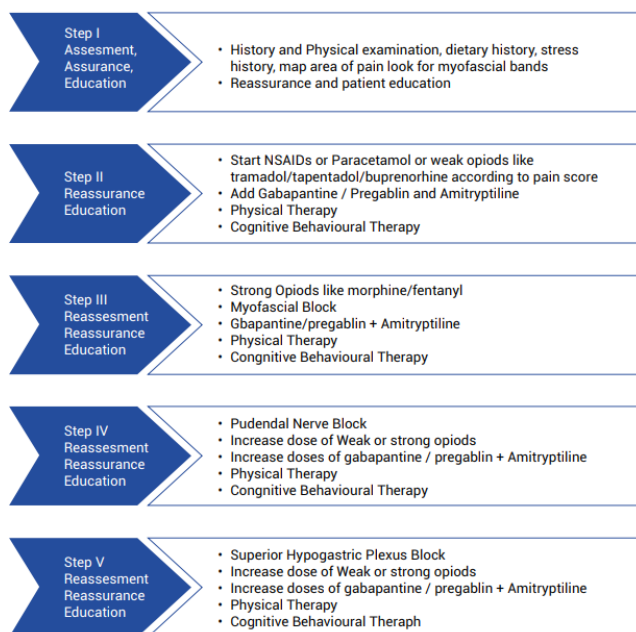
- Sacral neuromodulation – Neuromodulation is a surgical procedure that has not been well studied for the treatment of IC/BPS.
- Cyclosporine A – Use of this agent is limited by potential adverse effects.
- Surgery- Urinary diversion, augmentation cystoplasty, cystectomy.

A surgical procedure is the last resort for interstitial cystitis/bladder pain syndrome (IC/BPS) due to substantial perioperative and ongoing morbidity. The procedure is reserved for patients who meet the following criteria:

- (a) Symptoms significantly affect quality of life
- (b) All other IC/BPS therapies have failed
- (c) Other etiologies of symptoms have been excluded
- (d) Patient requests surgery for relief of symptoms despite the risks and accepts lifestyle changes associated with the procedure

Appendix 1⁵ - Stating the pain management protocol recommended by WHO

Pain management Protocol in IC/BPS



<https://gibsociety.com/wp-content/uploads/2021/09/GIBS-Guidelines-book-2.0.pdf>

CONCLUSION

Interstitial cystitis or bladder pain syndrome, is a chronic debilitating condition characterized by recurring pain or discomfort in the pelvis and bladder area. The symptoms may vary in severity and impact daily life. The exact cause of BPS is not known but it is believed to involve a combination of various factors like bladder lining defects, immune dysfunction, nerve sensitivity, etc. While there is no cure for BPS, various treatments like bladder instillation, oral medication, lifestyle changes, physical therapy, etc can

help manage the symptoms. Early diagnosis and treatment can significantly improve symptoms and quality of life for those affected by BPS.

KEY POINTS

1. Interstitial cystitis is a chronic debilitating condition with recurring pain and discomfort in the pelvis or bladder area
2. The etiology of IC/BPS is not known, the pathophysiology is unclear and the presentation and response to treatment is highly variable.
3. There are no urinary markers or specific radiographic, laboratory, or serologic findings; and no biopsy patterns that are pathognomonic for interstitial cystitis..
4. There are many options for treatment but most of them lack high-level evidence.
5. Treatment varies from conservative therapy to the most invasive option i.e. cystectomy and urinary diversion in an end-stage small fibrotic bladder.
6. Often a multi-modal treatment approach is advised.
7. Ineffective therapy is to be stopped after a reasonable time and diagnosis is to be reconsidered if there is no benefit even after multimodal therapy.
8. Avoid long-term antibiotics and oral steroids.

REFERENCES

1. Koziol JA. Epidemiology of interstitial cystitis. Urol Clin North Am 1994; 21:7.
2. Wyndaele JJ. Evaluation of patients with painful bladder syndrome/interstitial cystitis. ScientificWorldJournal. 2005;5:942–9
3. An de Merwe JP, Nordling J, Bouchelouche P, et al. Diagnostic criteria, classification, and nomenclature for painful bladder syndrome/interstitial cystitis: an ESSIC proposal. Eur Urol. 2008;53(1):60–7.
4. van de Merwe JP, Nordling J, Bouchelouche P, et al. Diagnostic criteria, classification, and nomenclature for painful bladder syndrome/interstitial cystitis: an ESSIC proposal. Eur Urol 2008;53:60–7.
5. <https://gibsociety.com/wp-content/uploads/2021/09/GIBS-Guidelines-book-2.0.pdf>
6. American Urological Association. Diagnosis and treatment of interstitial cystitis/bladder pain syndrome. Linthicum, MD: AUA; 2014.
7. Bogart LM, Berry SH, Clemens JQ. Symptoms of interstitial cystitis, painful bladder syndrome and similar diseases in women: a systematic review. J Urol 2007; 177:450.
8. Konkle KS, Berry SH, Elliott MN, et al. Comparison of an interstitial cystitis/bladder pain syndrome clinical cohort with symptomatic community women from the RAND Interstitial Cystitis Epidemiology study. J Urol 2012;187:508–12.
9. Berry SH, Stoto MA, Elliott M, et al. Prevalence of interstitial cystitis/painful bladder syndrome in the United States. J Urol 2009;181 Suppl 4:20–1.

10. Clemens JQ, Erickson DR, Varela NP, et al. Diagnosis and Treatment of Interstitial Cystitis/Bladder Pain Syndrome. *J Urol* 2022; 208:34.
11. Tunitsky E, Barber MD, Jeppson PC, et al. Bladder pain syndrome/interstitial cystitis in twin sisters. *J Urol* 2012; 187:148.
12. Tunitsky E, Barber MD, Jeppson PC, et al. Bladder pain syndrome/interstitial cystitis in twin sisters. *J Urol* 2012; 187:148.
13. Nazif O, Teichman JM, Gebhart GF. Neural upregulation in interstitial cystitis. *Urology* 2007; 69:24.
14. Hanno PM, Erickson D, Moldwin R, et al. Diagnosis and treatment of interstitial cystitis/bladder pain syndrome: AUA guideline amendment. *J Urol*. 2015;193(5):1545–53.
15. Engeler DS, Baranowski AP, Dinis-Oliveira P, et al; European Association of Urology. The 2013 EAU guidelines on chronic pelvic pain: is management of chronic pelvic pain a habit, a philosophy, or a science? 10 years of development. *Eur Urol*. 2013;64(3):431–9. <https://doi.org/10.1016/j.eururo.2013.04.035>.
16. Homma Y, Akiyama Y, Tomoe H, et al. Clinical guidelines for interstitial cystitis/bladder pain syndrome. *Int J Urol*. 2020;27(7):578–89.
17. Rahnama'i MS, Javan A, Vyas N, et al. Bladder pain syndrome and interstitial cystitis beyond the horizon: reports from the Global Interstitial Cystitis/Bladder Pain Society (GIBS) Meeting 2019 Mumbai—India. *Anesthesiol Pain Med*. 2020;10(3):e101848.
18. Pazin C, de Souza Mitidieri AM, Silva AP, et al. Treatment of bladder pain syndrome and interstitial cystitis: a systematic review. *Int Urogynecol J* 2016; 27:697.
19. Hanno PM, Burks DA, Clemens JQ, et al. AUA guideline for the diagnosis and treatment of interstitial cystitis/bladder pain syndrome. *J Urol* 2011; 185:2162
20. Bassaly R, Tidwell N, Bertolino S, et al. Myofascial pain and pelvic floor dysfunction in patients with interstitial cystitis. *Int Urogynecol J* 2011; 22:413.
21. Dunn M, Ramsden PD, Roberts JB, et al. Interstitial cystitis, treated by prolonged bladder distension. *Br J Urol* 1977; 49:641
22. Nordling J, Wyndaele J, van de Merwe J, Bouchelouche P, Cer vigni M, Fall M. Bladder pain syndrome: a guide for clinicians. New York: Springer; 2013.



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The Overactive Bladder

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INTRODUCTION

Overactive bladder (OAB) is defined¹ as urinary urgency, frequency, nocturia, and urgency urinary incontinence without infection or obvious pathology. OAB and Detrusor overactivity (DO) are sometimes used as interchangeable terms but it needs to be acknowledged that detrusor overactivity (DO) is defined as the occurrence of involuntary contractions during filling cystometry on a urodynamic study, in contrast to OAB. The impact on quality of life is significant, with many suffering before seeking medical advice.² The overall prevalence of OAB stood at 27.4%, with a distribution of 22% among males and 32.4% among females.³ Notably, a significant proportion (51.2%) of OAB cases present with OAB wet, showcasing a peak prevalence of 28% in the elderly cohort (≥ 70 years) and a nadir of 4.5% in the youngest cohort (18-29 years). The prevalence and severity of OAB symptoms tend to increase with age.³ OAB presents a substantial physical, emotional, and financial burden for individuals. OAB symptoms have been associated with significant depressive disorders. This adverse impact is particularly pronounced among older adults (i.e., ≥ 65 years), leading to considerable impairments of quality of life (QOL).²

A whole lot of other conditions can present as OAB like polydipsia, bladder pain syndrome, urinary tract infection (UTI), nocturnal polyuria, genitourinary syndrome of menopause, neurological disorders like stroke, Parkinson's disease, and multiple sclerosis. These should be differentiated from OAB. OAB can be distinguished from excess fluid intake⁴ with a frequency-volume chart. Interstitial cystitis/bladder pain syndrome shares symptoms of urinary frequency and urgency, with or without urge urinary incontinence (UUI), along with bladder/pelvic pain including dyspareunia.⁵ Other conditions can contribute to OAB symptoms. For example, the genitourinary syndrome of menopause can be a factor in urgency and incontinence symptoms in menopausal patients. UTI may have similar symptoms as OAB but is generally acute in onset and resolved with antibiotics. LUTS related to neurological conditions are considered neurogenic lower urinary tract dysfunction and not idiopathic OAB.⁶

Pathophysiology

Urinary continence relies on an intricate interplay between autonomic and somatic nerves, which converge at various levels in the spinal cord, brainstem, midbrain, and higher cortical centres. The harmonious synchronization of the central and peripheral nervous system network enables the bladder to fill and store urine at low pressure with high-outlet resistance while facilitating voiding with low-outlet resistance and sustained detrusor (bladder wall muscle) contraction.

Most cases of OAB are idiopathic with unknown pathophysiology but several hypotheses have been proposed.

- 1. Myogenic theory:** It implicates malfunction of detrusor smooth muscle leading to microcontractions⁷ and thereby detrusor contractions.
- 2. Neurogenic theory:** According to this, the dysfunction in central and/or peripheral nervous regulation of the bladder notably nerve fibre degeneration within the bladder wall has been a prominent feature of Detrusor Overactivity (DO).
- 3. Urothelium theory:** A pathological involvement of the urothelium has been proposed, characterized by increased release of mediators like ATP during bladder filling. Increased ATP release from the urothelium during stretching has been observed in isolated bladder tissues from patients with idiopathic and neurogenic OAB. This ATP release occurs early during filling in both normal individuals and those with DO, with higher levels noted in women with DO.⁸

Pathophysiological factors in OAB/DO

- Aging contributes to detrusor fibrosis, reduced bladder compliance, and detrusor overactivity in OAB/DO patients through changes in neurotransmission and blood flow with ischemia-inducing inflammatory responses.
- Bladder outlet obstruction (BOO) leads to hypertrophy of detrusor, fibrosis, proliferation of smooth muscle,

and abnormal functioning of urothelial, causing cyclical ischemia, free radical generation, tissue injury, and inflammation, evidenced by elevated levels of pro-inflammatory cytokines.

- Obesity and metabolic syndrome may affect bladder function in OAB/DO patients through inflammatory mediators and cytokines.
- Psychological stress triggers detrusor hypertrophy, enhanced bladder contractile responses, afferent hypersensitivity, and inflammatory responses via the release of corticotropin-releasing factor (CFR) and catecholamines, leading to the release of cytokines.
- Undetected low-level bacterial infections can contribute to refractoriness to conventional anticholinergic therapy in up to 39% of patients, causing changes in bladder function independent of detrusor effects by enhancing sensory responses to bladder filling and recruiting previously silent afferent fibres.

Evaluation

A meticulous medical history, thorough physical examination, and urinalysis are indispensable parts of the assessment of all patients presenting with suspected OAB.⁹ Furthermore, it is imperative to conduct urine culture and sensitivity tests, estimate Postvoid residual urine (PVR), and have patients maintain a 3-day bladder diary for a meticulous diagnosis. Procedures such as ultrasonography, cystoscopy, and urodynamic studies (UDS) are not considered standard procedures for the initial evaluation of uncomplicated OAB cases.¹⁰

A few important history talking points -

- Characterize the nature and severity of lower Urinary Tract Symptoms (LUTS), excluding visible hematuria or other symptoms indicative of organic bladder pathology. Relevant urinary symptoms encompass frequency, volume, severity, hesitancy, triggers, nocturia, stream characteristics, incomplete emptying, continuous leakage, and voiding difficulties.
- Consider the patient's lifestyle, including their consumption of caffeine and alcohol.
- Look for symptoms that suggest prolapse, neurological conditions, bowel and sexual dysfunction, including urinary incontinence related to sexual activity.
- Take into account any comorbid conditions, concurrent medications, and cognitive and functional abilities assessment.
- If need to carry pads, tissues, or cloth in your undergarments to manage urine? (assesses the severity of symptoms)
- Body Mass Index (BMI) assessment
- Physical examination- A thorough general physical, pelvic, and neurological examination is required. In the pelvic examination, additional attention is to be given to pelvic floor muscle integrity, features of vaginal atrophy, pelvic masses, and advanced pelvic organ prolapse beyond the hymen.

- A detailed neurological assessment is not mandatory in the initial evaluation of all women with incontinence unless there is a sudden onset of symptoms or new neurological manifestations.
- Questionnaires are the most practical and systematic approach to gathering essential information. These tools enable the quantification of the presence, severity, and bothersomeness of symptoms. Some of the questionnaires include the International Consultation on Incontinence Questionnaire (ICIQ), International Consultation on Incontinence Questionnaire- Urinary Incontinence Short Form (ICIQ UI SF), Incontinence Impact Questionnaire (IIQ 7), etc.
- Bladder diary
- Voiding diaries are beneficial in assessing urinary incontinence symptoms. It can help identify any association with high fluid intake. Additionally, they offer a measure of the problem's severity that can be monitored over time. Voiding diaries also establish the maximum bladder capacity and the time interval a person can reasonably wait between voids, aiding in bladder training. A normal voiding frequency is less than eight times a day with one nighttime void, totaling less than 1800 mL per 24 hours.

Lab evaluation

- Routine urinalysis and culture to detect infections, hematuria, and specific gravity (changes indicating dehydration or excessive fluid intake).
- Measurement of Post Void Residual urine (PVR) - useful when the diagnosis is uncertain, initial treatment is ineffective, or in cases of suspected urinary retention and/or overflow urinary incontinence.
- Urodynamics - American Urological Association (AUA)¹⁰ discourages the initial use of urodynamics in uncomplicated cases unless there is neurological or voiding dysfunction. Cystometry is recommended before starting invasive treatments for drug-resistant overactive bladder syndrome. Video urodynamics can be considered if the diagnosis remains unclear, as it provides crucial anatomical insights into bladder and bladder neck appearance.

Treatment Options

Treatment as per the latest guideline¹⁰ released by the AUA in 2024 recommends against the "step therapy" approach and stresses the significance of collaborative decision-making between the clinician and the patient with OAB to determine the most suitable therapy or combination of therapies based on the patient's needs, preferences, and tolerance to side effects. To eliminate the notion of "step therapy," the Panel has categorized OAB treatment options based on their invasiveness rather than specific sequence.

Eight treatment categories¹⁰

1. Incontinence management strategies: Products like diapers, pads, liners, absorbent underwear, and barrier creams for coping with urinary incontinence. Focuses on improving quality of life and minimizing the impact of leakage, rather than treating or preventing incontinence episodes
2. Behavioural therapy: Behavioral measures for OAB are effective, safe, and low-cost (Table 1). Implementation of behavioral therapies relies on patient acceptance, adherence, and compliance. Reinforcement, follow-up visits, and reminders help maintain therapy effects.

Table I: Behavioral Intervention

Bladder training/timed voiding
Fluid management (e.g., fluid restriction at night, avoiding polydipsia)
Caffeine reduction
Physical activity/exercise
Dietary modification (e.g., low fat, high fruit/vegetable, whole grain)
Mindfulness

3. Optimization of co-morbidities: Medical conditions like constipation, use of diuretics, obesity, diabetes mellitus, genitourinary syndrome of menopause, pelvic organ prolapse (POP), and tobacco abuse known to impact the severity of OAB, should be addressed.
4. Non-invasive therapies: Non-invasive therapies (Table 2) are conservative treatments that necessitate patient involvement. These interventions may involve one or more active external devices, or supervised therapies but do not involve pharmaceuticals or surgical procedures.

Table II: Non Invasive therapy

PMFT/ Pelvic floor muscle therapy (e.g., urge suppression, muscle strengthening)
Magnetic stimulation
Transcutaneous electrical stimulation
Transvaginal electrical stimulation
TTN transcutaneous tibial nerve stimulation
Yoga
Hypnosis

Pelvic floor muscle exercises are based on the principle of resistance training and entail the contraction and relaxation of the pelvic floor muscles. These contractions effectively enhance the strength and tonicity of the pelvic floor muscles. They play a crucial role in managing urge incontinence by inhibiting detrusor contractions either reflexively or voluntarily through the tightening of the pelvic floor muscles. It consists of 3 sets of 8-12 contractions held for 6-8 seconds each, to be performed 3-4 times

weekly, and to be continued for a minimum of 20 weeks.

Magnetic stimulation of Pelvic floor muscles- Utilizes magnetic stimulation of the pelvic floor muscles through the application of a vaginal or anal electrode is a viable option for women who encounter difficulties in voluntarily engaging these muscles.

Transcutaneous Tibial Nerve Stimulation, a variant of PTNS, is reserved for patients unable to attend in-office sessions.

The evidence for non-invasive therapies varies. Safety profiles are mostly excellent with few adverse effects. Efficacy varies among therapies. These treatments can be costly and require specialized professionals or devices. Long-term patient compliance is necessary for lasting effects.

5. Pharmacologic therapy: Adding medications in cases where individuals do not exhibit adequate responses to non-pharmacological interventions, will improve patients' QOL. Pharmacotherapy (Table 3) provides advantages in combination with behavioural therapy. The most commonly used drugs and their side effect will be discussed. Drugs used include anticholinergic/ antimuscarinic agents- These medications function by suppressing involuntary detrusor contractions or overactivity during the bladder's filling/storage phase, thereby reducing sensory signals and increasing both bladder capacity and compliance. There are two major categories of antimuscarinic drugs tertiary amines and quaternary amines.

Tertiary Amines, such as Oxybutynin, Tolterodine, Solifenacin, and Darifenacin, are more lipophilic than Quaternary Amines, allowing them to traverse the Blood-Brain Barrier more effectively. They are metabolized through the cytochrome P450 enzyme system, necessitating caution in patients concurrently taking other medications due to potential drug interactions.

Quaternary Amines like Trosipium chloride, have lower lipophilicity, limiting their passage across the Blood-Brain Barrier, with the majority being excreted unchanged through the kidneys. Darifenacin is the most selective M3 receptor antagonist among all, displaying a heightened level of selectivity for the M3 receptor over the M2 receptor. The currently available antimuscarinics lack uroselectivity as they exert their effects on muscarinic receptors throughout the body, leading to a range of side effects. These side effects contribute to a discontinuation rate of 25% within one year. While the side effect profile has been a limiting factor, the overall safety profile of anticholinergics remains favorable.

Adverse effects include dry mouth, pruritis, constipation, urinary retention, visual impairment, and tachycardia. Should not be used in patients with untreated narrow-angle glaucoma. Caution should

be exercised in cases of poor gastric emptying, frailty, and cognitive impairment.

Therefore, the treatment with antimuscarinics must be tailored to each individual, it may require some time to achieve the optimal dosage adjustment. If a patient encounters insufficient symptom reduction or intolerable adverse drug reactions with a specific antimuscarinic, then a dosage adjustment or a different antimuscarinic or a Beta-3 adrenergic receptor agonist could be considered as alternatives.

Table III: Comparison of medications available for the management of OAB

Drug	Dose	Uroselective	Adverse effects
Oxybutynin	Oral-5-15mg/day Transdermal-3.9mg twice weekly	No	Dry mouth Constipation
Solifenacin	5-10mg/day	Yes	Dry mouth Constipation Blurred vision
Darifenacin	7.5-15 mg/day	Yes	Dry mouth Constipation
Tolterodine	2 mg twice daily	No	Dry mouth Constipation Abdominal pain
Trospium	20mg twice daily	No	Dry mouth Constipation Dry eyes
Fesoterodine	4-8mg once /day	No	Dry mouth Constipation
Mirabegron	25-50mg/day	No	Hypertension

Beta 3 adrenergic agonists: These drugs bind to beta-3 adrenergic receptors and cause detrusor muscle relaxation by activating adenylyl cyclase. Mirabegron was FDA-approved in 2012 for OAB. The usual dose is 25-50 mg/day. It is an alternative to antimuscarinics with better continuity rates and similar efficacy. β_3 agonists are likely to have a diminished impact on PVR, leading to reduced occurrences of retention and voiding dysfunction. β_3 agonists have potential effects on cardiovascular function, encompassing hypertension, heart rate, and cardiac arrhythmia, and should be cautiously used.

- Minimally invasive treatment: Minimally invasive treatment options for OAB including percutaneous tibial nerve stimulation (PTNS), implantable tibial nerve stimulation, botulinum toxin (BTX), and sacral neuromodulation (SNM) have all been associated with high success rates, durable efficacy, and excellent patient satisfaction.

Percutaneous stimulation of the tibial nerve (PTNS) benefits some patients with detrusor overactivity. A needle is placed behind the ankle for 30 minutes once a week for 12 weeks followed by maintenance therapy to be given once a month. The optimal treatment duration and timing of maintenance therapy are unknown.

The implantable tibial nerve stimulator is a wireless implantable neurostimulation device. The device is surgically implanted close to the posterior tibial nerve during an office procedure.

- Botulinum toxin (BTX): BTX alleviates overactive bladder symptoms resistant to initial treatments like urgency urinary incontinence and detrusor overactivity or bladder dysfunction due to neurological dysfunction. The toxin is injected at 4 to 20 sites throughout the detrusor muscle with either a rigid or flexible cystoscope. Precautions should be taken to avoid inadvertent insertion systemically.

All individuals undergoing intra-detrusor BTX injection are at potential risk of urinary retention, urinary tract infection (UTI), and systemic absorption leading to muscle weakness or respiratory compromise. Urinary retention rates after injection range from 2 to 6 percent. It is important to teach patients intermittent self-catheterization.

Sacral nerve stimulation: Sacral nerve stimulation (SNS) is a minimally invasive surgical option for treating OAB symptoms, not responding to initial interventions. The insertion procedure involves placing a wire lead into the S3 foramen connected to a stimulation device. The procedure includes a test phase with temporary leads and a second-stage implantation phase. Patients are instructed to keep voiding diaries to monitor improvements during the testing period. If there is more than a 50% improvement in any symptoms, the patient may choose permanent implantation of a pacemaker-like stimulator, which is placed under the skin of the upper buttock.

Invasive therapy: Surgery should be considered for patients with persistent symptoms despite other treatments, and options range from augmentation cystoplasty, urinary diversion, or placement of a suprapubic bladder catheter.

- Indwelling catheters: Indwelling catheterization may be recommended when other treatments for Overactive Bladder (OAB) are not suitable. Before making a decision, patients should be informed about potential risks, benefits, and alternative options.

Emerging treatments

Laser therapy might be beneficial for OAB, but its effectiveness and safety need to be validated in large-scale trials with long-term follow-up before it can be widely recommended. Moisture-wicking devices can provide skin protection for severe incontinence not responding to medical, procedural, or surgical interventions, but only address comfort management and not the root cause.

CONCLUSION

OAB significantly impacts health-related quality of life. Screening for OAB during routine visits is crucial. Diagnosing and treating OAB, especially in elderly patients, is essential. Managing OAB is challenging for physicians. OAB is a syndrome without a cure. Educating patients on treatment options is vital. Most individuals with OAB experience persistent symptoms. Severe UUI, high BMI, and low activity levels increase progression risk. Available treatments may improve symptoms but do not cure OAB, leading to high discontinuation rates.

KEY POINTS

1. Overactive bladder syndrome is a chronic medical condition, that has a major effect on the quality of life.
2. Usually seen in the advanced age group with nocturia being the major complaint along with urgency and frequency.
3. OAB is the diagnosis of exclusion, where history and examination play an important role in the diagnosis.
4. A wide variety of treatment options are available to offer, conservative, pharmacological, minimally invasive, or invasive.

REFERENCES

1. Haylen BT, de Ridder D, Freeman RM, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. *Int Urogynecol J* 2010; 21: 5–26.
2. Chuang YC, Liu SP, Lee KS, et al. Prevalence of overactive bladder in China, Taiwan and South Korea: results from a cross-sectional, population-based study. *Low Urin Tract Symptoms*. 2019 Jan;11(1):48–55. Epub 2017 Oct 2. PMID: 28967230; PMCID: PMC7379992. doi:10.1111/luts.12193.
3. Qudah, S., Abufaraj, M., Farah, R., et al. (2023). The prevalence of overactive bladder and its impact on the quality of life: A cross-sectional study. *Arab Journal of Urology*, 22(1), 39–47.
4. Wood LN, Markowitz MA, Parameshwar PS et al: Is it safe to reduce water intake in the overactive bladder population? A systematic review. *J Urol* 2018; 200: 375.
5. Hanno PM, Erickson D, Moldwin R et al: Diagnosis and treatment of interstitial cystitis/bladder pain syndrome: AUA guideline amendment. *J Urol* 2015; 193: 1545.
6. Ginsberg DA, Boone TB, Cameron AP et al: The AUA/SUFU guideline on adult neurogenic lower urinary tract dysfunction: Diagnosis and evaluation. *J Urol* 2021; 206: 1097.
7. Drake MJ, Kanai A, Bijos DA, et al. The potential role of unregulated autonomous bladder micromotions in urinary storage and voiding dysfunction: overactive bladder and detrusor underactivity. *BJU Int*. 2017;119(1):22–9.
8. Cheng Y, Mansfield KJ, Allen W, et al. ATP during early bladder stretch is important for urgency in detrusor overactivity patients. *BioMed Res Int*. 2014:204604
9. National Institute for Health and Care Excellence. Urinary Incontinence and pelvic organ prolapse in women: management (NG 123).
10. Willis-Gray MG, Dieter AA, Geller EJ. Evaluation and management of overactive bladder: strategies for optimizing care. *Res Rep Urol*. 2016. 8:113-22.
11. Cameron AP, Chung DE, Dielubanza EJ, et al. The AUA/SUFU guideline on the diagnosis and treatment of idiopathic overactive bladder. *J Urol*. Published online April 23, 2024.

Monthly Clinical Meetings AOGD Calendar 2024-25

Date	Hospital
26th April, 2024	LHMC & Smt. Sucheta Kriplani Hospital
31st May, 2024	B L Kapoor Hospital
28th June, 2024	Apollo Hospital
26th July, 2024	Army Hospital (Research & Referral)
30th August, 2024	AIIMS Delhi
27th September, 2024	ESI, Basaidarapur Delhi
25th October, 2024	DDU Hospital
29th November, 2024	MAMC & LNJP Hospital
27th December, 2024	Sir Gangaram Hospital
31st January, 2025	VMMC & Safdarjung Hospital
28th February, 2025	UCMS & GTB Hospital
28th March, 2025	RML Hospital
25th April, 2025	LHMC & Smt Sucheta Kriplani Hospital

Stress Urinary Incontinence – Urethral Bulking Agents and Surgical Treatment

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INTRODUCTION

Urinary incontinence (UI), is defined as any complaint of involuntary loss of urine.¹ Stress UI (SUI) results from urethral sphincter weakness or urethral hypermobility leading to leakage of urine during activities with an increase in intra-abdominal pressure (e.g., exercising, sneezing, laughing).

In women, prevalence ranges from 29 to 75%, depending on age. Primary management of SUI includes weight reduction, pelvic floor muscle training, and biofeedback.² Incontinence pessaries and duloxetine, noradrenaline, and serotonin and reuptake inhibitors are other options for women who are poor surgical candidates. If conservative management for SUI fails, patients may be offered following surgical treatments.

Conventional surgeries

Systematic review and meta-analysis of 75 randomized controlled trials (RCTs) that assessed a total of 21,598 women with SUI concluded that as a surgical option synthetic mid-urethral slings (MUS) both retro-pubic and obturator, traditional autologous fascial slings and open colpo-suspension are the most effective surgical procedures in the armamentarium of treatment of SUI in women.³

1. Synthetic mid-urethral slings: Systematic review and meta-analysis of 22 RCTs comparing retropubic and obturator approaches, there was no significant difference regarding several incontinence episodes, subjective patient-reported effect, and incontinence-related QoL. The incidence of leg and groin pain was higher after the obturator tape. Bladder perforations were significantly more common after the retropubic approach. In exact numbers, this meant only 5 more bladder perforations after retropubic tape per 1000 operations.⁴

Retropubic tape (TVT) may have a better outcome compared to the obturator approach (TOT) for SUI.⁵ In patients with obesity, intrinsic sphincter deficiency (ISD), pelvic organ prolapse (POP), and recurrent SUI after MUS failure, TVT is superior to

TOT in terms of both objective and subjective cure rates. In a multicentric RCT with 12 years of follow-up, TVT appears to be an effective treatment for the majority of women with SUI. It appears to be superior to TOT for the long-term cure of SUI.⁶ A recent 20-year follow-up of subjective and objective outcomes showed that TVT is a highly effective and safe option for the treatment of SUI.⁷

As far as various techniques of obturator approach (outside-in versus inside-out) are considered in 10 years of follow-up trials both were found to be comparable. The standard TOT provides a higher subjective & objective cure rate compared to mini-slings. Standard obturator TOT should be preferred for patients with SUI even though with higher risks of postoperative thigh pain when compared with mini-sling.⁸ However, a pragmatic, noninferiority, randomized trial comparing Single incision mini-slings (SIMS) with standard mid-urethral slings (retropubic and obturator among women at 21 U.K. hospitals) during 36 months of follow-up found SIMS to be non-inferior.⁹

The subjective and objective effectiveness of Adjustable SIMS (still not available in India) was found comparable with conventional obturator tapes. Thus these adjustable tapes can be used in place of standard obturator tapes with a lower risk of post-op complications (leg/groin pain; failure/voiding dysfunction).¹⁰ However, to achieve continence with adjustable SIMS, it is necessary to use different lengths of single-incision tape. Inappropriate tape length could cause failure related to the tape itself and not to the technique.

Complications related to MUS: While the retropubic approach confers more intra-operative risk related to bladder or urethral injury; the obturator approach is associated with more leg/groin pain and vaginal erosion. However, the contemporary evidence regarding complications related to synthetic mesh usage for the treatment of SUI is low-level and often contradictory.¹¹ As conducting a prospective trial to assess complications is unethical and unacceptable,

mandatory registries have been suggested to accrue large datasets and accurately record standardised clinical and patient outcomes to generate a robust data resource for analysis.

- Autologous slings: After the US FDA warnings and controversies that followed, the use of synthetic slings even for SUI has significantly decreased in many countries and is no longer available in some countries. This has led to a renaissance of the use of natural autologous fascial slings. Autologous trans-obturator rectus fascial sling demonstrates comparable efficacy, safety, and feasibility as compared to the trans-obturator tension-free vaginal tapes for treatment of SUI, at 24 months follow up.¹² Autologous rectus fascia pubis-vaginal sling (through the retropubic space) when compared to synthetic trans-obturator tape showed a similar success rate. However autologous rectus fascia sling surgery takes longer time, has more complications such as urinary retention as compared to the synthetic trans-obturator tape.¹³
- Colposuspension: For open colposuspension, complete continence rates at 1 year were approximately 85-90% while failure rates (recurrence of UI) were 17% up to five years and 21% over five years. 2% of cases required reoperation. As per the Cochrane review, 70% of women would be dry at 5 years post-surgery. However, further attempts of open colposuspension after 2 times surgical failures are ineffective.¹⁴ Combination surgery (for POP and SUI) decreases the rate of post-operative SUI in POP cases at the expense of short-term voiding discomfort.

Cochrane review comparing Laparoscopic colposuspension to Open colposuspension suggested that objective outcomes for the laparoscopic procedure were poorer though subjective cure rates were similar. Laparoscopic procedures were associated with a shorter hospital stay, and lower complication rates leading to cost-effectiveness (greater QALY's) over a follow-up of 24 months, and the efficacy may be equal to that of open colposuspension up to 2 years after surgery. The rate of bladder or urethral perforation was higher for laparoscopic colposuspension compared with open colposuspension.^{4,15}

Other Options

Urethral Bulking Agents

The injection of bulking agents into the urethral submucosa is a minimally invasive treatment for SUI, improving mucosal coaptation and thus increasing urethral outlet resistance. Instead of the controversies surrounding the synthetic slings following the US FDA warnings, urethral bulking agents emerged as an alternative treatment option for SUI in women.

The procedure can be performed in the outpatient daycare setting under local anesthetic. There may be complications like urethral discomfort, overactive bladder syndrome, temporary urinary incontinence, and UTIs.² Several agents are available (Table 1), out of which, Polyacrylamide hydrogel (PAHG) has been the most extensively used bulking agent to treat SUI in women.

Table 1: Urethral Bulking agents²

Bulking agent	Commercial name	Current usage
Autologous fat	Autologous fat	Trial terminated (serious adverse event)
Carbon coated zirconium beads	Durasphere	Recommended by NICE
Polyacrylamide hydrogel	Bulkamid	
Calcium hydroxylapatite	Coaptite	Approved by FDA
Glutaraldehyde X linked with bovine collagen	Contigen	Requires skin test (commonest comparator in trials)
Hyaluronic acid with dextranomer	Zuidex	Withdrawn in 2009
Porcine dermal implant	Permacol	
Silicone particles	Macroplastique	Recommended by NICE, approved by the FDA
Autologous myoblasts	Experimental preparations	Research (not licensed)

FDA, US Food and Drug Administration; NICE, National Institute for Health and Care Excellence.

When PAHG was compared to synthetic retropubic slings, the slings were associated with better satisfaction and cure rates than PAHG in women with primary SUI. However, complications were mainly associated with the vaginal tapes. Thus, the tension-free tape should be offered as first-line treatment in women who expect to be completely cured by the initial treatment and are willing to accept the complication risks.

Since PAHG treatment also provides high satisfaction and cure rates, women with primary SUI can be offered PAHG as an alternative treatment with some caution.¹⁶ It should not be offered as first-line therapy for those women desiring a "one-time" durable solution for primary or recurrent SUI. It should be reserved as a first-line surgical therapy only for women with SUI and mixed UI with high anesthesia risk, elderly patients, or patients reluctant to undergo conventional surgery.¹⁷

As per EAU guidelines on UI, bulking agents should not be used in women seeking a permanent cure but may provide short-term improvement in symptoms. Repeat injections may be required. NICE supports the short-term use of intra-urethral bulking agents but notes that the benefits diminish with time but may be repeated.²

Vaginal laser therapy

Single arm meta-analysis of published literature reported - vaginal laser therapy (CO2 and Erbium: YAG laser) can improve the symptoms of women with SUI. It appears to be a safe, effective, and minimally invasive treatment option for SUI that can be well tolerated by patients.¹⁸ But, a more recent RCT with control as sham therapy, was unable to show an improvement in SUI after CO2 vaginal laser therapy compared with sham treatment.

Artificial Urinary Sphincter (AUS)

AUS can provide the best functional outcomes in female patients with SUI resulting from ISD but at the cost of relatively high complications and associated morbidity. Laparoscopic and robotic insertion were first reported in 2015.² and since then the overall numbers of patients and reporting centres have remained comparatively small. A high level of evidence is needed to better define the role of AUS in the treatment of female SUI.¹⁹

Stem Cell Therapy

The injured or damaged urethral sphincter could potentially be repaired by this modality leading to improved function. Stem cells have been shown to have a role in the management of SUI.²⁰ But, it should be employed only in the setting of a clinical trial until there is definitive evidence available; therefore the source of stem cells, method of administration, and dose are to be customized according to the trial requisite.

Platelet-Rich Plasma Therapy

Autologous platelet-rich plasma (PRP) is a biological material and can be easily obtained from the blood of the patient and hence has low potential adverse effects. PRP injection into the urethral sphincter could potentially enhance sphincter muscle bulk leading to increased urethral resistance.²¹ But due to a lack of definitive evidence, it should be used only in research settings.

CONCLUSION

Synthetic mid-urethral slings (retro-pubic and obturator), traditional autologous fascial slings, and open colposuspension are the most effective surgical procedures for the treatment of SUI in women. (LE1a; Grade A) However, Retropubic tension-free vaginal tape shows a more promising outcome as compared to obturator tape. (LE1a; Grade A).

A heterogeneous population of women with SUI, who develop recurrence must be evaluated for detrusor overactivity, misplaced sling, and unrecognized ISD. Patients with ISD are more likely to benefit from a PAHG. Other patients with demonstrated recurrent SUI will likely do well with a repeat MUS.

Other available options should be reserved for clinical trials and cannot be routinely recommended instead of insufficient evidence.


KEY POINTS

1. TVT is superior to TOT in patients with obesity, ISD, and POP. (LE1a; Grade A)
2. TVT is more efficacious than TOT in the long term. (LE1b; Grade A)
3. The main complication related to TOT is leg and groin pain while for TVT, is bladder perforation (LE1a; Grade A)
4. Both techniques of TOT (outside-in & inside-out) are comparable to each other. (LE1a; Grade A)
5. Autologous fascia lata slings as compared to the rectus fascial slings have shown decreased perioperative morbidity without compromising functional outcomes. (LE2a; Grade B)
6. Colposuspension is to be preferred for SUI in patients undergoing concomitant abdominopelvic procedures. (LE1; Grade A). However, patients should be informed about the risk of post-operative POP and voiding dysfunction post-operatively. (LE1; Grade A)
7. Urethral bulking agents should be considered a first-line surgical therapy only for women with SUI and mixed UI with high anaesthesia risk, elderly patients, or patients reluctant to undergo surgery. (LE1a; Grade A)
8. Vaginal laser therapy, Artificial Urinary Sphincter (AUS), Stem Cell Therapy or Platelet-Rich Plasma Therapy have a controversial role in the treatment of SUI. (LE1b, Grade A)


REFERENCES

1. Haylen BT, de Ridder D, Freeman RM, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. *Int Urogynecol J.* 2010 Jan;21(1):5-26.
2. Downey A, Inman RD. Recent advances in surgical management of urinary incontinence. *F1000Res.* 2019 Jul 31;8:F1000 Faculty Rev-1294
3. Imamura M, Hudson J, Wallace SA, et al. Surgical interventions for women with stress urinary incontinence: systematic review and network meta-analysis of randomised controlled trials. *BMJ.* 2019 Jun 5;365:11842.
4. Elers J, Hornum Bing M, Birkefoss K et al. TVT or TVT-O? - A systematic review and meta-analysis comparing efficacy, complications and re-operations. *Eur J Obstet Gynecol Reprod Biol.* 2021 Mar;258:146-151.
5. Wang H, Liu J, Fang K et al. Transobturator tape, tension-free vaginal tape, and transvaginal tension-free vaginal tape-obturator for the treatment of female stress urinary incontinence: A systematic review and network meta-analysis. *Int J Gynaecol Obstet.* 2022 Jun;157(3):527-535.

6. Offiah I, Freeman R; MONARC™ study group. Long-term efficacy and complications of a multicentre randomised controlled trial comparing retropubic and transobturator mid-urethral slings: a prospective observational study. *BJOG*. 2021 Dec;128(13):2191-2199.
7. Braga A, Caccia G, Papadia A et al. The subjective and objective very long-term outcomes of TVT in the COVID era: A 20-year follow-up. *Int Urogynecol J*. 2022 Apr;33(4):947-953.
8. Abdel-Fattah M, Cooper D, Davidson T, et al. Single-Incision Mini-Slings for Stress Urinary Incontinence in Women. *N Engl J Med*. 2022 Mar 31;386(13):1230-1243.
9. Kim A, Kim MS, Park YJ et al. Clinical outcome of single-incision slings, excluding TVT-Secur, vs standard slings in the surgical management of stress incontinence: an updated systematic review and meta-analysis. *BJU Int*. 2019 Apr;123(4):566-584.
10. Sukhikh S, Kasyan G, Grigoryan B, Pushkar D. Suburethral Synthetic Adjustment-controlled Tape Compared with Conventional Treatment for Female Stress Urinary Incontinence: A Randomized Controlled Trial. *Eur Urol Focus*. 2022 Sep;8(5):1441-1447.
11. Morton S, Wilczek Y, Harding C. Complications of synthetic mesh inserted for stress urinary incontinence. *BJU Int*. 2021 Jan;127(1):4-11.
12. Kilinc MF, Yildiz Y, Hascicek AM et al. Long-term postoperative follow-up results of transobturator autologous rectus fascial sling versus transobturator tension-free vaginal tapes for female stress urinary incontinence: Randomized controlled clinical trial. *Neurourol Urodyn*. 2022 Jan;41(1):281-289.
13. Sharma JB, Deoghare MK, Bhatla N, Kachhawa G, Mahey R, Kumari R, Seth A, Sharma A. A comparative study of autologous rectus fascia pubovaginal sling surgery and synthetic transobturator vaginal tape procedure in treatment of women with urodynamic stress urinary incontinence. *Eur J Obstet Gynecol Reprod Biol*. 2020 Sep;252:349-354.
14. Lapitan MCM, Cody JD, Mashayekhi A. Open retropubic colposuspension for urinary incontinence in women. *Cochrane Database Syst Rev*. 2017 Jul 25;7(7):CD002912.
15. Freitas J, Stewart F, Omar MI, Mashayekhi A, Agur WI. Laparoscopic colposuspension for urinary incontinence in women. *Cochrane Database Syst Rev*. 2019 Dec 10;12(12):CD002239.
16. Itkonen Freitas AM, Mentula M, Rahkola-Soisalo P et al. Tension-Free Vaginal Tape Surgery versus Polyacrylamide Hydrogel Injection for Primary Stress Urinary Incontinence: A Randomized Clinical Trial. *Journal of Urology*. 2020;203(2):372-378.
17. Capobianco G, Sadari L, Dessole F, et al. Efficacy and effectiveness of bulking agents in the treatment of stress and mixed urinary incontinence: A systematic review and meta-analysis. *Maturitas*. 2020Mar;133:13-31.
18. Wang Y, Wang C, Song F, Zhou Y, Wang Y. Safety and efficacy of vaginal laser therapy for stress urinary incontinence: a meta-analysis. *Ann Palliat Med*. 2021 Mar;10(3):2736-2746.
19. Yuanzhuo C, Liao P, Chi Z, Shuai X, Deyi L. Efficacy and Safety of Robot-assisted AUS Implantation Surgery in Treating Severe Stress Urinary Incontinence: A Systematic Review and Meta-Analysis. *Urology*. 2023 Jan;171:88-95.
20. Gill BC, Sun DZ, Damaser MS. Stem Cells for Urinary Incontinence: Functional Differentiation or Cytokine Effects? *Urology*. 2018;117:9-17.
21. Jiang YH, Lee PJ, Kuo HC. Therapeutic Efficacy of Urethral Sphincter Injections of Platelet-Rich Plasma for the Treatment of Stress Urinary Incontinence due to Intrinsic Sphincter Deficiency: A Proof-of-Concept Clinical Trial. *Int Neurourol J*. 2021 Mar;25(1):51-58.



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1. Navigating Pheochromocytoma-Paraganglioma (PPGL) in pregnancy: A critical clinical conundrum

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ABSTRACT

Pheochromocytoma and paraganglioma (PPGL), are rare catecholamine-secreting tumours. Effective management requires a multidisciplinary approach to ensure optimal outcomes. We are presenting our experience with three cases of PPGL in pregnancy, illustrating the complexities and management strategies. Our first case was a primigravida diagnosed with pheochromocytoma in the second trimester, managed antenatally by a multidisciplinary team and cesarean delivery was conducted at 36+5 weeks gestation along with laparoscopic right adrenalectomy at 6 weeks post-partum. The second case was a twenty-seven-year-old primigravida, diagnosed with pheochromocytoma in the third trimester and was delivered by an elective cesarean section at 37 weeks gestation along with concurrent laparoscopic right adrenalectomy. The third case was a 22-year-old primigravida with diagnosed metastatic paraganglioma on chemotherapy, who later presented at 34 weeks mimicking features of impending eclampsia.

Antenatal diagnosis of PPGL is challenging and a multidisciplinary team is mandatory to successfully manage these high-risk cases. Antepartum surgery should be reserved for special circumstances.

Keywords: PPGL, laparoscopic adrenalectomy, pregnancy

INTRODUCTION

Pheochromocytoma and paraganglioma (PPGL) in pregnancy indeed represent a rare and complex challenge, with significant uncertainties surrounding their management. Catecholamines secreted by these rare neuroendocrine tumors pose serious risks to both the mother and fetus. The mother is at heightened risk of debilitating strokes, hypertensive crises, life-threatening cardiomyopathy, and even death. Pregnancy introduces additional dangers, as fetal movement, uterine contractions, and the induction of anaesthesia can trigger acute catecholamine release, further complicating management.

The fetus is also vulnerable to these catecholamine surges, as well as to uncontrolled maternal hypertension, which can compromise placental circulation, leading to hypoxia, placental abruption, or even fetal demise. Due to the rarity of the condition, there is a lack of evidence and recommendations to guide obstetricians to provide optimal management. We share our experience in managing three cases of this rare condition, highlighting the diagnostic dilemmas and treatment uncertainties we encountered.

Case Summaries

CASE 1:

A 26-year-old primigravida with a history of elevated blood pressure, sweating, dizziness, blurred vision, and palpitations starting early in the second trimester was referred to our hospital at 26 weeks gestation for further evaluation. Ultrasound and magnetic resonance imaging (MRI) of the abdomen led to the diagnosis of a right adrenal neoplasm, likely a pheochromocytoma, measuring approximately 4.5 x 4 x 3 cm. She was admitted and started on an oral alpha-blocker (prazosin). Her Magnetic resonance imaging (MRI) was ordered which revealed a right adrenal neoplasm, likely phaeochromocytoma, measuring approximately 4.5 x 4 x 3 cm. The panel of serum catecholamines and its metabolites showed significantly elevated serum normetanephrine (2770 ng/l). A multi-disciplinary team consisting of obstetricians, endocrinologists, urologists, anaesthesiologists, and neonatologists was constituted. Due to her rising BP records, an oral beta-blocker (labetalol) was added at a dose of 100 mg thrice a day to manage the chronic hypertension, after achieving 1 week of alpha blockade. Strict maternal and fetal monitoring was done. Following initial evaluation and surveillance, she was discharged on oral antihypertensives with the advice of home BP charting and regular antenatal follow-up. At 36 weeks and 5 days period of gestation, she was taken up for emergency cesarean section given uncontrolled BP records. The preparations for adrenalectomy were done considering severe hypertensive crisis, however, her BP

records normalised after the delivery of the baby and the procedure was deferred. A healthy male baby was delivered and the postnatal course was uneventful. The patient was discharged on postoperative day five and later underwent laparoscopic right adrenalectomy at six weeks postpartum.

CASE 2:

A 27-year-old Primigravida presented with a history of raised BP records and paroxysmal episodes of dizziness and headache since 10 weeks period of gestation. She was managed with oral labetalol initially. Later, her detailed workup was done in the third trimester with an ultrasound showing a 4.8x3.6 cm right suprarenal mass and elevated metanephrines (6360 ng/l) suggestive of pheochromocytoma. The patient was then referred to our institute at 36 weeks for uncontrolled blood pressure, proteinuria, and severe headache mimicking pre-eclampsia with severe features. Following admission, a multidisciplinary team was constituted and her oral antihypertensives were switched from labetalol to prazosin and nifedipine for better control of blood pressure. She was subsequently planned for elective caesarean section given a breech presentation. She underwent caesarean and concurrent laparoscopic adrenalectomy at 37 weeks 3 days gestation and a healthy female baby was delivered. She did not require any antihypertensives in the post-operative period and was discharged on day seven of surgery.

CASE 3:

A 22-year-old primigravida with diagnosed metastatic paraganglioma presented at 12 weeks with chronic hypertension. She was already on three antihypertensives; prazosin, metoprolol, and amlodipine. She was diagnosed with metastatic paraganglioma 5 years back and had undergone 3 cycles of Lutetium-177 dotatate chemotherapy. She was on regular follow-ups with the department of nuclear medicine and endocrine surgery with normal urinary metanephrines and serum chromogranin levels. Multi-disciplinary review with nuclear medicine, endocrinology, anaesthesiology, and cardiology was done and the couple decided to continue the pregnancy. She had a smooth antenatal period until 34 weeks when she presented with hypertensive crisis and headache mimicking impending eclampsia. This episode was managed with injectable labetalol and after stabilization of blood pressure, she was strictly monitored for vitals along with bi-weekly fetal surveillance. Her MRI revealed an unresectable retroperitoneal mass at L4-L5 encasing the aorta and IVC. She went into spontaneous labour at 36 weeks and underwent an uneventful emergency caesarean under general anaesthesia.

DISCUSSION:

Pheochromocytoma and paragangliomas (PPGL) are catecholamine-secreting neoplasms of the adrenal medulla and paraganglia, respectively, often causing

hypertensive crises.¹ PPGLs have rarely been observed during pregnancies with incidence being reported between 1 in 15,000 to 1 in 300,000 pregnancies.^{2,3} Most cases reported seem to be in primiparous women.⁴ Traditionally, PPGLs have been associated with high rates of maternal and fetal mortality, but with a focus on a multi-disciplinary approach, these rates have come down significantly over the past few decades. The most significant factor in most maternal mortalities appears to be the challenge of diagnosing it timely and distinguishing it from other causes of hypertensive disorders in pregnancy. When mistaken for pre-eclampsia, mortality rates are considerably higher.⁵

Hypertension due to pheochromocytoma is usually paroxysmal and presents before the 20th week of gestation, similar to all 3 cases discussed here⁶ It poses a diagnostic dilemma and the delay is at times inevitable considering the rarity of the condition as in the present case series too, both the cases of pheochromocytoma had typical symptoms of paroxysmal hypertension from early pregnancy but there was a delay in diagnosis and referral to a tertiary care centre. Therefore, a high index of suspicion is required while managing atypical cases of hypertension in pregnancy, especially before the 20th week of gestation.

This necessitates a biochemical evaluation of plasma catecholamines and their metabolites and imaging to confirm or exclude the diagnosis. Ultrasound and MRI (without contrast) are the preferred modalities for diagnosing PPGL in pregnant and lactating women. While PPGLs > 5 cm usually result in at least a doubling of the upper normal limit of plasma metanephrine/normetanephrine levels, those <2 cm may have only slightly elevated levels.^{7,8} The magnitude of catecholamine secretion has also been found to be directly linked to adversity of fetomaternal outcomes⁴.

The management of PPGL should involve a multidisciplinary team consisting of high-risk obstetricians, endocrinologists, urologists, anaesthesiologists, and neonatologists. The successful management of PPGL rests on four pillars: blood pressure control with adequate alpha-adrenergic blockade, surgical management including laparoscopic excision of the tumour mass, obstetric care, and genetic evaluation.⁹ The cornerstone of medical management is alpha-adrenergic blockade, which is initiated as soon as the diagnosis is suspected or confirmed. After adequate alpha-blockade, beta-blockers are added to control tachycardia. The combination of alpha- and beta-blockades is essential to prevent hypertensive crises, particularly during surgical interventions. Further, magnesium sulphate has a beneficial role in cases of hypertensive crisis by not only managing pre-eclampsia but also by inhibiting catecholamine release in pheochromocytoma.¹⁰ Both cases of pheochromocytoma were controlled on sequential alpha and beta blockade, as reported in the literature.

There seems to be no consensus on the timing of surgery which is determined by clinical judgment and varies based on several factors such as the tumour's location, the gestational age, the effectiveness of blood pressure management, the presence of multiple or malignant tumours, and the lesion's accessibility for surgical

intervention. In the two large systematic reviews published by Bancos et al and Langton et al, most patients were operated on in the postpartum period.^{4,5} In cases where pheochromocytoma is diagnosed after the second trimester, the laparoscopic approach may be more challenging due to the enlarged uterus. In our case series, we have reported one patient with phaeochromocytoma who underwent concurrent laparoscopic adrenalectomy with caesarean delivery, another one operated on at the end of puerperium, and a third case with unresectable metastatic paraganglioma treated with chemotherapy.

Most reported cases in the literature underwent a caesarean section; however uncomplicated vaginal deliveries have been reported after successful adrenergic blockade.^{4,5,11} The timing of delivery should be decided based on two factors: control of maternal hypertension and any obstetric indication for an earlier delivery.¹² At last, genetic testing should be offered to all such patients as nearly 30-40% of cases are associated with germline pathogenic variants.¹ This case series combines 3 unique cases of PPGLs with varied presentations and individualised management with a successful outcome. The second case is unique as it was possible to follow a laparoscopic approach for adrenalectomy, which reduced the postoperative morbidity of a laparotomy.

CONCLUSION

It is crucial to differentiate hypertensive disorders of pregnancy from PPGLs and a high index of suspicion is imperative to accurately distinguish the two entities due to the similarity in their symptomatology. The management of pheochromocytoma in pregnancy requires a multidisciplinary approach and the mainstay of treatment is surgical resection, which is ideally performed in the second trimester to minimize risks associated with fetal development and maternal stability. Laparoscopic surgery has become the preferred approach due to its lower morbidity, faster recovery, and reduced hospital stay.

REFERENCES

1. Lenders JWM, Kerstens MN, Amar L, Prejbisz A, Robledo M, Taieb D, Pacak K, Crona J, Zelinka T, Mannelli M, Deutschbein T, Timmers HJLM, Castinetti F, Dralle H, Widimský J, Gimenez-Roqueplo AP, Eisenhofer G. Genetics, diagnosis, management, and future directions or research of phaeochromocytoma and paraganglioma: a position statement and consensus of the Working Group on Endocrine Hypertension of the European Society of Hypertension. *J Hypertens*. 2020;38(8):1443–1456. doi: 10.1097/HJH.0000000000002438.
2. Harrington JL, Farley DR, van Heerden JA, et al. Adrenal tumors and pregnancy. *World J Surg*. 1999;23:182–186. doi: 10.1007/PL00013159.
3. Quartermaine G, Lambert K, Rees K, Seed PT, Dhanjal MK, Knight M, McCance DR, Williamson C. Hormone-secreting adrenal tumours cause severe hypertension and high rates of poor pregnancy outcome; a UK obstetric surveillance system study with case control comparisons. *BJOG*. 2018;125:719–727. doi: 10.1111/1471-0528.14918.
4. Bancos I, Atkinson E, Eng C, Young WF, Neumann H. International-pheochromocytoma and pregnancy study group. Maternal and fetal outcomes in pheochromocytomas and pregnancy: a multi-center retrospective cohort study and systematic review of literature. *Lancet Diabetes Endocrinol* 2021;9:13–21.
5. Langton K, Tufton N, Akker S, Deinum J, Eisenhofer G, Timmers HJLM, Spaanderman MEA, Lenders JWM. Pregnancy and phaeochromocytoma/paraganglioma: Clinical clues affecting diagnosis and outcome – a systematic review. *BJOG*. 2021;128:1264–1272. doi: 10.1111/1471-0528.16635.
6. Kiroplatis K, Kamaroudis A, Andronikou A, Reklou A, Kokkonis D, Petras P, Mamopoulos A, Anagnostara E, Spyridis C. Dealing with Pheochromocytoma during the First Trimester of Pregnancy. *Case Rep Obstet Gynecol*. 2015;2015:439127. doi: 10.1155/2015/439127.
7. Eisenhofer G, Prejbisz A, Peitzsch M, et al. Biochemical diagnosis of chromaffin cell tumors in patients at high and low risk of disease: Plasma versus urinary free or deconjugated O-methylated catecholamine metabolites. *Clin Chem*. 2018;64(11):1646–1656. doi: 10.1373/clinchem.2018.291369.
8. Eisenhofer G, Lenders JWM, Goldstein DS, Mannelli M, Csako G, Walther MM, Brouwers FM, Pacak K. Pheochromocytoma catecholamine phenotypes and prediction of tumor size and location by use of plasma free metanephrines. *Clin Chem*. 2005;51:735–744. doi: 10.1373/clinchem.2004.045484.
9. Clifton-Bligh RJ. The diagnosis and management of pheochromocytoma and paraganglioma during pregnancy. *Rev Endocr Metab Disord*. 2023 Feb;24(1):49-56. doi: 10.1007/s11154-022-09773-2. Epub 2023 Jan 13. PMID: 36637675; PMCID: PMC9884650.
10. Yulia A, Seetho IW, Ramineni A, Jaiyesimi RAK (2016) Pheochromocytoma in Pregnancy: A Review of the Literature. *Obstet Gynecol Cases Rev* 3:096
11. Eccles-Smith J, Hopkins S, Conn J, Johnston S, Szabo R, Price S, Nankervis A. Paraganglioma in pregnancy: a case series and literature review. *Obstet Med*. 2022;15:19–24. doi: 10.1177/1753495X211006012.
12. Biggar MA, Lennard TWJ. Systematic review of phaeochromocytoma in pregnancy. *Br J Surg*. 2013;100(2):182–190. doi: 10.1002/bjs.8976.

2. From Misapprehension to Revelation: Story of a Pelvic Mass

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ABSTRACT

Mature cystic teratoma is a benign germ cell tumour originating from totipotent cells with the potential to differentiate into various tissue types. Ovaries remain the commonest site. Paravaginal dermoid cyst is a rare occurrence and thus pre-operative diagnosis is usually difficult in the majority of cases. We report a case of a 26-year-old female with an unusual presentation and imaging suggestive of a broad ligament hematoma extending into the vagina. On clinical examination, there was a large cystic left lateral vaginal wall cyst. Transvaginal excision of the cyst was done which showed cheesy material. A retrospective diagnosis of a vaginal mature dermoid cyst was made on histopathological examination.

KEYWORDS

Vaginal dermoid cyst, mature teratoma, benign neoplasm, gynaecology, surgical excision

INTRODUCTION

Dermoid cysts also known as benign cystic teratomas are benign germ-cell tumours that originate from totipotent germ cells which retain the potential to differentiate into skin, hair follicles, sebaceous glands, and teeth¹. They appear from the entrapment of ectodermal and mesodermal components along the line of embryonic fusion over the head and neck region, the mediastinum, and the presacral area with most of these occurring in the midline. Approximately 80% of benign dermoid cysts in the reproductive age group are seen in the ovary and their occurrence in the vaginal region is extremely rare and atypical. Its rarity poses a challenge to its diagnosis and accurate management. We report a case of vaginal dermoid who presented with an unusual presentation of pain abdomen, urinary retention, and fever following a road traffic accident.

Case report

A-26 year-old nulligravida, presented in casualty with high-grade fever, vomiting, pain in the lower abdomen for the past 3 days, difficulty in passing urine, and constipation for the past 15 days. She had a history of road traffic accident 2 months back and was found to have broad ligament hematoma on imaging, which was managed conservatively. On clinical examination, she was dehydrated, had a high-grade fever with urinary retention, and was catheterized. Her BP was normal and on per abdomen examination, there was tenderness in the left iliac fossa with no palpable mass

on deep palpation. On per speculum examination, a bulge was seen in the left anterolateral vaginal wall, same mass was felt on vaginal examination which was a tense cystic ~8x6 cm displacing the cervix to the right side. On CECT (Fig 1) 8.8x9.1x7.8 cm loculated collection was seen in an extraperitoneal location with mass effect on the sigmoid colon and bladder and pushing uterus and cervix to the right side suggestive of broad ligament hematoma with right renal acute nephritis. Given persistent high-grade fever with urinary retention due to mass effect leading to pyelonephritis, she underwent exploratory laparotomy with an abdomino-perineal approach. Intraoperatively no bulge/hematoma was seen in the broad ligament however, a bulge was felt low down in the pelvis between the cervix and bladder which was not amenable for drainage from above. Thus, the vaginal approach was considered and drainage was done after giving an incision on the most prominent part (Fig 2). About, 150 cc of cheesy material along with clear fluid was removed followed by cystectomy (Fig 3 and 4). Histopathology of the cyst wall showed features of mature cystic teratoma.



Fig 1: CECT whole abdomen and pelvis

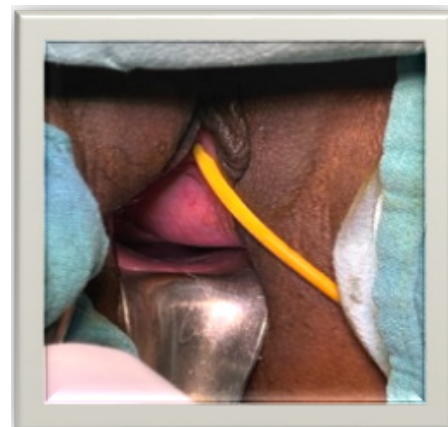


Fig 2: Vaginal mass from left anterolateral vaginal wall



Fig 3: Vaginal cyst excision with cheesy sebaceous content

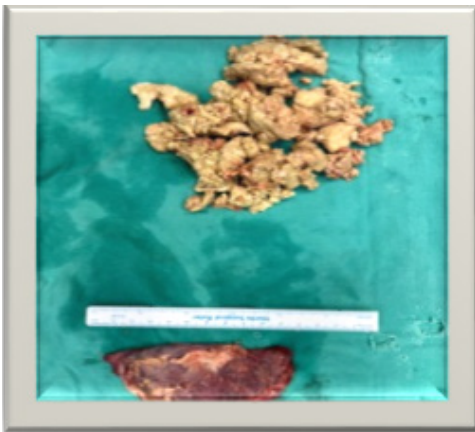


Fig 4: Sebaceous cheesy content and cyst wall

Discussion: Mature cystic teratoma is one of the more common variants of ovarian neoplasm, and its occurrence in the extragonadal site is extremely rare. Vaginal dermoid cysts, though rare, represent a fascinating aspect of gynaecological pathology due to their origin, clinical presentation, and management challenges. Stokes JE et al in 1899 reported the very first case of a vaginal dermoid². The prevalence of vaginal cysts is 1 in 200 women, in the third or fourth decade of life. These include Mullerian cyst, epidermal inclusion cyst, Bartholin's cyst, Gartner's duct cyst, endometrioid cyst, and, rare types are dermoid cyst, unilateral hematocolpos, ectopic ureterocele, and paraurethral cyst. The vaginal cysts are small, solitary, and largely benign entities that mostly go undiagnosed. If large or symptomatic, they are treated by transvaginal surgical excision. At times, they mimic pelvic organ prolapse. Few cases of vaginal dermoid have been reported in literature till now³⁻¹¹. Given its rarity, its diagnosis demands a high index of suspicion, and imaging plays a promising role. Surgical excision is the

treatment of choice, offering both definitive diagnosis through histopathological examination and relief from any associated symptoms. The surgical approach depends on its location and transvaginal excision is preferred and its complete excision should be ensured to avoid recurrence. Thorough, pathological evaluation is necessary to ensure appropriate postoperative management and follow-up. It has an excellent prognosis upon complete excision and recurrence is unlikely.

CONCLUSION

Vaginal dermoid is a rare condition and is often detected incidentally which often mimics other clinical conditions. Preoperative diagnosis can be challenging in the absence of teeth or bone tissue still imaging plays an important role and vaginal dermoid should be considered a differential diagnosis in cases of vaginal cysts. Transvaginal excision is the preferred route with a rare chance of recurrence and excellent prognosis.

REFERENCES

1. Rizqi I, Violetta L. Abdominal and gonadal mature cystic teratoma. *J Pediatr Surg Case Rep* 2022;78:102190
2. Stokes JE. The etiology and structure of true vaginal cysts. *Johns Hopkins Hosp Rep.* 1899; 7: 109–136.
3. Pace M, Kalovidouri A, Ghinescu A, Tille JC, Petignat P, Dubuisson J. Vaginal Teratoma: A Fistulized or Parasitic Recurrent Ovarian Teratoma? A Case Report. *J Minim Invasive Gynecol.* 2019 Nov;26(7):1209–11.
4. Bhatia R, Mohi MK, Gupta A, Goyal S, Dixit P. Para vaginal dermoid cyst: a rare occurrence. *Int J Reprod Contracept Obstet Gynecol.* 2019 Feb;8(2):776-778
5. Vural F, Vural B, Paksoy N. Vaginal teratoma: A case report and review of the literature. *J Obstet Gynaecol.* 2015 Oct 3;35(7):757–8.
6. Chen L, Deng X, Xiao S, He S, Xue M. Vaginal mature teratoma: a case report and literature review. *Clin Exp Obstet Gynecol.* 2018 Oct 10;45(5):778–80.
7. Mahoorkar DN, Panda A, Sianadh B.S.S, Reddy B M. Dermoid cyst- An unusual location. *Indian J Obstet Gynecol Res.* 2023 Feb 28;10(1):85–7.
8. MacKinnon R, Elmezzi K, Phippen N. Vaginal dermoid cyst. *Am J Obstet Gynecol* 2021;225(3):337-38.
9. Sharma R, Nagraj S. A Rare Case of Vaginal Dermoid Cyst: A Case Report and Review of Literature. *Int J Infertil Fetal Med.* 2012 Dec;3(3):102–4.
10. Johnston HW. A dermoid cyst of the vagina complicated by pregnancy. *Can Med Assoc J.* 1939 Oct;41(4):386.
11. Hirose R, Imai A, Kondo H, Itoh, Tamaya T. A dermoid cyst of the paravaginal space. *Arch Gynecol Obstet* 1991;249:39-41

3. Obstructed Hemi-Uterus: Dilemma in Diagnosis and Management

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ABSTRACT

We are presenting two cases of two adolescent girls presenting with progressive dysmenorrhea. Both had undergone laparotomy in other hospitals but no surgical intervention had been done due to lack of final diagnosis. The second case had undergone exploratory laparotomy and drainage of hematometra and DJ stenting given endometriosis encasing the ureter and causing hydroureteronephrosis. On MRI first was diagnosed as juvenile cystic adenomyoma (JCA) and the other was diagnosed as an enlarged uterus rudimentary functional horn and endometriosis. Diagnostic laparoscopy and hysteroscopy revealed findings of Robert's uterus. Hysteroscopic septal resection was done under lap guidance and USG guidance. The diagnostic and management challenges of this atypical and rare obstructive Mullerian anomaly are discussed in this report.

Keywords: Mullerian anomalies, progressive dysmenorrhea, Robert's uterus

INTRODUCTION

The prevalence of Mullerian anomalies is approximately 5.5 – 6.7% in the general population and higher in women with infertility and recurrent pregnancy losses.¹ Although most of the anomalies are well-researched and classified, some anomalies are misclassified due to wide variations in clinical presentation and radiological findings. Robert uterus, a rare variant of the asymmetric septate uterus, was first reported by Robert in 1970.² The number of cases of Robert's uterus reported in the literature are few and not well known among radiologists and clinicians. Depending upon the functionality of the endometrium in blocked hemi-uterus, the anomaly usually presents in adolescent girls with progressive dysmenorrhea or infertility and/or recurrent pregnancy loss in reproductive-age women. Due to a lack of awareness of the anomaly among clinicians and similar clinical presentations and imaging findings, most of the cases reported in the literature have been misdiagnosed and mismanaged.³

We are presenting two cases of Robert uterus along with diagnostic challenges, imaging, and surgical management options. Our first case was misdiagnosed as juvenile cystic adenomyoma (JCA) and the second was misdiagnosed as a unicornuate uterus with a functional rudimentary horn. Surgical interventions and reproductive outcomes depending upon clinical presentation and type of Robert uterus are also discussed.

Cases:

Case 1

A 13-year-old girl presented to OPD with complaints of severe progressive dysmenorrhea since menarche. She attained menarche at the age of 11 and had regular menstrual cycles. Her symptoms persisted with the same progressive severity which led her to drop out of school. She had undergone one laparotomy outside but no surgical management was done as the diagnosis was not clear. On examination, the abdomen was soft with no tenderness or organomegaly. The haematological and biochemical parameters were within normal limits. Transabdominal 2D ultrasonography revealed a 4.5x3.3cm lesion in the right uterine myometrium indenting the endometrial cavity. Bilateral ovaries were normal. Magnetic resonance imaging (MRI) pelvis showed a heterogeneous lesion of size 5.4x4.5cm in the left lateral wall of the uterus abutting the adjacent junctional zone medially, not communicating with the endometrial cavity (Figures 1A and 1B). A provisional diagnosis of juvenile cystic adenomyoma was made. However, on laparoscopy, a bulge was noted on the left side of the uterus with the right round ligament, the fallopian tube, and the ovary attached to the lesion (Figure 1C). An intra-operative diagnosis of the blind uterine horn/ Robert's uterus was made. Hysteroscopy revealed a tubular cavity with a single ostium seen on the right side. Hysteroscopic metroplasty and unification of both uterine cavities were done under laparoscopic guidance (Fig 1D-1E).

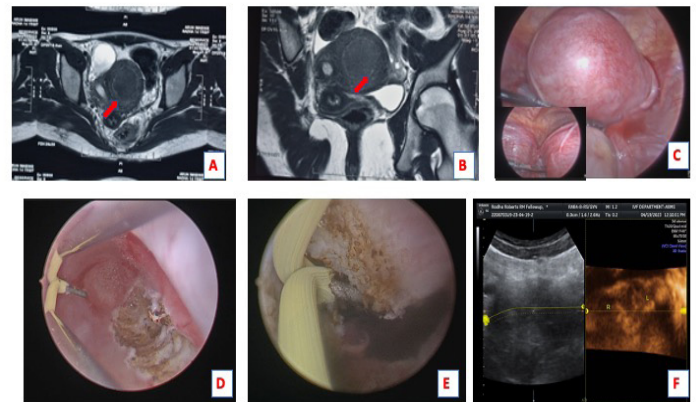


Fig 1: (A), (B) MRI abdomen revealed two separate uterine horns with well-defined thick-walled left horns with hematometra. (C) Diagnostic laparoscopy revealed an asymmetrical uterus with a bulge on the left side, with normal bilateral tubes and ovaries (D), (E) USG guided hysteroscopic metroplasty (F) Follow-up 4-D transabdominal scan after 6 weeks showing normal uterine cavity with small residual septum and no collection.

The patient had an uneventful postoperative recovery. On postoperative follow-up (Fig 1F), the patient is doing well and has had regular periods with no dysmenorrhoea for the past 12 months.

Case 2

A 19-year-old girl presented with progressive dysmenorrhea since menarche and chronic pelvic pain for the last three years. She had attained menarche at 14 years of age and her menstrual cycles were regular but associated with mild dysmenorrhea. Over the last five years, she developed progressive severe dysmenorrhoea which was not responsive to oral analgesics. Eight months back, for similar complaints, she was evaluated at a private facility and detected to have hematometra and right-sided 10x 9 cm adnexal mass. She underwent exploratory laparotomy and was detected to have an enlarged uterus and right tubo-ovarian mass encasing the right ureters which could not be removed and a DJ stent was placed cystoscopically. She was then referred to our hospital for further management.

During the evaluation, a contrast-enhanced MRI showed a bicornuate uterus with haematometra in the right horn. The left horn was normal. Intra-operatively, dense pelvic adhesions were noted and omentum was stuck to the anterior abdominal wall, uterus, and adnexa. After adhesiolysis, the uterus was found to be normal, and a right ovarian endometrioma of 7x8 cm and haematosalpinx were detected. Hysteroscopically, a bulge was seen in the right hemi-cavity and a diagnosis of obstructive uterine septum was made. The septum was resected and hematometra was drained. The patient remains asymptomatic at 3 months after surgery.

DISCUSSION

The present case series describes two atypical cases of progressive dysmenorrhea among young adolescent girls. Both cases had been misdiagnosed and mismanaged given the lack of awareness about the diagnosis of Robert uterus. The diagnostic challenges, imaging, and surgical management options for Robert uterus are being presented.

The awareness about the entity is poor among radiologists and clinicians which leads to misdiagnosis and inappropriate surgeries. All young adolescent girls presenting with progressive dysmenorrhea should be evaluated for obstructive Mullerian anomalies. Our previously published article describes the evaluation and diagnostic workup of adolescent girls presenting with progressive dysmenorrhea and imaging revealing some obstructive uterine anomaly.⁴

The triad of Robert's uterus includes: 1) blind hemi-cavity/uterine horn +/- unilateral hematometra 2) Contralateral unicornuate uterine cavity 3) Normal uterine fundus +/- small external indentation. Three types of Robert's uterus have been described by Ludwin et al⁵ based on the functionality of the contralateral cavity and its size. In type 1 Robert's uterus (typical Robert's uterus) hemi-uterus is fully functional and compresses on the adjacent cavity. (Fig.2a)

Type 1 usually presents early in the adolescent age group with severe progressive dysmenorrhea. Type 2 Roberts uterus has a non-functional hemi-uterus and presents relatively late with recurrent pregnancy loss or infertility and is usually diagnosed as unicornuate uterus. (Fig.2b) Type 3 Robert's uterus has a small collection because of residual functioning endometrial tissue in the hemi-uterus (Fig.2c). Type 3 might present in adolescent or early reproductive age group with progressive dysmenorrhea and endometriosis. Clinically it presents with severe dysmenorrhoea and unilateral hematometra soon after menarche. It is usually accompanied by haematosalpinx and endometriosis.⁶

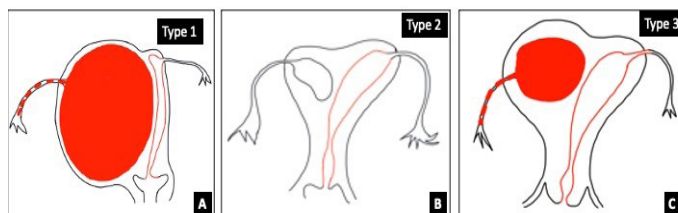


Fig 2: Types of Robert uterus depending upon the functionality of the blocked cavity

The initial investigation for the management of progressive dysmenorrhea in adolescent girls is transabdominal USG showing hematometra. Further confirmation may be done with 4D USG (abdominal/transrectal) and/or Magnetic Resonance Imaging (MRI) pelvis. MRI is the most informative non-invasive diagnostic modality in adolescent girls to diagnose but sometimes, it becomes difficult to differentiate even on MRI due to low awareness among clinicians and radiologists. It is capable of showing the endometrial cavity and uterine contour in exquisite detail⁷. It will demonstrate the uterine septum as well as the normal external uterine contour which is necessary for differentiating the septate uterus from the unicornuate uterus and it is the gold standard investigation^{8,9}. Combined hysteroscopy and laparoscopy can accurately diagnose Robert's uterus as well as differentiate it from the unicornuate uterus.⁵⁻¹⁰

Identification of Robert's uterus includes a single fundus, with a normal or slight bulge on the fundus depending upon the amount of hematometra, while there will be a fundal cleft more than 1 cm in the unicornuate uterus, thick myometrium, and the presence of hematometra with oblique orientation of the septum joining the lateral uterine wall above internal os. It is important to make an early diagnosis as retrograde menstruation may lead to hematosalpinx and pelvic endometriosis.

Surgical intervention is the primary modality for the treatment of adolescent girls with symptomatic Robert uterus. Traditional methods include abdominal excision of the septum with the unification of the endometrial cavity, total horn resection, and endometrectomy of the blind cavity. However, these are associated with loss of uterine volume and should be considered for only specific cases. Ludwin et al have described the hysteroscopic septal resection under transabdominal scan guidance which has the added advantage of expansion of total uterine cavity

volume, and no harmful effect on future reproductive outcomes.⁵

Our first case was misdiagnosed as JCA and had severe symptoms leading to a school dropout and one laparotomy, so the family did not want to go for any conservative procedure. Also, it was a large adenomyotic lesion, so the decision to horn resection along with myometrial conservation was made. The second case as was once operated outside, led to adhesions and pelvic endometriosis. We could achieve successful outcomes with USG-guided hysteroscopic septal resection.

Low awareness about obstructive Mullerian anomalies among paediatric surgeons, radiologists, and gynaecologists leads to delayed and improper diagnosis and improper surgeries leading to poor surgical and future reproductive outcomes. Our case series emphasizes the importance of a 3-D transabdominal/transrectal scan and MRI for the diagnosis of Robert's uterus, its differentials, importance of understanding the pathology to provide the best surgical outcome in place of multiple inappropriate surgeries. Laparoscopy and hysteroscopy confirm the diagnosis and differentiate it from other obstructive uterine anomalies. Hysteroscopic resection of the septum in Robert uterus may be considered as the procedure of choice for best conservative uterine surgery for symptom relief and better reproductive outcomes.

REFERENCES

1. Chan YY, Jayaprakasan K, Zamora J et al. The prevalence of congenital uterine anomalies in unselected and high-risk

populations: a systematic review. Hum Reprod Update. 2011 Nov-Dec;17(6):761-71. 1–71.

2. Robert H. Asymmetrical bifidities with unilateral menstrual retention: apropos of 12 cases. Chir Memoires Acad Chir. 1970;96(11):796–9

3. De A, Jain A, Tripathi R, Nigam A. Complete Uterine Septum with Cervical Duplication and Longitudinal Vaginal Septum: An Anomaly Supporting Alternative Embryological Development. J Hum Reprod Sci. 2020 Oct-Dec;13(4):352-355.

4. Mahey R, Cheluvvaraju R, Kumari S et al. Robert's Uterus versus Juvenile Cystic Adenomyoma - Diagnostic and Therapeutic Challenges - Case Report and Review of Literature. J Hum Reprod Sci. 2023 Jan-Mar;16(1):79-86.

5. Ludwin A, Ludwin I, Bhagavath B, Lindheim SR. Pre-, intra-, and postoperative management of Robert's uterus. Fertil Steril. 2018 Sep;110(4):778-779.

6. Singh S, Malik R, Gupta P, Ara A. Successful outcome in a perplexing case of Roberts uterus: a rare uterine anomaly, a rare case report with review of literature. Int J Reprod Contracept Obstet Gynecol 2020;9:440-3.

7. Acien P. Incidence of Müllerian defects in fertile and infertile women. Hum Reprod. 1997;12(7):1372-6.

8. Behr SC, Courtier JL, Qayyum A. Imaging of müllerian duct anomalies. Radiograph. 2012 Oct;32(6):E233-50.

9. Marcal L, Nothhaft MA, Coelho F, Volpato R, Iyer R. Mullerian duct anomalies: MR imaging. Abdom Imaging. 2011 Dec;36(6):756-64.

10. Bermejo C, Martínez Ten P, Cantarero R et al. Three-dimensional ultrasound in the diagnosis of Müllerian duct anomalies and concordance with magnetic resonance imaging. Ultrasound Obstet Gynecol. 2010 May;35(5):593-60.

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Journal Scan

Dr. Kashika Nagpal

*Assistant Professor
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The Outcomes of the Manchester Procedure Versus Sacrospinous Ligament Hysteropexy for Uterine Prolapse: A Study of the British Society of Urogynaecology Database

*Albert Chao Chiet Tan, Pallavi Latthe,
Department of urogynaecology, Birmingham Women's and Children NHS Foundation Trust,
UK International Journal of urogynaecology, volume 35; 1469-1475*

INTRODUCTION

The Manchester procedure (MP) and sacrospinous ligament hysteropexy (SSHP) have long been established as effective conservative surgeries for treating uterine prolapse. However, there have been limited studies on outcomes comparing these two techniques.

METHODOLOGY

This was a prospective cohort study of the British Society of Urogynaecology database between February 2007 and 2023 of MP and SSHP outcomes from 90 centres in the UK. The primary outcome was the Patient Global Impression of Improvement (PGI-I). The other outcomes compared were the absence of pelvic organ prolapse beyond the hymen in any compartment evaluated by the Pelvic Organ Prolapse Quantification (POP-Q), complications, and the incidence of reported symptomatic prolapse within 1 year after the operation.

RESULTS

There were 718 women who underwent MP and 2,384 who had SSHP. The PGI-I score was significantly better in the MP group (p value <0.001). The rates of symptomatic prolapse within 1 year (odds ratio [OR] 0.36, 95% confidence interval [CI] 0.18–0.69; p value 0.001), recurrence of prolapse beyond the hymen (OR 0.13, 95% CI 0.03–0.53; p value 0.001) and apical recurrence (OR 0.09, 95% CI 0.01–0.65; p value 0.003) during follow-up examination were lower in the MP group. The combined peri-operative and post-operative complications reported in both groups were comparatively similar.

CONCLUSION

The symptom improvement was better and recurrence was lower with the MP than with SSHP at short-term follow-up.

EDITOR'S COMMENT

The study has been published to highlight that the age old Manchester repair is still a very effective procedure for uterine prolapse. Manchester is a safe and easy to perform procedure which can be performed vaginally whereas Sacrospinous fixation requires much expertise.

Bacteriology and Clinical Outcomes of Urine Mixed Bacterial Growth in Pregnancy

Inshirah Sgayer, Gabriel Shamalov, Silas Assi, Daniel Glikman, Lior Lowenstein, Maya Frank Wolf
International Journal of urogynaecology, volume 35; 347-353

INTRODUCTION AND HYPOTHESIS

The objective was to analyse the risk of significant bacteriuria in repeat urine cultures from pregnant women, following initial mixed bacterial results.

METHODS

This retrospective study examined maternal characteristics and clinical features of women who repeated urine cultures due to previous mixed cultures results.

RESULTS

Of 262 women included, 80 (30.5%) had negative cultures and 125 (47.7%) had mixed bacterial growth in their repeat cultures. Positive results (≥ 104 CFU/ml of a urinary pathogen) were obtained for 57 women (21.8% [95% CI 17.1–27.0]). For 37 (14.1%), the repeat specimen grew 104–105 CFU/ml of microorganisms; whereas for 20 women (7.6% [95% CI 4.9–11.3]), it grew ≥ 105 CFU/ml. Among women with positive (>104 CFU/ml) compared with those with negative or mixed growth, rates of urinary symptoms

were higher (38.6% vs 23.4%, $p=0.028$), abnormal dipstick results (49.1% vs 21.0%, $p<0.001$) and hydronephrosis, as demonstrated by renal ultrasound (12.3% vs 2.0, $p=0.003$). In a multivariate logistic regression analysis, hydronephrosis was associated with the occurrence of a positive repeat culture (aOR = 10.65, 95% CI 2.07–54.90). The sensitivity and specificity for predicting a repeat urine culture with ≥ 105 CFU/ml were 12.9% and 94.3% respectively, for urinary symptoms; and 19.7% and 97.4% respectively, for abnormal dipstick results.

CONCLUSIONS

Mixed bacterial growth might represent a true urinary tract infection in a considerable proportion of women who are symptomatic and have an abnormal dipstick urinalysis.

EDITOR'S COMMENTS

This study is published to highlight the importance of urine culture test in pregnant women. Most often we come across the report as mixed growth of organisms. It is important not to take this report as negative, but rather it should be repeated as urosepsis is one of the most common causes of sepsis in pregnancy.

Effect of Yoga in Pregnancy on Maternal Pelvic Floor Distress Symptoms — A Randomised Control Study

Aarti Sharma, JB Sharma, Rajesh Kumari, Nisha Preety, Rohini Dayma
International Journal of urogynaecology, July 2024

INTRODUCTION AND HYPOTHESIS

Pregnancy is associated with an increase in pelvic floor dysfunction. Yoga, an ancient Indian practice involving asanas (physical postures), pranayam (breathing patterns) and meditation, can help women to control their pelvic floor muscles. However, the literature to support yoga as a remedy for pelvic floor dysfunction is lacking. We hypothesized that yoga could be an important method in improving pelvic floor dysfunction in pregnancy.

METHODS

In a randomised control study, 200 pregnant women matched for age, weight, parity and physical activity were randomised at the 13- to 20-week period of gestation into two groups: group I ($n=100$, undergoing yoga therapy) and group II ($n=100$, given usual antenatal care). A trained instructor provided two physical sessions, each lasting for 60 min and further online sessions for 5 days a week for 3 months. The Pelvic Floor Distress Inventory (PFDI-20) questionnaire was used to assess the primary outcome at recruitment, 32 weeks (antenatal), 1 week and 6 weeks post-partum in both groups.

RESULTS

In the 200 women randomised and matched for age and parity, there were no complications seen throughout the pregnancy and none of the patients was lost to follow-up in either group. The proportion of women exhibiting a decline in PFDI-20 scores was greater in group 1 (24%) than in group 2 (8%). The mean difference of scores between recruitment and 6 weeks post-partum was statistically significant (p value = 0.0026).

CONCLUSIONS

Yoga in pregnancy significantly improves pelvic floor dysfunction in an easy manner with no proven adverse effects.

EDITOR'S COMMENT

This study was published as it shows the importance of exercise and yoga in pregnant women. We very well highlight and convey the importance of diet in our patients but fail to tell them importance of exercise and yoga. In modern day world with longer life expectancy, it is important to explain the importance of yoga and exercise on pelvic floor and abdominal muscles for good quality of life.

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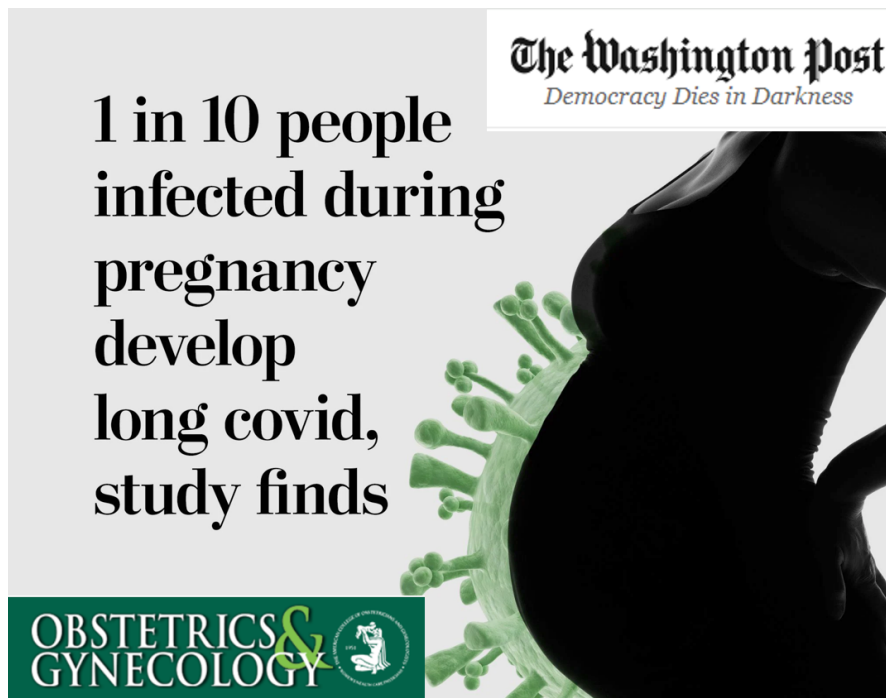
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News Flash

Dr. Jaya Chawla

Professor

Department of Obstetrics and Gynaecology, ABVIMS & Dr RMLH



OBSTETRICS: ORIGINAL RESEARCH

Post-Acute Sequelae of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) After Infection During Pregnancy

All medical disorders when studied in detail often find pregnant women as part of the exclusion criteria. It is more of a rule than an exception since pregnancy is a unique person-in-person phenomenon with its concomitant hormonal and other physiological alterations that are almost impossible to distinguish from the disease in question, to at least a certain extent. This leaves the effect of medical disorders in pregnancy a relatively untouched aspect. The same applied to COVID where the long-term effects were hitherto barely understood. An article in the July issue of the Journal of Obstetrics & Gynaecology also popularly known in the scientific world as *the Green Journal*. (Metz, Torri D. et al) has caught the attention of the medical and the social world alike where report after a study on 1500 pregnant women from multiple centres in the US, followed up for more than 10 months, that the incidence of long COVID in women who acquire the disease during pregnancy to be nearly 10% which is higher compared to their non-pregnant

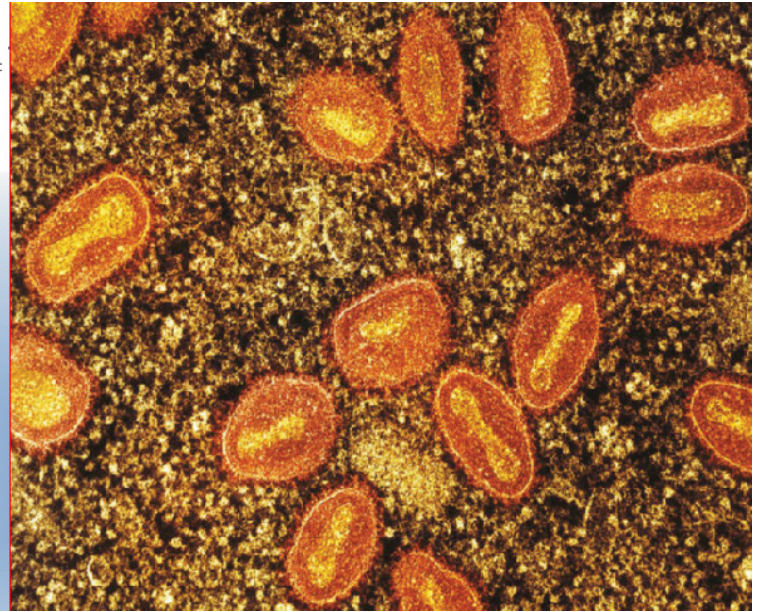
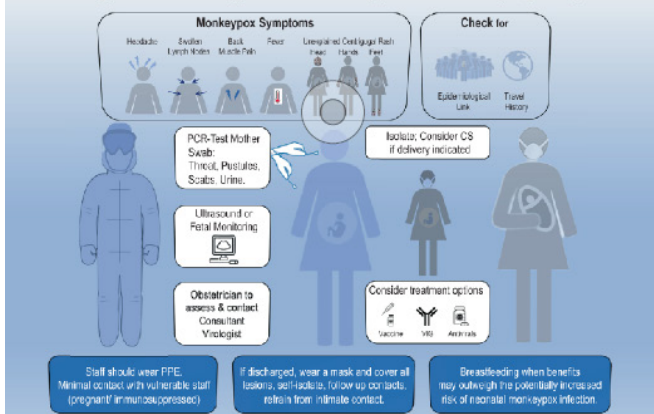
counterparts. Obesity, depression or anxiety disorders, before acquiring infection, self-confessed financial challenges, and the need for oxygen supplementation during the acute phase of the infection were factors more likely to be associated with post-acute sequelae of the COVID-19 infection. The research was conducted as part of the National Institute of Health's 'Researching COVID to Enhance Recovery (RECOVER) Consortium' research.

While reports from other parts of the world are yet to drop in, it compels us to take a closer look at the history of women who present with fatigue, malaise, or gastrointestinal symptoms and have a baby 10 months or less. Their non-specific symptoms would often confound the workup otherwise. The insight that a history of COVID-19 infection during pregnancy could have an association with the current complaints could open more vistas of management as we acknowledge the slightly different course of disease in women with pregnancy.

WHO declares mpox a public health emergency of international concern

Mpox spread mirrors historical spread of HIV in Africa via transport corridors, sexual

Diagnosis and management of monkeypox infection in pregnancy



WHO on August 14, 2024, declared Monkey Pox a Public Health emergency of international concern the second time around, the first being in 2022. Monkey pox caused by an Orthopox virus similar to smallpox, was believed to have been present in the Democratic Republic of Congo for more than a decade. It was when the numbers started increasing alarmingly and it was found that the disease is no longer just endemic in Africa that the WHO took note and issued its declaration cited above. While the 2022 outbreak was caused by the strain Clade 1a, the 2024 strain is being named Clade 1b. The latter's genome suggests changes that show that it has been infecting humans for a while. Clade 1 b is more transmissible than clade 1a which was found in humans close to wildlife. Intimate contact including kissing and sexual associations is the major route of transmission besides others. That is why it is found more commonly in men who have sex with men (MSM) and also HIV-infected populations.

The obvious concern in the minds of the Obstetricians then was, "What are the implications for pregnant women?" Much of the data in the literature is more speculative and less scientific leading to more alarm than assurance.

The CDC in its June 11, 2024 publication sheds some light on the enigma. The disease is believed to be just like any other viral illness in pregnancy with a prodrome including malaise, fever, and lymphadenopathy. The fever is indistinguishable from other causes of febrile illness until the characteristic maculopapular rash breaks out. The

diagnosis needs to be confirmed with PCR. The disease is more likely in the presence of other STIs. Confirmed cases of disease have been associated with compromised outcomes in pregnancy which include early losses, preterm births, later stillbirths even neonatal mpox. Diagnosis needs to be confirmed by demonstration of the viral DNA by PCR or Next-Generation sequencing of a clinical specimen or isolation of MPXV in culture.

Treatment is with tecovirimat, an antiviral agent. This agent is FDA-approved for use in smallpox in pregnancy. Its use to treat monkeypox is not FDA-approved currently but is recommended as per the CDC non-research expanded access Investigational New Drug (EA-IND) protocol also known as compassionate use. Animal studies where up to 23 times higher than the recommended human dose has been administered have not shown any foetal adverse effects in pregnancy. It is not certain if the drug prevents vertical transmission. Tecovirimat is excreted in breast milk as per evidence from animal studies. However, the doses are unlikely to be therapeutic for the neonate should they need treatment.

There are no mpox-specific vaccines yet. However, the ones against smallpox have been tested. One such vaccine, Jynneos, produced by a biotechnology company in Denmark, contains an inactive virus incapable of generating disease but capable of generating an immune response. WHO claims 80% efficacy for one dose and 82% for two doses. They recommend two doses.

Snitch Snatchers

Dr. Preeti Sainia

CMO NFSG

Department of Obstetrics and Gynaecology, ABVIMS & RML Hospital

- Pectineal ligament is an alternate name for
 - pubocervical ligament
 - inguinal ligament of cooper
 - lacunar ligament
 - uterosacral ligament
- Gold standard first-line surgery for women with uncomplicated sui
 - Midurethral slings
 - Burchs colposuspension
 - Pubovaginal slings
 - Vaginal hysterectomy
- The bladder storage is primarily controlled by
 - Sympathetic system
 - Parasympathetic system
 - Partly by both
 - None
- The main neurotransmitter used in bladder muscle contraction is
 - acetylcholine
 - gaba
 - dopamine
 - norepinephrine
- Normal flow rate during voiding with detrusor pressure less than 50 cm of water is
 - > 15 MI/sec
 - < 10 MI/sec
 - < 3 MI/sec
 - > 50MI/sec
- According to the society of obstetricians and gynaecologists of canada clinical practice guidelines state that even _____ cfu is sufficient in the setting of uti symptoms.
 - 10^2
 - 10^3
 - 10^4
 - None of the above
- Which pelvic floor disorder is most common in women
 - Fecal incontinence
 - Urinary incontinence
 - Symptomatic prolapse
 - Pelvic pain
- The inferior layer of the urogenital diaphragm is the
 - central perineal tendon
 - perineal membrane
 - colles' fascia
 - scarpa's fascia
- The internal urethral sphincter is also called
 - Rhabdosphincter
 - Lissosphincter
 - Pyloric sphincter
 - None of the above
- A silicone catheter can stay in situ for
 - 1 month
 - 14 days
 - 3 months
 - 6 months

Answer Key to Quiz 4, July 2024

- Kerala
- Frameless IUCD
- Dmpa can be started immediately if she has been using the hormonal method correctly and consistently and reasonably sure of non-pregnant status
- 104 Mg/0.65MI
- Nestorone
- Polylactic acid
- 25-30 Mcg/day
- Within 90 days from the occurrence of the event of death/ failure/complication
- 3 Hrs
- Kerala

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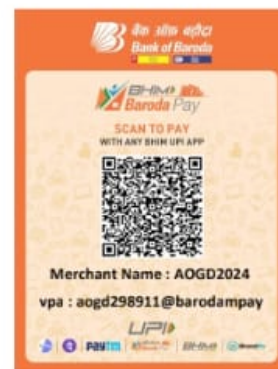
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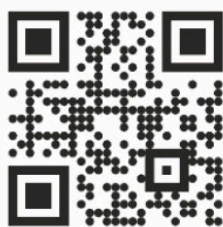
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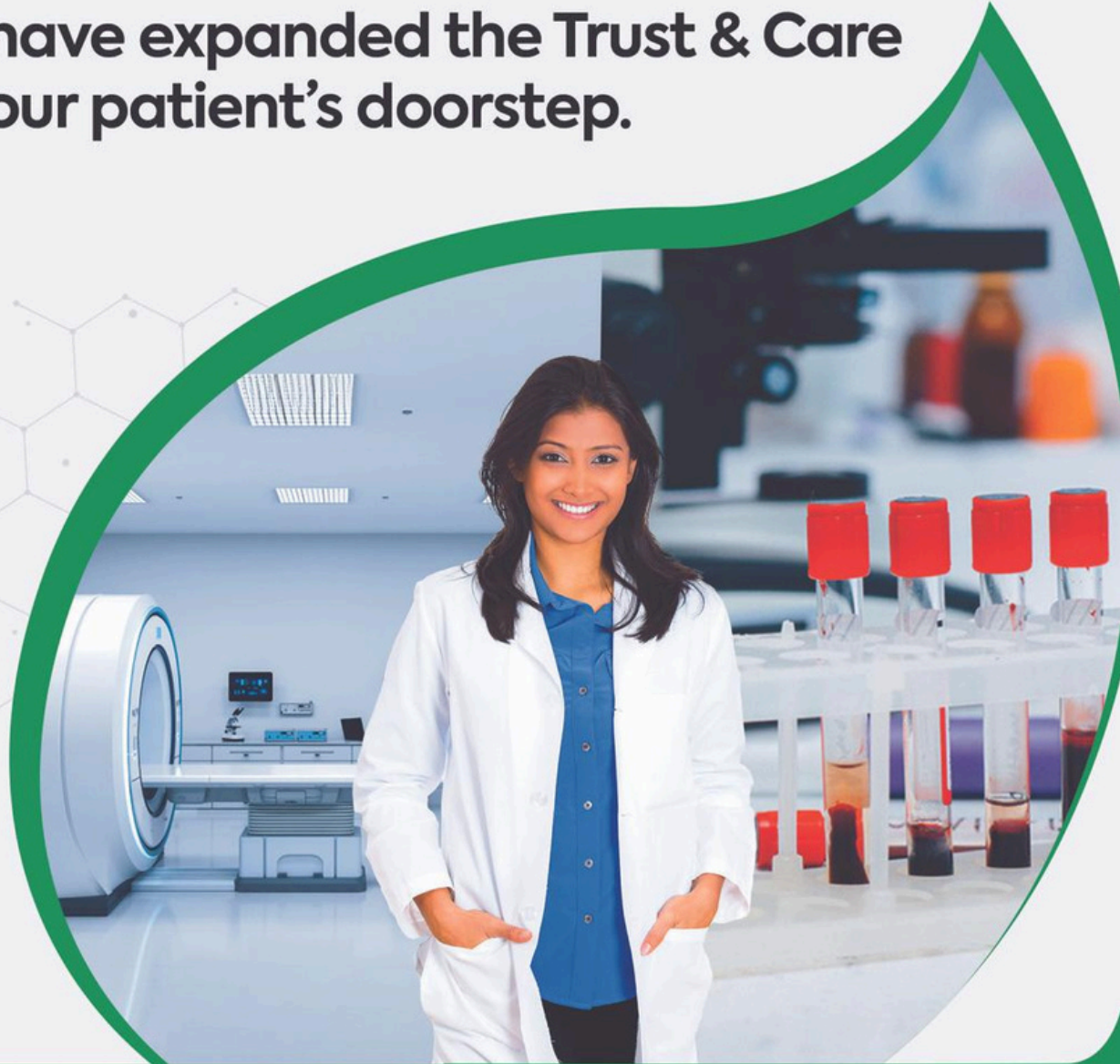


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