AOGD BULLETIN

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WITH HER: HEAL, EMPOWER, RESPECT- EVERY STEP OF THE WAY

Theme:
Placenta Accreta Spectrum- The Art and Science of Preparedness

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From the President's Desk

It is with great pride and pleasure that I welcome you to the inaugural issue of the **AOGD AIIMS Bulletin** — a publication that marks a significant step forward in our Association's commitment to clinical education, evidence-based practice, and the continuous advancement of women's healthcare in India.

This first issue could not have chosen a more timely or consequential theme. Placenta Accreta Spectrum has emerged as one of the defining challenges of contemporary obstetric practice — a condition whose incidence continues to rise in parallel with increasing caesarean section rates, and whose outcomes remain critically dependent on how well prepared we are before we ever enter the operating theatre. Preparedness is not a passive state; it is an active, deliberate, and collective endeavour — one that demands investment in training, protocols, infrastructure, and above all, in the knowledge that this bulletin seeks to deliver.

What distinguishes this initiative is its intent to serve every member of our community — from the senior consultant refining her surgical approach to the resident navigating her first encounter with a complex PAS case. By bringing together the expertise of experienced clinicians, the rigour of evidence-based medicine, and the energy of our young professionals, this bulletin aspires to be both a reference and an inspiration.

I am also particularly moved by the introduction of the "Her Story… In Her Words" section — a timely reminder that our clinical mission is ultimately measured not by the complexity of our interventions, but by the dignity, safety, and empowerment of the women in our care.

I extend my heartfelt congratulations to the Editorial Team for the dedication, and vision they have brought to this endeavour. I have no doubt that this bulletin will become an enduring resource for our membership and a testament to what the AOGD stands for.

With warm regards and best wishes,

Dr Neena Malhotra
Association of Obstetricians & Gynecologists of Delhi (AOGD)

From the Secretarial Desk

Dr K Aparna Sharma
Honorary Secretary

Dr Jyoti Meena
Joint Secretary

Dr Juhi Bharti
Joint Secretary

Dear AOGD Members,

It is both an honour and a privilege to share my inaugural message from the secretarial desk at the All India Institute of Medical Sciences, New Delhi. As we begin this new journey, I am truly excited to take over from the outstanding team at Lady Hardinge Medical College, whose contributions have set a high benchmark.

Our theme for this term, "With HER (Heal, Empower, Respect)…Every Step of the Way," reflects our unwavering commitment to women-centric care—ensuring that every woman receives compassionate, respectful, and holistic support throughout her healthcare journey.

In alignment with this vision, our first bulletin is themed "Placenta Accreta Spectrum: The Art and Science of Preparedness."This issue underscores the importance of early diagnosis, meticulous planning, and multidisciplinary collaboration in managing Placenta Accreta Spectrum, a condition that continues to challenge obstetric practice. Her Story… In Her Words'—.a section has been added in the bulletin which restores voice and power to every woman who places her trust in our care. It reminds us that beyond the rhythm of monitors and the precision of our hands, there lives a story—fragile, fierce, and deserving of witness.

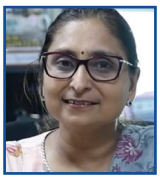
I extend my sincere congratulations to the editorial team for putting together a comprehensive and insightful collection of articles on this important subject. I also wish to acknowledge and thank all the contributing authors for sharing their expertise and enriching this bulletin with valuable, practice-oriented knowledge.

I look forward to your continued support and active engagement as we move forward together in advancing excellence in women's healthcare.

AOGD Secretariat

From the Editor's Desk

Dr Reeta Mahey



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We are delighted to present the inaugural issue of the AOGD AIIMS Bulletin, dedicated to a topic that demands both clinical mastery and institutional preparedness “Placenta Accreta Spectrum: The Art and Science of Preparedness”.

Placenta Accreta Spectrum represents one of the most challenging and consequential conditions encountered in contemporary obstetric practice. Its successful management rests not on a single intervention, but on the seamless convergence of surgical precision, anticipatory planning, and coordinated multidisciplinary care. In curating this issue, our aim has been to move beyond theoretical frameworks and offer our readers practical, evidence-based guidance that is immediately applicable to real-world clinical scenarios — from antenatal diagnosis and counselling through to intraoperative decision-making and postoperative care.

This issue also marks the introduction of some meaningful additions. In the spirit of “HER — Heal, Empower, Respect”, we are proud to launch "Her Story… In Her Words", a dedicated section that places the patient's lived experience at the heart of our clinical narrative, reminding us that behind every protocol is a woman whose voice deserves to be heard. We are also introducing patient information leaflets as a practical resource to support informed consent and shared decision-making in everyday practice.

We extend our sincere gratitude to all contributors who have generously shared their expertise and scholarship. It is our hope that this issue serves not merely as a reference, but as a trusted companion in the delivery suite, the operating theatre, and the multidisciplinary team meeting.

Happy Reading!

The Editorial Team

Unmasking Placenta Accreta: The Biology of Invasion and Burden of Risk

Vaishnavi Maurya[1], Sruthi Bhaskaran[2]
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Placenta accreta spectrum (PAS) represents a disorder of abnormal placental attachment and invasion, where the placenta fails to separate normally from the uterine wall at delivery.[1,2] It is now understood that this condition arises not from overly aggressive trophoblasts, but from a defect in the uterine lining, most commonly due to prior uterine surgery.[3]

Over the past few decades, PAS has shifted from a rare obstetric condition to a significant clinical problem, largely driven by the rising rates of cesarean sections and other uterine interventions.[4,2] These procedures disrupt normal endometrial healing, leading to defective decidualization and loss of the natural barrier that limits placental invasion.[3]

As a result, the placenta can attach abnormally deep into the uterus, leading to varying degrees of invasion—from superficial attachment to deep myometrial or even extrauterine extension.[1] Clinically, this is important because PAS is associated with severe maternal morbidity, particularly massive hemorrhage at the time of delivery, often requiring complex surgical management including hysterectomy.[1, 5]

Understanding the underlying mechanisms of abnormal placentation is therefore essential for early diagnosis, risk stratification, and optimal management of this increasingly encountered condition.[6, 2]

DEFINITION AND NOMENCLATURE

Placenta accreta is defined as abnormal trophoblast invasion of part or all of the placenta into the myometrium of the uterine wall.[1, 3]

PAS is most commonly classified based on the depth of invasion (FIGO, 2019).[7]

Table 1. Proposed grading of Placenta Accreta Spectrum based on depth of invasion (FIGO).

Grade	Sub type	Clinical Criteria	Histological Criteria
Grade 1	**Abnormally adherent placenta:** Placenta accreta / creta	**Vaginal delivery:** No separation with oxytocin and gentle cord traction; attempts at manual removal cause heavy bleeding requiring intervention. **Laparotomy/Cesarean:** Same findings; uterus shows no placental bulge, no invasion through serosa, minimal or absent neovascularity.	Absent decidua between villous tissue and myometrium with placental villi attached directly to the superficial myometrium Diagnosis requires hysterectomy specimen; cannot be made on delivered placenta or random biopsies.
Grade 2	**Abnormally invasive placenta:** Placenta increta	**At laparotomy:** Bluish/purple discoloration and uterine bulge over placental bed; marked hypervascularity (dense vascular network or parallel vessels). No invasion through serosa. Gentle cord traction pulls uterus inward without placental separation (**dimple sign**).	Placental villi within the muscular fibers and sometimes in the lumen of the deep uterine vasculature
Grade 3a	Abnormally invasive placenta: **Placenta percreta limited to serosa**	**At laparotomy:** Placental tissue invades up to/ through uterine serosa; abnormal serosal findings. No invasion into adjacent organs; clear surgical plane between uterus and bladder.	Villi reach or breach uterine serosa.
Grade 3b	Abnormally invasive placenta: **Placenta percreta with bladder invasion**	**At laparotomy:** Placental tissue invades bladder; no clear plane between bladder and uterus.	Villi breach serosa and invade bladder wall/urothelium.
Grade 3c	Abnormally invasive placenta: **Placenta percreta with invasion of other pelvic organs**	**At laparotomy:** Invasion into pelvic structures (broad ligament, vaginal wall, pelvic sidewall ± bladder).	Villi breach serosa and invade pelvic tissues/organs (± bladder involvement).

In addition to depth, PAS can also be described by its extent across the placental bed, and may be focal, partial, or total depending on how many cotyledons are involved.[4]

Similar to the FIGO system, histologic subcategories also classify PAS based on the degree of invasion and local tissue destruction, as proposed by expert groups from multiple gynecologic societies.[8]

Table 2. Proposed subcategories of Placenta Accreta Spectrum based on histologic findings.

Proposed PAS Grade	Invasion Depth	Histologic Findings
PAS Grade 1	Noninvasive	Grossly adherent placenta by manual palpation. Myometrial cross sections show a smooth placental-myometrial interface and uniform myometrial thickness without thinning.
PAS Grade 2	Superficial invasion	Cross sections show an irregular placental-myometrial interface without involvement of the outer myometrium (i.e., preservation of >25% of the wall thickness relative to the uninvolved myometrium).
PAS Grade 3A	Deep invasion	Cross sections show an irregular placental-myometrial interface with involvement of the outer myometrium (i.e., with preservation of <25% of the wall thickness relative to the uninvolved myometrium). The serosa is intact.
PAS Grade 3D	Deep invasion with disruption of serosa	Deeply invasive placenta with disruption of the uterine serosal surface (D = deep invasion).
PAS Grade 3E	Deep invasion with adherent extrauterine structures	Placental invasion into adjacent organs or extrauterine fibroadipose tissue, confirmed by microscopy (E = extrauterine invasion).

INCIDENCE AND EPIDEMIOLOGY

The global incidence of Placenta Accreta Spectrum (PAS) has undergone a dramatic escalation in recent decades, a trend that directly mirrors the escalating rates of cesarean deliveries worldwide.[2,4] Historically, PAS was considered a rare obstetric complication, with an estimated occurrence of approximately 1 in 2,500 pregnancies.[2] However, contemporary epidemiological data indicates that this rate has surged to as high as 1 in 500 pregnancies.[2] This exponential increase is fundamentally driven by the rising prevalence of prior uterine scarring[3,4] Consequently, what was once a rare pathological anomaly is now a leading cause of severe maternal morbidity and peripartum hysterectomy in modern obstetric practice[1,5]

PATHOPHYSIOLOGY

Physiology of Normal Placentation

Normal placentation begins with preparation of the uterus. Under hormonal control, the endometrium undergoes cyclical changes—estrogen drives the proliferative phase, while progesterone in the secretory phase makes the uterus receptive for implantation. During this time, stromal cells undergo decidualization, producing factors like prolactin (PRL) and IGFBP-1, which regulate trophoblast invasion, immune tolerance, and angiogenesis.[6]

After implantation, the trophectoderm differentiates into trophoblasts, which follow two main pathways[6]:

1. In the villous pathway, cytotrophoblasts fuse to form syncytiotrophoblasts (STBs), which produce hCG and enable exchange of nutrients and gases between maternal and fetal blood.[6]
2. In the extravillous pathway, cytotrophoblasts form anchoring villi, giving rise to extravillous trophoblasts (EVTs).[6]

Interstitial EVTs invade the decidua up to the inner myometrium (junctional zone), anchoring the placenta.[6]

Endovascular EVTs remodel spiral arteries into low-resistance, high-capacity vessels, ensuring adequate blood flow to the fetus.[6]

This invasion is tightly regulated. Trophoblasts release matrix metalloproteinases (MMPs) to allow invasion, while the decidua produces tissue inhibitors (TIMPs) to limit it.[6] As trophoblasts reach the junctional zone, their invasive activity decreases, marking the normal endpoint of invasion.[6]

Overall, normal placentation depends on a balance between trophoblast invasion and maternal control.[6] Too little invasion leads to poor placental perfusion, while excessive invasion can result in conditions like PAS.[6]

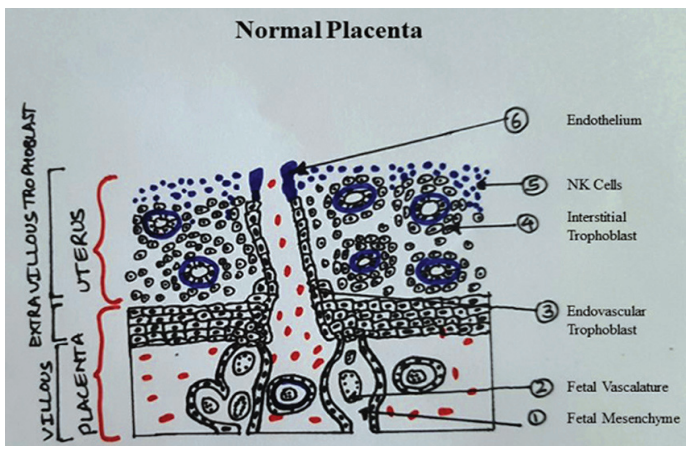

Figure 1. Invasion of trophoblast during normal placentation.[3]

(Picture Courtesy: Ali H. Best Practice & Research Clinical Obstetrics and Gynaecology. 2021;72:4–12.)

A number of theories have been proposed to explain the pathophysiology of PAS. These include:

1. Uterine wall injury:
    - Placenta accreta spectrum (PAS) develops mainly due to damage to the uterine wall, most commonly from prior surgeries such as cesarean section, myomectomy, or curettage.[3,6]
    - This leads to defective or absent decidualization, with loss of normal regulatory signals, inflammation, and formation of a fibrotic, collagen-rich environment, resulting in poor control of trophoblast invasion.[3,6]
    - In scarred areas, key protective layers—the decidua basalis and Nitabuch's layer—are deficient or absent.[3,6]
    - These layers normally act as a physical barrier and also produce inhibitory factors such as prolactin, IGFBP-1, and TIMPs, which limit trophoblast invasion.[6]
    - Their absence leads to a loss of regulation at the maternal–fetal interface. Importantly, PAS occurs not due to aggressive trophoblasts, but due to failure of maternal control mechanisms.[3,6]
    - When implantation occurs over a scar, trophoblasts can directly invade the myometrium.[6]
    - Normally, early hypoxia guides trophoblasts toward spiral arteries for vascular remodeling.[6]
    - In scarred areas lacking normal vasculature, this guidance is disrupted, and persistent hypoxia keeps trophoblasts in an invasive state, leading to deeper penetration into the uterine wall.[6]
2. Sustained epithelial to mesenchymal transition:
    - Beyond hypoxia, the scarred uterine environment itself promotes continued trophoblast invasion.[6]
    - The scar tissue is structurally abnormal, with increased collagen deposition, fibrin accumulation, and ECM stiffness, which facilitates deeper anchoring and invasion.[6]
    - In PAS, extravillous trophoblasts (EVTs) show a persistently active invasive phenotype due to sustained epithelial-to-mesenchymal transition (EMT).[6]
    - Normally, EMT is temporary and stops after early invasion, but in PAS it fails to switch off, leading to continued migration and deeper invasion.[6]
    - This persistent EMT is driven by altered signaling pathways, especially TGF-β and Wnt, which promote trophoblast invasion, collagen production, and myofibroblast activation, further increasing ECM stiffness.[6]
    - Mechanical stress within the scar also contributes. Increased activity of Piezo1 leads to release of inflammatory mediators like IL-8 and G-CSF, which recruit and support trophoblast invasion.[6]
    - At the cellular level, EVTs show increased ZEB expression (promoting invasion) and reduced E-cadherin (reducing cell adhesion), making the cells more mobile.[6]
    - Overall, these changes create an environment where trophoblasts remain persistently invasive, leading to uncontrolled penetration into the uterine wall.[6]
3. Extracellular matrix degradation
    - In normal pregnancy, the decidual extracellular matrix (ECM) supports trophoblast movement while limiting the depth of invasion.[6]
    - Trophoblasts use matrix metalloproteinases (MMP-2 and MMP-9) to break down the ECM in a controlled manner, allowing regulated entry into maternal tissue.[6]
    - In PAS, this balance is disturbed, with increased MMP activity, leading to excessive ECM degradation and deeper trophoblast invasion.[6]
    - The scarred uterine tissue is abnormal, with excess collagen deposition, fibrin accumulation, and increased stiffness, along with poor structural integrity.[6].
    - This altered ECM not only fails to restrict invasion but also facilitates deeper anchoring of trophoblasts into the myometrium.[6]

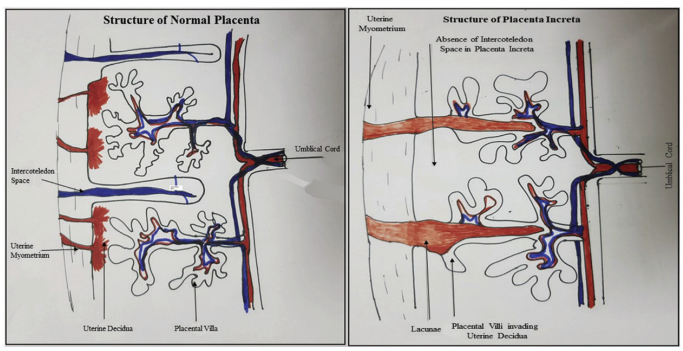

Figure 2. Structure of normal placenta and that of placenta increta with the loss of inter-cotyledon space and invasion of the decidua.[3]

(Picture Courtesy: Ali H. Best Practice & Research Clinical Obstetrics and Gynaecology. 2021;72:4–12)

4. Vascular remodelling
    - PAS shows increased angiogenesis (↑VEGF, Angiopoietin-2; ↓sFlt-1, VEGFR-2).[6]

Spiral artery remodeling is incomplete, so vessels fail to become low-resistance channels.[6]

- This leads to high-velocity flow, oxidative stress, and fragile, disorganized vessels, increasing hemorrhage risk.[6]

5. Immune modulation
   - In PAS, immune regulation at the implantation site is altered[6]. There are fewer uterine NK cells and increased regulatory T cells and macrophages, creating a more permissive environment for invasion.[6]
   - Elevated cytokines (TNF-α, IL-1β, IL-6) promote trophoblast recruitment and ECM breakdown, facilitating deeper invasion.[6]

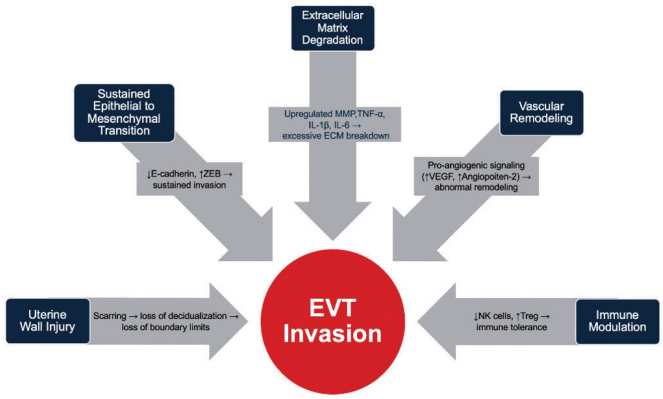

Figure 3. Summary of physiologic changes that promote EVT invasion in Placenta Accrete Spectrum.[6]

(Adapted from: Shteynman L et al. Pathophysiology and Management of Placenta Accreta Spectrum. Journal of Developmental Biology. 2025;13:45)

ETIOLOGY AND RISK FACTORS

There are several risk factors for development of PAS. Theoretically, any primary uterine anomaly or secondary damage to the uterine wall structure can lead to PAS disorders.[3]

1. Cesarean scar- This is one of the major risk factors for PAS. The risk is seen to increase with the number of caesareans.[2,4] According to studies, the rate of PAS increases from 0.3% in one caesarean to 6.74% in five or more.[4] In a subsequent pregnancy presenting with placenta previa, women who had a primary elective cesarean delivery without labor were more likely to develop a PAS disorder (OR 3.0, 95% CI 1.5–6.1).[4] There is limited evidence on suture materials used for uterine closure, single-layer vs double-layer uterine incision closure, and locked vs unlocked single-layer closures with subsequent development of placenta accrete.[4]
2. Placenta previa- This is the single most important risk factor for PAS. The risk of PAS with placenta previa without previous caesarean is about 3 %.[2,4] The risk increases with prior cesarean deliveries, 3%, 11%, 40%, 61%, and 67% for first, second, third, fourth, and five or more cesareans, respectively.[2,4]
3. Surgical procedures such as uterine curettage, manual removal of the placenta, postpartum endometritis and, more recently, hysteroscopic surgery, endometrial ablation, and uterine artery embolization, cause damage to the integrity of the uterine lining. These procedures are associated with PAS disorders in subsequent pregnancies.[3]

   PAS disorders have also been reported in women without prior uterine surgery, but with uterine pathology such as bicornuate uterus, adenomyosis, submucous fibroids, and myotonic dystrophy. However, they are not considered as major risk factors for PAS disorders.[4] The entry into the uterine cavity at myomectomy and the size of the myometrial scar may affect the risk for PAS disorders in subsequent pregnancies, though this risk is low.[4]
4. Additional risk factors include
   a. Advanced maternal age. This association is most likely due to confounding factors such as multiparity, risk of previa, and the risks of prior uterine surgery rather than advanced maternal age itself.[4]
   b. The Nordic Obstetric Surveillance Study, which investigated severe obstetric complications between 2009 and 2012 found OR of 3.1 for PAS disorders (absolute risk: 8.2 per 10 000) in pregnancies resulting from in-vitro fertilization (IVF).[4] A recent meta-analysis of cohort studies including 161 370 pregnancies resulting from Assisted Reproductive Techniques (ART) compared with 2,280, 241 spontaneous singleton pregnancies found no difference in the relative risk (RR) for PAS disorders.[4] More data is required to determine the impact of ART on PAS disorders and other placental and cord anomalies.[4]
5. It is likely that cesarean scar pregnancy in the first trimester represents a continuum of the same disease. The high risk of invasive placentation and / or major placenta previa later in pregnancy should be explained to women, along with the option to terminate the pregnancy.[5]

SUMMARY AND CLINICAL TAKEAWAY

- Placenta accreta spectrum (PAS) has evolved from a rare condition into a **major cause of severe maternal morbidity**, largely driven by the rising rates of caesarean sections.
- These procedures disrupt the normal **endometrial–myometrial interface**, creating the setting for abnormal placentation.

- Understanding these mechanisms is essential for **early risk identification, timely diagnosis, and appropriate multidisciplinary management**.

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From Suspicion to Confirmation: The Imaging Approach to PAS

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INTRODUCTION

Placenta accreta spectrum (PAS) represents a continuum of abnormally invasive placentation (Fig 1) characterized by defective decidualization and excessive trophoblast invasion beyond the normal decidua-myometrial interface.[1] This spectrum is historically categorized into three distinct grades: placenta accreta, where villi attach directly to the myometrium; placenta increta, where villi penetrate the myometrium; and placenta percreta, where villi breach the uterine serosa and may invade adjacent pelvic organs.[1] The recent increase in prevalence is largely attributed to the global rise in cesarean delivery rates, making it an almost entirely iatrogenic condition.[1] Given that PAS is a leading cause of massive obstetric hemorrhage and peripartum hysterectomy, accurate prenatal identification through imaging is critical for optimizing maternal and neonatal outcomes.[1]

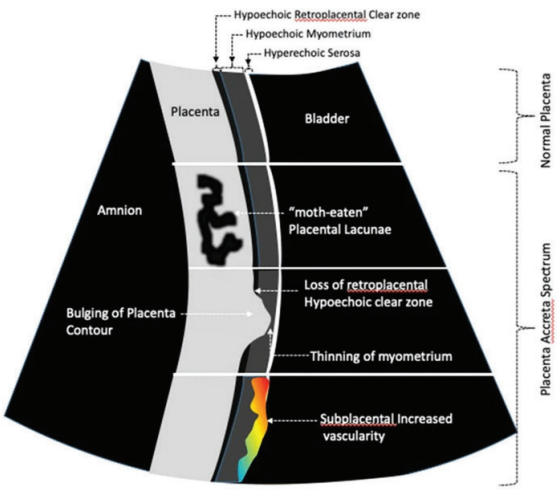

Figure 1: Schematic representation of placenta accreta spectrum (PAS)

WHEN TO SUSPECT PAS ON ROUTINE ULTRASOUND

Clinical suspicion of PAS must be triggered by a specific combination of surgical history and placental location[1]. The most significant risk factor is the presence of placenta previa or a low-lying placenta in a patient with a history of previous cesarean delivery.1 Routine fetal anomaly scans in the mid-trimester should always include placental localization to identify women at risk[1]. If the placental edge is less than 20 mm from the internal cervical os in a patient with a prior uterine scar, the clinician must maintain a high index of suspicion for PAS[1]. Other risk factors that warrant careful evaluation include advanced maternal age, high parity, previous uterine curettage, myomectomy, or assisted reproductive techniques[1]. On routine grayscale imaging, any loss of the normal hypoechoic retroplacental "clear zone"—which represents the decidua basalis and retroplacental veins—should be viewed as a potential indicator of abnormal invasion.[2]

INDICATORS ON FIRST TRIMESTER DIAGNOSIS

Advancements in imaging have allowed for the detection of PAS as early as the first trimester, with an accuracy as high as 93% using a two-stage screening strategy.[3] A *cesarean scar pregnancy (CSP)*, where the gestational sac is implanted within or in close proximity to a previous cesarean scar, is now recognized as a precursor to PAS later in pregnancy.[3] In the early first trimester (6–9 weeks), a low implantation of the gestational sac is highly predictive of potential PAS.[3] By the late first trimester (11–14 weeks), clinicians should evaluate for irregular placental-myometrial interfaces and the presence of intraplacental lacunae[3]. The measurement of the smallest myometrial thickness during the first trimester has also been shown to significantly improve the detection rate of morbidly adherent placenta.[3] Women presenting with a CSP should be counseled on the high risk of severe PAS and the potential need for hysterectomy if the pregnancy continues.[3]

ULTRASOUND AND DOPPLER SIGNS OF PAS

Ultrasound remains the primary diagnostic tool for PAS, although its sensitivity may be limited by factors such as a posterior placental location or elevated maternal body mass index[2,3]. Standardized sonographic markers include:

Abnormal Placental Lacunae: Often described as the most common and sensitive finding, these appear as multiple, large, irregular anechoic areas within the placenta, giving it a "Swiss cheese" or "moth-eaten" appearance.[2] Unlike normal placental lakes,

PAS-related lacunae often demonstrate high-velocity (>15 cm/s) turbulent or multidirectional flow on color Doppler.[2] (Fig 2)

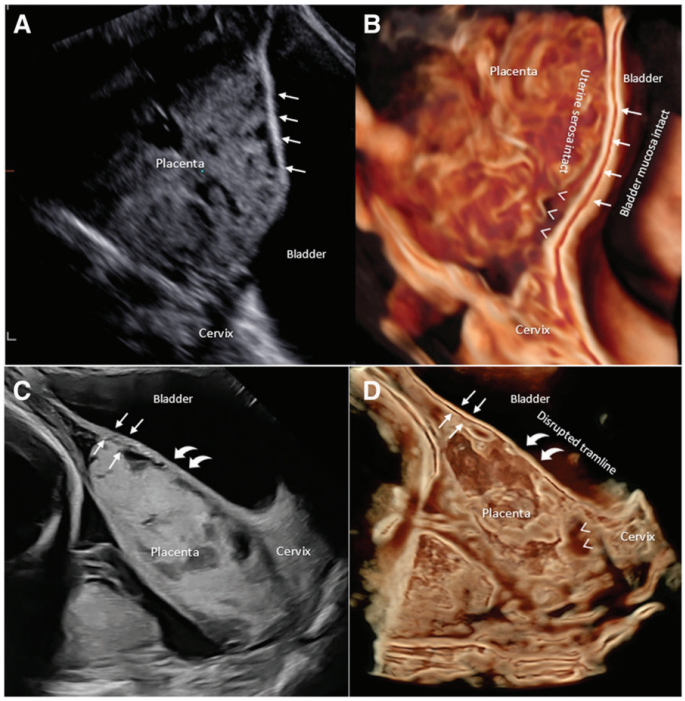

Figure 2:
(A) 2D TVS: echogenic uterine–bladder interface (arrows).
(B) 3D TVS: intact "tramline sign" with preserved retroplacental space (arrowheads) – no PAS.
(C) 2D TAS: normal and focally disrupted vesico-uterine interface (straight, curved arrows).
(D) 3D TAS: intact tramline with focal disruption and absent retroplacental space – suggestive of placenta increta. 7

Loss of Retroplacental Clear Zone: The focal or diffuse loss of the hypoechoic zone between the placenta and myometrium is a key marker, carrying a high negative predictive value (97%) for ruling out PAS.[2]

Myometrial Thinning: A retroplacental myometrial thickness of <1 mm is highly suggestive of deep invasion.[2]

Placental Bulge and Exophytic Mass: A focal bulging of the placenta beyond the expected uterine contour is an independent predictor of severe myoinvasive PAS.[2] The presence of an exophytic mass protruding through the serosa into adjacent structures is diagnostic of placenta percreta.[2]

Bladder Wall Interruption: This is the most specific sign for PAS, characterized by the loss of the normal echogenic line of the bladder wall, often associated with bladder "tenting".[2]

Abnormal Vascularity: Color Doppler is an essential adjunct for identifying bridging vessels that course perpendicularly toward the bladder and a disorganized distribution of vessels with calibers averaging >3 mm in abnormal areas[2,5] (Fig 3)

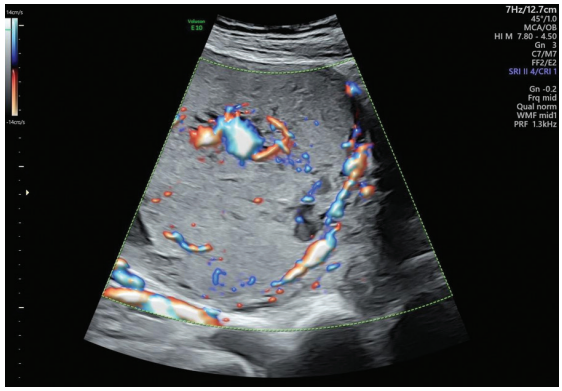

Figure 3: Abnormal Vascularity

MRI SIGNS OF PAS

While ultrasound is the first-line modality, MRI is indicated when ultrasound findings are inconclusive, when a posterior placenta is present, or when detailed mapping of extrauterine extension is required for surgical planning[4]. MRI provides valuable information on the topography and depth of invasion that assists in implementing individually tailored treatments.[4] Key MRI features established by joint consensus include:

Intraplacental T2-Dark Bands: This is the most sensitive MRI feature for PAS (sensitivity 82–89%)[4]. These are irregular bands (6–20 mm) extending from the maternal surface, representing areas of fibrin deposition from hemorrhage.[4]

Uterine-Placental Bulge: Deviation of the uterine serosa often results in a widening of the lower uterine segment, creating an "hourglass configuration".[4]

Loss of T2-Hypointense Retroplacental Line: Focal interruption of the dark interface behind the placental bed correlates with the sonographic loss of the clear zone.[4]

Abnormal Vascularization: This involves the presence of tortuous, hypertrophied vascular voids in the placental bed and along the serosa.[4] The "parametrial vessel sign" (vessels extending into parametrial fat) is highly specific (86.8%) for PAS involvement.[4]

Topographical Mapping: MRI is uniquely capable of dividing the uterine vascular zones into S1 (upper uterine body) and S2 (lower segment, cervix, and vagina) based on a perpendicular line drawn through the posterior bladder wall.[4] Invasion in the S2area is associated with a higher rate of failure for traditional uterine artery control and may require common iliac or aortic vascular control.[4]

INDICATIONS FOR MRI

MRI is indicated when ultrasound findings are inconclusive or when a posterior placenta is present, providing complementary information for surgical planning[4]. Consensus features for MRI diagnosis include:

Intraplacental T2-Dark Bands: This is the most sensitive MRI feature[4]. These are irregular bands (6–20 mm) extending

from the maternal to the fetal surface, representing fibrin deposition from hemorrhage[4].(Fig 4)

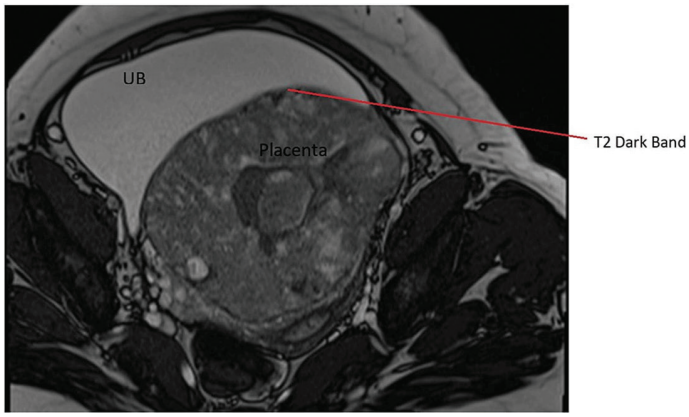

Figure 4: MRI scan image (axial view): Axial view showing a T2 dark band and placental bulging into the posterior wall of the urinary bladder (UB) with a loss of placental-myometrial junction

Uterine-Placental Bulge: Often accompanied by a widening of the lower uterine segment, creating an "hourglass configuration"[4].

Loss of T2-Hypointense Retroplacental Line: This correlates with the sonographic loss of the clear zone and is often seen alongside myometrial thinning[4]. (Fig 5)

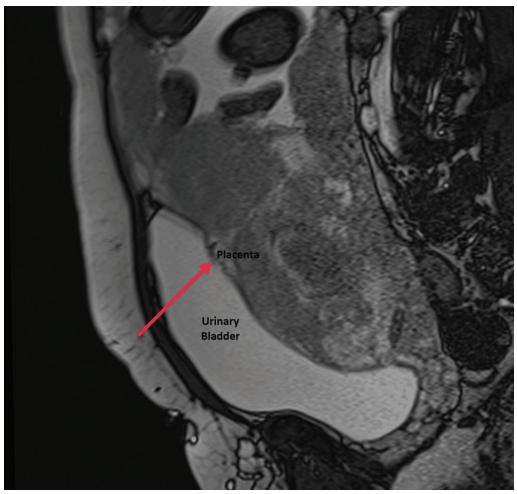

Figure 5: MRI scan image (sagittal view): The arrow showing the heterogenous placenta invading the posterosuperior border of the urinary bladder through the myometrium.[6]

Abnormal Vascularization: This involves the loss of uniform T2-hypointense flow voids and the presence of hypertrophied vascularity along the serosa[4]. The "parametrial vessel sign" has a high specificity (86.8%) for PAS[4].

Deep Invasion Markers: Myometrial thinning to <1 mm or a focal disruption of the myometrium indicates deep invasion[4]. Furthermore, an MRI dimension of greatest invasion exceeding 2.5 cm is a strong predictor of the need for a hysterectomy[4].

TAKE HOME MESSAGES

- Suspect PAS in any patient with placenta previa and a history of cesarean section.[1]
- First trimester screening (12–16 weeks) is highly accurate for early identification in high-risk groups.[3]
- Placental lacunae and bladder wall disruption are among the most specific ultrasound markers.[2]
- Color Doppler is crucial for identifying bridging vessels and abnormal placental bed vascularity.[2,5]
- MRI should be reserved for inconclusive ultrasound cases or posterior placentas, with T2-dark bands being the most sensitive marker for diagnosis.[4]

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Anticipate, Prepare and Deliver: A Structured Approach to PAS

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PAS management may necessitate elective hysterectomy and may be associated with severe obstetric haemorrhage, injury to urinary bladder and admission to intensive care unit. This review focuses on patient counselling, preoperative preparation and operative planning, the multidisciplinary approach, the role of interventional radiology, timing of admission and delivery.

PATIENT COUNSELLING

Comprehensive counselling for patients and relatives in cases of PAS needs to be initiated as soon as the diagnosis is suspected and confirmed and should continue through the antenatal, operative, and postpartum period.[1,2,3,4] Relevant counselling points include the following:

- Placenta accreta spectrum includes abnormal placental adherence and invasion ranging from superficial attachment to deep transmural invasion, and the severity of invasion influences the complexity of surgery and the risk of bladder or pelvic organ involvement.[1,3,4]
- Management entails classical cesarean section followed by hysterectomy without attempt to remove the placenta if it does not separate spontaneously.[1,3,4]
- There is a high probability of major blood loss, need for blood transfusion, invasive monitoring, postoperative intensive care, and possible injury to the urinary tract or surrounding pelvic structures.[1,2]
- Permanent loss of fertility consequent to hysterectomy requires a sensitively handled dialogue.[1,4]
- If essential fertility-preserving approaches may be considered depending on the expertise available. Option of delayed hysterectomy with inherent risks of complications must be discussed depending upon severity of morbidly adherent placenta explaining the risks of secondary haemorrhage, infection, readmission.[1,4]
- Mental health support is essential as the patient might be anxious regarding mortality, preterm birth, loss of reproductive potential, and prolonged hospitalization.[2,5]

It is vital to inform these patients that early admission may be necessary if they experience symptoms like pain, contractions, bleeding, or the rare occurrence of prelabour rupture of membranes. Furthermore, those living in remote areas should be advised admission or to relocate closer to their specialist referral hospital during the final stages of the third trimester to ensure rapid access to care.[1,2] The possibility of preterm birth, neonatal intensive care unit admission, and administration of antenatal corticosteroids should be discussed in advance to reduce decisional conflict during emergencies.[1,4]

PREOPERATIVE PREPARATION AND OPERATIVE PLAN

Preoperative preparation in placenta accreta spectrum involves maternal optimization, ensuring availability of facilities and surgical expertise along with detailed surgical planning.[1,2] The facility must have good blood bank support as well as adult and neonatal critical care unit and access to surgical specialists.[1,2,6]

Important components of preoperative preparation include the following:

- Imaging: Use targeted ultrasound to verify the placenta's position and depth of invasion, reserving MRI for cases where posterior placement or involvement of the bladder and parametrium is unclear.[1,2,6]
- Address prenatal anemia with blood transfusion or iron supplements (oral or intravenous) to ensure the mother's hemoglobin levels is more than Or equal to 11gm percent before the high-risk surgery.[2,7]
- Notify blood bank services early to prepare a massive transfusion protocol and ensure the availability of red cells, plasma, platelets, and cryoprecipitate.[1,4]
- Utilize intraoperative cell salvage technology if available, as it can decrease the need for donor blood during heavy bleeding.[1,4]
- Perform a thorough review of the patient's existing health conditions, VTE risk, medications, and previous surgical or imaging records.[2,4]
- Administer antenatal corticosteroids if delivery is expected at less than 34 weeks of gestation or as per facility protocol.
- Bed in the ICU or high-dependency unit must be ensured ahead of time for patients likely to face extensive surgery or massive blood loss.[2,5]

Surgical strategies must be tailored to the individual while remaining clearly defined. Before the operation date, the team should ideally determine the type of skin incision, the point of entry into the uterus, and the potential need for

ureteric stenting or cystoscopy. Additionally, the likelihood of a hysterectomy, emergency protocols for severe bleeding, and the specific duties of every theatre staff member must be established in advance.[2,5] A vertical abdominal incision is often preferred in complex cases because it can improve exposure and facilitate rapid conversion to extensive pelvic surgery if required.[5] The uterine incision should avoid the placenta to prevent immediate bleeding, and delivery should ideally be accomplished through a site distant from the placental mass.[1,5] Approach of delayed hysterectomy is an alternate to immediate hysterectomy to minimizing acute bleeding in cases of extensive placenta percreta.[8,9]

MULTIDISCIPLINARY APPROACH

The multidisciplinary approach is the cornerstone of safe care in placenta accreta spectrum. The literature consistently shows that planned management by an experienced team is associated with lower blood loss, fewer emergency procedures, improved coordination, and better maternal outcomes than unplanned intrapartum diagnosis.[1,2,6,7] Multidisciplinary care is therefore not merely desirable but a defining component of best practice.

The multidisciplinary team commonly includes the following specialists:

- Maternal-fetal medicine specialists or senior obstetricians with expertise in abnormal placentation.[1,2]
- Obstetric anaesthesiologists experienced in massive obstetric haemorrhage and invasive haemodynamic monitoring.[10]
- Gynaecologic oncologists or pelvic surgeons skilled in retroperitoneal dissection and complex hysterectomy.[2]
- Urologists when bladder invasion, ureteric distortion, or vesicouterine hypervascularity is suspected.
- Interventional radiologists where endovascular procedures are being considered.[11]
- Neonatologists prepared for late preterm delivery and possible neonatal intensive care unit support.[1]
- Transfusion medicine personnel, operating theatre nursing teams, and critical care specialists.[2,7,10]

A structured team meeting before delivery should document imaging findings, assign surgical responsibilities, confirm the anaesthetic strategy, review blood product availability, identify triggers for activating the massive transfusion protocol, and prepare postoperative care pathways.[2,7] Simulation and checklist-based preparation can be useful in placenta accreta spectrum because they improve communication, reduce ambiguity during crisis escalation, and align all teams around a predetermined operative sequence.[2]

ROLE OF INTERVENTIONAL RADIOLOGY

Endovascular techniques have been used with the aim of reducing pelvic blood flow, facilitating hysterectomy, controlling postpartum haemorrhage, or supporting conservative treatment pathways.[1,11] However, contemporary guidance does not recommend routine use in all cases, because evidence regarding consistent benefit is mixed and procedure-related complications can occur.[1,2]

Relevant interventional radiology strategies include the following:

- Prophylactic balloon occlusion of the internal iliac arteries or infrarenal aorta before surgery, with inflation after fetal delivery to reduce pelvic perfusion during placental bed surgery.[2,11]
- Selective uterine or internal iliac artery embolization for persistent haemorrhage, either intraoperatively or postoperatively.[4,11]
- Adjunctive embolization in conservative management when the placenta is left in situ and delayed bleeding occurs.[8,9,11]

Potential advantages include reduced intraoperative blood loss in selected centres and improved control of refractory haemorrhage.3,8 Nevertheless, limitations are important and should be stated clearly in academic writing. Balloon occlusion does not eliminate collateral pelvic circulation, may prolong preparation time, and exposes the woman to vascular injury, thrombosis, haematoma, contrast exposure, and radiation, although the fetal dose is usually limited when protocols are optimized. Therefore, interventional radiology should be considered on a case-by-case basis, informed by local expertise, imaging-defined anatomy, haemorrhage risk, and whether conservative management is planned.[1,2,11]

TIMING OF ADMISSION

The timing of hospital admission in placenta accreta spectrum should be individualized according to symptoms, obstetric history, distance from the tertiary centre, and the severity of placental invasion.[1,2,6] Universal prolonged admission for all women is not mandatory, but a low threshold for inpatient care is warranted because bleeding and labour may precipitate emergency delivery with significantly increased maternal risk.[1]

Point-wise principles for admission timing include the following:

- Stable asymptomatic women with reliable transport, clear counselling, and close proximity to the referral hospital may be followed as outpatients with frequent surveillance.[1,2]
- Women with recurrent antepartum haemorrhage, painful uterine activity, cervical shortening, preterm prelabour rupture of membranes, or significant logistical barriers to emergency access should be admitted antenatally.[2,3]

- Earlier admission may be appropriate in women with placenta percreta, suspected bladder invasion, or any bleeding episodes or other medical or obstetric comorbid conditions.[2,3]

DANGER SIGNS AND TIMING OF DELIVERY

Recognition of warning signs is crucial because deterioration in placenta accreta spectrum may be abrupt. The clinical goal is to deliver before spontaneous labour or uncontrolled haemorrhage while allowing enough gestational advancement to improve neonatal outcomes.[1,2] The balance between maternal safety and neonatal maturity underlies modern recommendations for planned late preterm delivery.

Danger signs that warrant urgent reassessment or admission include the following:

- Any episode of antepartum vaginal bleeding, especially if recurrent or increasing in severity.[1,2]
- Uterine contractions, abdominal pain, or symptoms suggestive of preterm labour.[2,3]
- Preterm prelabour rupture of membranes.[1]
- Haemodynamic instability, symptomatic anaemia, or reduced access to emergency transport.[2]
- Imaging findings suggestive of severe disease, such as extensive placental bulge, marked vesicouterine hypervascularity, or probable extrauterine invasion.[2,4,7]

The ACOG recommends planned delivery for stable cases in the window of thirty-four weeks and zero days to thirty-five weeks and six days of gestation, in the absence of extenuating circumstances, because this timing reduces the risk of labour and emergency bleeding while avoiding the neonatal disadvantages of earlier routine delivery.[1,4] Delivery before this window may be necessary in women with persistent bleeding, labour, rupture of membranes, fetal compromise, or maternal instability.[1,2] Some guidelines and specialist centres consider a slightly later individualized approach in carefully selected asymptomatic women, but such decisions require robust local expertise and immediate surgical readiness.[2]

The operative principle at delivery is equally important: forcible placental removal should be avoided when placenta accreta spectrum is suspected, because separation attempts can trigger massive haemorrhage.[1,4] Planned caesarean hysterectomy with the placenta left undisturbed remains the reference standard for most women with completed family size or extensive invasive disease.[1,4]

PREANESTHETIC CHECK-UP IN PAS

The preanesthetic check-up is a pivotal part of preparation for placenta accreta spectrum because anaesthetic planning must anticipate abrupt major blood loss, prolonged surgery, and possible conversion from regional to general anaesthesia.[2,10] Assessment should occur sufficiently in advance of surgery to permit optimization, counselling, and communication with the wider team.

Important elements of the preanesthetic check-up include the following:

- Detailed review of obstetric history, prior caesarean deliveries, previous anaesthetic exposure, medical disorders, airway status, and baseline functional reserve.[2,10]
- Documentation of haemoglobin concentration, platelet count, coagulation profile where indicated, blood group status, and availability of cross-matched blood products.[1,10]
- Planning for at least two large-bore intravenous lines, with arterial cannulation and possibly central venous access in major anticipated cases.[4,10]
- Selection of anaesthetic technique according to disease severity, predicted surgical duration, and team preference. Regional anaesthesia may be suitable for initial fetal delivery in selected stable cases, but general anaesthesia may be preferred when extensive pelvic dissection, haemodynamic instability, or massive haemorrhage is expected.[8,10]
- Preparation of rapid infusion devices, warming systems, point-of-care coagulation monitoring where available, vasopressors, tranexamic acid, and cell salvage.[4,10]
- Preoperative discussion with the patient about the possibility of conversion to general anaesthesia, postoperative ventilation, intensive care unit admission, and severe haemorrhagic complications.[2,10]

A good preanesthetic check-up also clarifies postoperative analgesia, thromboprophylaxis, and the pathway for recovery room or intensive care transfer.[10]

SUMMARY

- PAS exemplifies the need for protocol-based obstetric care in a high-risk setting.
- High-quality outcomes depend on timely patient counselling, meticulous preoperative preparation, explicit operative planning, a disciplined multidisciplinary approach, judicious use of interventional radiology, individualized admission strategy, prompt recognition of danger signs, appropriately timed planned delivery, and a comprehensive preanesthetic check-up.
- Across all these domains, the dominant principle is anticipation rather than reaction: when delivery is scheduled in an expert centre before labour or uncontrolled haemorrhage, maternal safety is substantially improved.

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Controlling the uncontrollable: Operative Management in Placenta Accreta Spectrum

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Placenta accreta spectrum (PAS) disorder is a major iatrogenic health challenge with high maternal morbidity and mortality. The worldwide incidence is rapidly rising paralleling the increasing caesarean delivery rate. The main risk associated with PAS is massive obstetric hemorrhage, which leads to secondary complications including coagulopathy, multisystem organ failure, and death.

COMPLICATIONS ASSOCIATED WITH SURGERY FOR PAS[1]

Median estimated Blood loss	2 – 3 L
Median units PRBC transfused	3.5 – 5.4 L
Large volume blood transfusion	5 - 40%
Bladder injury	7 – 48 %
Ureteric injury	0 – 18%
ICU Admission	15 – 66%
Bowel injury/ obstruction	2 – 4%
Venous thromboembolism	4%
Surgical site infection	18 – 32%
Reoperation	4 – 18%
Maternal Mortality	1 – 7%
Maternal Morbidity	24-67%

Diagnosis: Early antenatal diagnosis of PAS is crucial for reducing maternal morbidity and mortality. Although ultrasound (USG) is commonly used for diagnosis, absence of USG findings does not rule out diagnosis of PAS. MRI helps in assessing depth of invasion and lateral extension of myometrial invasion (posterior placenta). MRI is recommended as adjunctive tool when ultrasound findings are inconclusive.

INTRAPARTUM CLINICAL DIAGNOSIS OF PAS:

There is high risk of false positives with antenatal diagnosis, hence there must be robust intra-partum evidence of PAS before surgical treatment is commenced. however, major hemorrhage should not be caused by inappropriate attempts to manually remove Adherent placenta.[2]

After vaginal delivery:

An experienced obstetrician finds no plane of cleavage during MRP.

At laparotomy:

Step 1: Observing a placental bulge, abnormal neo-vascularity in lower segment, or frank invasion through uterine surface.

Step 2: Dimple sign: gentle cord traction causes uterine wall to pull inwards without placental separation

Step 3: If PAS not diagnosed by previous 2 steps, then gentle digital exploration done to assess for plane of cleavage avoiding hemorrhage.[2]

Timing of Delivery: Optimal outcomes are achieved through **scheduled non-emergent delivery** between **34-36 weeks**. Every episode of prepartum hemorrhage increases the likelihood of an unscheduled, high-risk emergency surgery.

CONSENT

- **Surgical Approach:** Intended plan of management (primary hysterectomy, conservative management or partial resection) and Prophylactic salpingectomy if hysterectomy
- Morbidity Risks : Consent for massive hemorrhage, disseminated intravascular coagulation (DIC), infection, , increased risk of ureter injury, hysterectomy, Intentional or accidental cystotomy (+/- bladder repair: +/- ureteric stenting if trauma is near to the ureteric orifice), damage to other viscera including bowel (+/- potential risk of colostomy), Major vessel injury &/or ligation (prophylactic or indicated), pressure sores from prolonged surgery, venous thrombo-embolism and intensive care unit (ICU) admission.
- Consent for Risks associated with prematurity
- **Fertility Preservation:** If preservation attempted, high risk of recurrence (22%–29%) and associated risks such as severe bleeding, uterine rupture, postpartum hemorrhage, & peripartum hysterectomy and Long-term complications like Intrauterine adhesions & secondary amenorrhea.
- **Transfusion: Consent for Massive blood transfusion (MBT) and associated risks**.
- Additional possible interventions (interventional radiology) in case of massive hemorrhage.

NON-CONSERVATIVE MANAGEMENT: CAESAREAN HYSTERECTOMY WITH PLACENTA LEFT IN SITU

All guidelines recommend delivery of PAS patients at Center of Excellence with a dedicated multidisciplinary team

(MDT). The recommended treatment for PAS is **Cesarean hysterectomy with placenta left in situ**. Surgical expertise is crucial due to complexities associated with PAS, such as pelvic adhesions, a hypervascular lower uterine segment and invasion of surrounding pelvic organs.[2]

Position: Lithotomy position is recommended for evaluation of intraoperative bleeding vaginally and cervical manipulation during hysterectomy.[1]

Anesthesia: The choice of anesthesia in suspected PAS cases is made by attending anesthesia team, with a risk (8%–45%) of converting from regional to general anesthesia.**Incision**: The abdominal incision must allow sufficient access to uterus. A midline incision/high Pfannenstiel is preferable. Ultrasound (pre- or intraoperative) aids incision planning by localizing the upper placental margin. Intraoperatively Probe is placed directly placed on uterus and placental margin Mapped with small, superficial diathermy marks.[2]

Techniques: Total hysterectomy is recommended (if cervical involvement present) to mitigate cervical stump-related complications. Subtotal hysterectomy provides no protection against urinary tract injury compared to total hysterectomy.[1]

STEPS OF CAESAREAN HYSTERECTOMY SURGERY[3]

Step 1: Midline access and hysterotomy

- Expose uterus followed by grading PAS features.
- Perform hysterotomy avoiding placenta
- Close hysterotomy to minimize blood loss

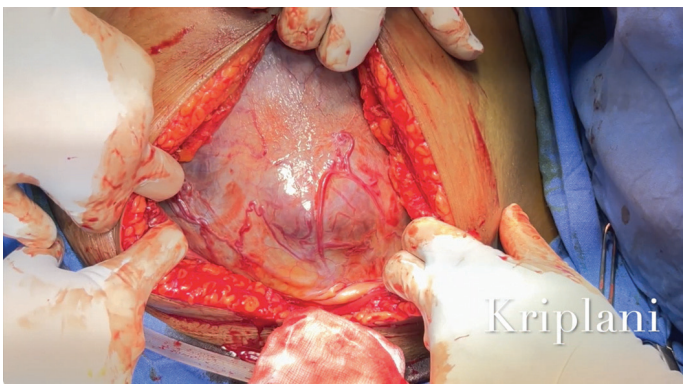

Figure 1: Intraoperative Appearance of PAS at Abdominal Incision

Step 2: Superior Devascularization:

- Release and ligate B/L round ligaments and utero-ovarian pedicles
- Step 3: Retroperitoneal dissection
- Skeletonize uterus till cardinal ligaments and open paravesical spaces
- Exposure of anterior divisions of internal iliac arteries followed by ureterolysis
- Step 4: Bladder dissection
- Meticulous lateral-to-medial dissection to the level of anterior vaginal fornix
- If bladder invasion present, cystoscopy followed by intentional cystotomy and resection of affected portion and bladder repair done.

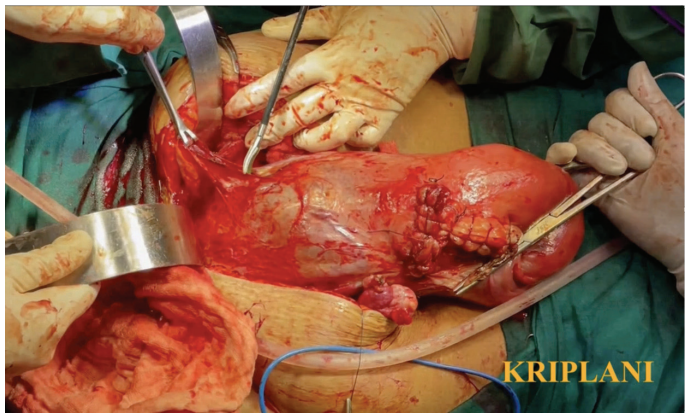

Figure 2: Caesarean hysterectomy in PAS

Step 5: Colpotomy

- After adequate exposure for vault entry, main uterine artery pedicles are ligated
- Incrementally clamp incised edges to minimize blood loss as vault is opened
- If there is brisk bleeding from placenta, cut just below placenta, then remove cervical stump

OTHER TECHNIQUES

- Modified radical peripartum caesarean hysterectomy (Soleymani-Alazzam-Collin's technique) - Oxford Placenta Accreta Team[4]
- Posterior retrograde hysterectomy via POD[5]
- Modified radical hysterectomy technique and use of bipolar

Planned delayed hysterectomy: placenta left in situ during initial cesarean with hysterectomy at 3-12 week postpartum.

Alternative "definitive" surgical management in cases of placenta percreta with extensive invasion. The associated risks are coagulopathy, hemorrhage, and sepsis during interim period. Patient compliance with follow-up is crucial. No evidence to support benefit of planned delayed hysterectomy, and potential complications of performing a second intentional surgery in a stable patient may outweigh the benefits.[1]

Expectant management: Leaving placenta in situ during caesarean allowing for its spontaneous resorption. It is offered to patients desiring fertility preservation, at high surgical risk for hysterectomy, or willing for continuous long-term monitoring. Transverse incision hysterotomy

made at a distance from placenta, Cord cut close to placenta and uterus closed. Prophylactic antibiotics administered postoperatively. Patients must be monitored closely with serial ultrasound (Doppler) and β-hCG levels to track placental involution. Long-term follow-up is essential.

Success rate is 60% to 93%.[2] Severe maternal morbidity may occur in 6% cases - septic shock, peritonitis, uterine necrosis, postpartum uterine rupture, fistula, acute renal failure, DVT or pulmonary embolism, or maternal death. Spontaneous uterus emptying occurs in 75% patients after 13.5 weeks (4-60 weeks).[6]

In PACCRETA study, expectant management showed lower rates of severe bleeding, hysterectomy, and non PPH severe maternal morbidity but higher rates of embolization, endometritis, and readmission compared to cesarean-hysterectomy.[7]

Additional procedures: Additional procedures such as embolization, vessel ligation, internal iliac balloon occlusion, methotrexate, and hysteroscopic resection have been used to promote placental resorption in expectant management. The use of methotrexate is not recommended due to limited evidence and possible maternal hematologic and nephrological toxicities.[2]

INTRAPARTUM UNDIAGNOSED PAS

In absence of specialized expertise (Periphery/rural areas), if mother and fetus are stable, close abdomen and urgent transfer to tertiary center is indicated. If patient is unstable or surgical expertise available, immediate emergency hysterectomy is the definitive intervention.

Uterine preservation Conservative management:

It refers to partial myometrial resection (invasive area) with invasive placenta at cesarean followed by immediate uterine reconstruction and reinforcement of bladder.

It is considered if PAS is limited in depth and surface area (<50% of anterior uterine surface), no invasion in parametrium or cervix and entire placental implantation area is accessible.[2] It is successful in 91.5%. The rate of recurrence is low.[6]

Triple-P procedure:

- Preoperative placental localization using ultrasound and delivery through transverse uterine incision above upper border of placenta.
- Pelvic devascularization by placing intra-arterial balloon catheters in anterior division of internal iliac arteries before surgery.
- Placental non-separation with myometrial excision and reconstruction.

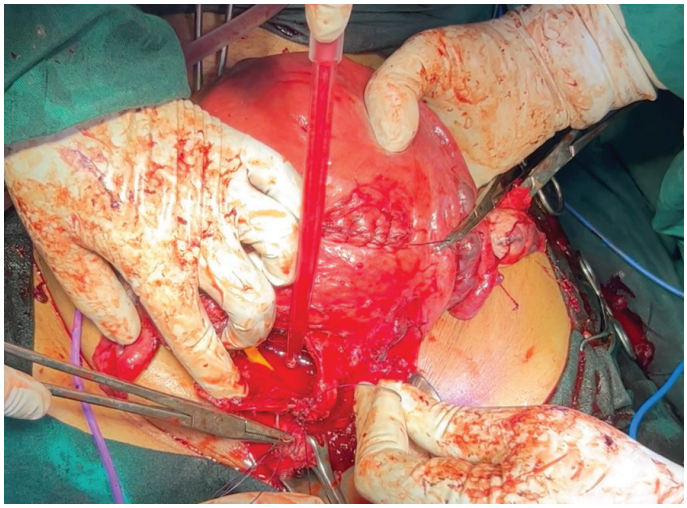

Figure 3: Uterine repair after segmental myometrial resection during Uterine preservation surgery

Post surgery, balloons are deflated after 2 hours. Postnatal follow-up includes β-hCG levels and ultrasound to assess involution of any retained placenta.[8]

MINIMIZING UNINTENDED UROLOGIC INJURY

PAS disorders carry a significant risk of urinary tract injuries, particularly bladder (48%) and ureters (18%). Bladder is most affected extra-uterine organ in placenta percreta.[1]

1. Ureteric stents and cystoscopy: Routine use of ureteric stents is not recommended, with benefit limited to significant invasion where complex hysterectomy is anticipated. Ureteric stents should be placed in operating room just before delivery, with all necessary resources prepared.[1]
2. Major intraoperative bleeding hinder visibility and create urgency, hence dissection of bladder prior to delivery is prioritized. In cases with extensive anterior and lateral invasion or when uterus bulges into lateral pelvic sidewalls, a posterior approach is preferred.
3. Intra-operative bladder filling with methylene blue and lateral-to-medial dissection aid in bladder dissection. In suspected intraluminal bladder invasion, deliberate cystotomy followed by excision of affected region of bladder instead of challenging dissection.
4. For severe bladder invasion, delayed interval hysterectomy or expectant management may be considered

STRATEGIES TO DECREASE INTRAOPERATIVE BLOOD LOSS[1]

1. Peri-operative administration of intravenous tranexamic acid (1 g slow IV)
2. Radiology guided internal iliac Balloon occlusion catheters, while limited in preventing catastrophic

bleeding due to collateral vessels, may exacerbate bleeding from them and carry risks of vessel rupture and catheter-related complications. IIA occlusion did not reduce intraoperative bleeding or the number of transfusions.[9] Interventional radiology may be helpful when source of bleeding cannot be identified at surgery, but it may not be feasible in unstable patients or all centers.

3. Surgical ligation of internal iliac arteries offers similar advantages to balloon occlusion devices and can be beneficial in limited access to interventional radiology. Ligating the vessel at least 3-5cm distal to its separation posterior division will avoid inadvertent ligation of posterior division.
4. Uterotonics should not be used during planned immediate cesarean hysterectomy. But if uterine preservation is planned, uterotonics are useful.
5. In cases of pelvic hemorrhage during uterine preservation Intrauterine tamponade bakri foleys should be first-line management for post-placental separation bleeding. If this fails or placenta remains in situ, uterine devascularization, with or without uterine compressive sutures, can be attempted.
6. Uterovesical tourniquet (foleys): after dissecting bladder and creating window in broad ligament, tourniquet is applied around lower uterine segment. It leads to temporary uterine devascularization and significantly reduced blood loss. Double tourniquet may be used for more comprehensive vascular occlusion.
7. Transverse compression sutures may be applied to compress hyper vascular placental bed in Lower segment to control bleeding.
8. If bleeding is life-threatening, emergency hysterectomy should be rapidly performed. Vascular compression (common iliac arteries or aorta) can be used temporarily to gain time for resuscitation and definitive treatment.
9. In persistent pelvic bleeding following hysterectomy, internal iliac artery ligation or pelvic tamponade should be considered. Pelvic packing can be effective for patient stabilization and blood product replacement.
10. Aortic clamping should be reserved for experienced surgical consultants or as a last resort due to the potential risk of vascular-related complications. Infrarenal aortic compression or clamping methods are utilized as last-resort strategies.
11. If blood loss exceeds 1,500 mL, re-dose prophylactic antibiotics, keep the patient warm, avoid acidosis, rapidly transfuse blood products in a fixed ratio (1:1:1 to 1:2:4 strategy of packed red blood cells: fresh frozen plasma: platelets).

Massive blood transfusion (MBT) is Replacement of one entire blood volume within 24 hours. FIGO recommends 1 :1 :1 ratio, with typical rounds comprising 6 units PRBC, 6 units FFP, 6 units PLT or 1 platelet apheresis, and 10 units of cryoprecipitate. The utilized dose of recombinant factor VII is based on local expert opinion.[9]

- Massive blood transfusion is a life-saving intervention for severe hemorrhage, but it carries risks like coagulopathy, hypothermia, electrolyte imbalances (e.g., hypocalcemia, hyperkalemia), metabolic acidosis/alkalosis, Transfusion-Related Acute Lung Injury (TRALI), Transfusion-Associated Circulatory Overload (TACO), Acute Hemolytic Transfusion Reaction, Anaphylactic reactions, infection transmission (hepatitis, HIV).

POST OPERATIVE CONSIDERATIONS

PAS patients may require intensive hemodynamic monitoring in ICU during early postoperative period. Clinical vigilance is crucial for complications such as renal failure; liver failure; infection; unrecognized ureteral, bladder, or bowel injury; pulmonary edema; and DIC. The possibility of Sheehan syndrome due to potential hypoperfusion should be considered. There should be low threshold for reoperation in cases of suspected ongoing bleeding. Interventional radiologic strategies may be useful.

LONG-TERM OBSTETRIC AND FERTILITY OUTCOMES

Women who have successful conservative management of PAS have a future pregnancy rate of 86 – 89 %. However, they must be counseled regarding high risk of recurrence (22-29%) and potential for adverse outcomes including uterine rupture, postpartum hemorrhage, and peripartum hysterectomy. Long-term complications include intrauterine adhesions and secondary amenorrhea.[6]

SUMMARY AND LEARNING POINTS

- Placenta accreta spectrum is an increasingly prevalent condition associated with significant morbidity and mortality.
- The involvement of a multidisciplinary team is crucial for adequate preparation.
- Performing a cesarean hysterectomy for placenta accreta spectrum can be challenging and should be conducted by experienced surgeons.
- Conservative or expectant management should only be considered for carefully selected cases of placenta accreta spectrum after thorough counseling.

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When Preservation Matters: Fertility Focused Surgery in PAS

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INTRODUCTION

Placenta accreta spectrum (PAS) is a complex and increasingly common obstetric condition with significant morbidity and mortality. Morbidity includes hysterectomy and loss or fertility in young women who are yet to complete their families. Placenta accreta spectrum (PAS) occurs in approximately 0.12–0.31% of pregnancies. Placenta previa, particularly in the presence of prior cesarean birth, is the most significant risk factor. Risk increases markedly with the number of previous cesarean births, rising from about 3% after the first cesarean to nearly 67% after the fifth or subsequent cesarean births. The reported maternal mortality rate associated with PAS is approximately 7%.[1]

Conventional surgical management of PAS essentially includes a planned caesarean delivery through the upper uterine segment at 34 - 36 weeks followed by hysterectomy in a tertiary care center by a multidisciplinary team. The prerequisites include an informed consent, adequate blood and blood products in hand, ICU facilities and an experienced team of obstetricians, anesthetists and a surgeon/urologist as per need.

With advances in the understanding of pelvic anatomy and progressive refinement of surgical expertise, the management of placenta accreta spectrum (PAS) has evolved from a radical approach that is caesarean hysterectomy to a more individualized strategy including conservative fertility sparing approach.

Contemporary management is increasingly guided by intraoperative surgical staging with bladder first approach. In this the bladder is dissected first even before the uterine incision and delivery of the baby. The disease is topographically classified according to the precise anatomical location, extent of placental invasion, and the likely vascular pedicles perfusing the placental bed.

APPLIED SURGICAL ANATOMY FOR SURGICAL STAGING OF PAS[2,3]

Anatomical basis for uterine vascular control

Historically, the uterine blood supply was understood to be derived primarily from two sources: uterine arteries and ovarian arteries. However, subsequent anatomical and surgical studies have demonstrated that this concept is incomplete. A significant collateral network exists in the lower uterine segment, referred to as the lower uterine anastomotic component, which establishes vascular communication with the vaginal arterial system derived from posterior division of internal iliac artery through internal pudendal arteries. In PAS collaterals from adjacent pelvic structures like superior and inferior vesical arteries, anterior rectal artery, inferior mesenteric artery etc. also perfuses the placental bed. For surgical and hemostatic purposes, the uterus can be functionally divided into five vascular sectors based on their predominant sources of blood supply:

Sector 1 (S1): Corresponds to the uterine corpus (upper segment) above the peritoneal fold or UV fold. It is primarily supplied by the uterine and ovarian arteries.

Sector 2 (S2): Includes the area below the peritoneal reflection including lower uterine segment, cervix, upper vagina and parametria. This region has a complex vascularization, receiving contributions from the uterine, cervical, superior vesical, upper and middle vaginal, internal iliac artery and pudendal artery. It represents a critical area in the management of obstetric hemorrhage.

Sector 3 (S3): Encompasses the lower vagina and adjacent structures, predominantly supplied by lower vaginal arteries, branches of internal pudendal arteries which are the terminal branches of posterior division of internal iliac artery. This includes colpouterine arteries, branches of vaginal arteries which ascend through the anterior vaginal wall and anastomose with the uterine arteries on each side. Consistently, these are found at the 3, 6, and 9 o'clock positions on anterior wall of vagina. These pedicles are dilated and provide significant flow to the site of the abnormal placental implantation.

Sectors 4 and 5 (S4 and S5): Represent the posterior uterine wall. The upper part is S4 sector it receives blood supply uterine and ovarian arteries and sometimes from mesenteric artery or omentum in cases of PAS or fibroid located here. The lower part is S5 sector which receives blood supply from uterine artery but sometimes in case of PAS from superior rectal artery (inferior mesenteric artery) by anastomotic branches. (Figure 1, 2)

This sectoral classification provides a practical anatomical framework for understanding pelvic vascularization and guiding surgical strategies for effective hemorrhage control in PAS

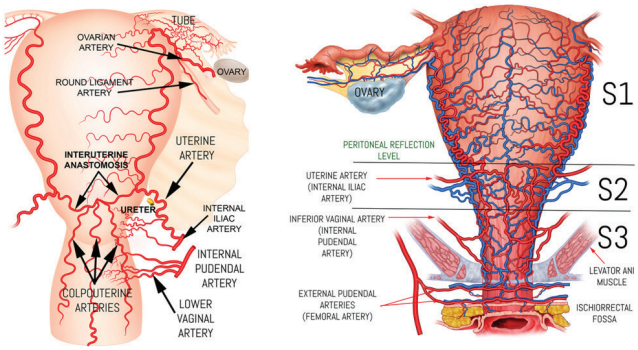


Figure 1 and 2: Blood supply of the uterus

Courtesy Nieto-Calvache AJ Palacios-Jaraquemada JM [2,3]

CLINICAL IMPLICATION OF UNDERSTANDING VASCULAR ANATOMY

Current understanding indicates that the uterine vascular supply is complex, with extensive anastomoses, necessitating precise anatomical knowledge for safe and effective control of hemorrhage in surgical management of PAS. Bilateral ligation of anterior division of internal iliac artery or bilateral uterine artery balloon occlusion may not be sufficient for reducing blood supply to lower uterine segment in all types of PAS. Manual compression of aorta or temporary clamping of aorta or bilateral occlusion of common iliac arteries is likely to be more effective.

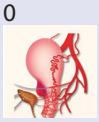
TOPOGRAPHIC CLASSIFICATION OF PAS[4]

Placenta accreta spectrum (PAS) disorders have traditionally been classified as accreta, increta, or percreta, based on the presumed depth of villous invasion.[3] However, emerging evidence suggests that these findings may not represent true trophoblastic invasion in all cases, but rather reflect extensive myometrial remodeling, abnormal adhesions, and neovascularization from surrounding organs frequently associated with previous cesarean deliveries.[3]

Furthermore, the conventional FIGO classification has limited correlation with intraoperative findings, surgical complexity, and clinical outcomes. Consequently, a topographic classification system has been proposed to provide a more clinically relevant framework.[4] (Table no 1)

This contemporary approach categorizes PAS according to the anatomical location of the lesion whether it is on the anterior wall or posterior wall of uterus; whether it is in the midline or lateral encroaching on parametrium and whether it is above or below the level of peritoneal reflection that is the UV pouch. The surgical difficulty and methods of preventing blood loss are tailored accordingly as the key arterial pedicles vary with different types.

Table 1: *Topographic classification of PAS[4]

PAS Type	Relation with uterine wall	Blood supply	Additional Hemostatic procedure required	Proposed Surgical approach
0 	Uterine window or dehiscence	Uterine artery	None	One step conservative surgery OSCS
1 	Uterine segment upper anterior part involved above peritoneal reflection (UV uterovesical fold)	Uterine artery Superior vesical artery	Isolation, ligation and cutting of all bridging vessels between uterus and bladder	OSCS
2U 	Upper lateral (parametrial) above peritoneal reflection (UV fold)	Uterine artery Internal iliac artery collaterals Obturator artery, Ureteral vessels	Isolation. ligation and cutting of bridging vessels between uterus and bladder	OSCS
2L	Lower lateral (parametrial) below peritoneal reflection (UV fold)	Same except here instead of uterine arteries, cervical and vaginal arteries need to be focused on	Temporary occlusion/ compression of Infrarenal aorta or B/L common iliac artery occlusion	Total Hysterectomy
3 	Cervix or lower part of uterine segment below peritoneal reflection (UV fold)	Superior and inferior vesical arteries, uterine cervical and vaginal arteries	Same as in Stage2L	OSCS or total hysterectomy

4 	Type 3 + densely adherent bladder (fibrosis)	Superior and inferior vesical arteries, uterine cervical and vaginal arteries	Same as in Stage2L	Modified subtotal hysterectomy
5U	Posterior uterine wall, involved in upper part	Uterine artery, Ovarian artery, collateral flow from inferior mesenteric artery	Uterine artery	OSCS
5 L 	Posterior uterine wall involved with lesions below the peritoneal reflection	Uterine artery and collaterals from anterior rectal artery	Uterine artery and Collateral ligation or Temporary occlusion/ compression of Infrarenal aorta	Total hysterectomy

*Courtesy Nieto-Calvache AJ Palacios-Jaraquemada JM[4]

PRACTICAL IMPLICATIONS OF TOPOGRAPHIC CLASSIFICATION OF PAS

- It facilitates the prediction of surgical difficulty, as lesions involving the lower uterine segment below the peritoneal reflection, posterior or lateral uterine wall are associated with an increased risk of significant hemorrhage.
- It assists in the selection of the most appropriate management strategy, ranging from conservative techniques, such as One-Step Conservative Surgery (OSCS), to various forms of hysterectomy, depending on the extent and location of disease (Types 0–5). Fertility preserving surgery is indicated for stage 0, 1, 2U and 5U. It may be considered by experienced surgeons in some cases of stage 3.
- It also enables standardized reporting of surgical findings, thereby improving consistency and comparability of data across institutions.

Overall, this anatomical classification enhances preoperative planning and supports more individualized and effective management of PAS.

FERTILITY SPARING CONSERVATIVE MANAGEMENT OF PAS[5]

This approach involves surgical staging and topographic classification of PAS as the first step to decide if uterine preservation one step conservative surgery (OSCS) is possible. (Box no 1)

Box no 1 Prerequisites of performing fertility sparing surgery for PAS

1. The bladder is completely dissected away from the uterine wall after securing bridging vessels
2. There is at least 2 cm of healthy myometrium above the cervix
3. The affected myometrium is less than 50% of the axial circumference of the uterus

Steps of fertility sparing one step conservative surgery are described as below:

1. Abdominal Incision

A vertical midline or a Pfannenstiel incision may be given, depending on surgical expertise, anticipated difficulty, and need for exposure. A vertical incision is generally preferred in cases with suspected extensive disease for optimal access and visualization.

2. Intraoperative Staging

Following entry into the abdominal cavity, careful assessment of the uterus and surrounding structures is performed to determine location, and extent of the lesion.Bladder dissection is undertaken using a lateral-to-medial approach. The anterior leaf of the broad ligament is incised, and dissection proceeds by entering the parametrium medial to the round ligament. The medial paravesical spaces are then developed by gentle cephalad and caudad dissection using the index fingers of both hands. Subsequently, the retro vesical space is created by applying traction to the bladder with allis forceps and countertraction to the lower uterine segment. Remember the bladder is adherent only to the previous scar. The area below the scar is free. Any aberrant vascular connections between the bladder and uterus encountered during the dissection should be carefully identified, ligated, and divided to minimize hemorrhage. Complete mobilization of bladder is done

3. Hysterotomy and delivery of the baby

A transverse uterine incision is given in the healthy myometrium immediately above the area of abnormal placental invasion to allow safe fetal delivery while minimizing blood loss. After incising the myometrium, the surgeon introduces a hand upwards between the

normal myometrium and the placenta at the upper margin of the incision, gently separating the placenta from the uterine wall until the membranes are reached and ruptured to deliver the fetus. (Figure 3) This technique is referred to as the Ward maneuver.

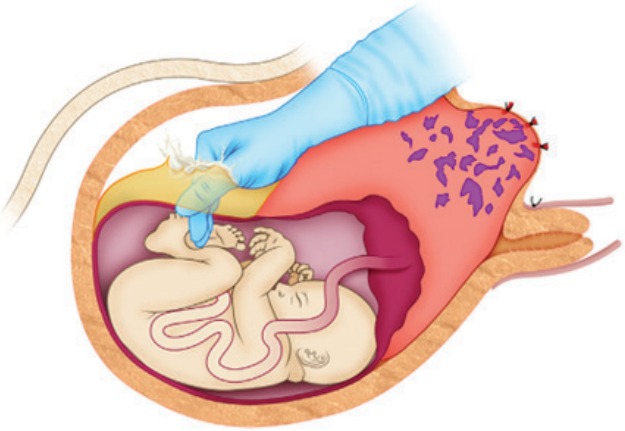


Figure 3. Ward Maneuver

Courtesy Nieto-Calvache AJ Palacios-Jaraquemada JM[5]

4. Inspection of lower segment in an exteriorized uterus for deciding the operative strategy

After delivery of the baby, uterus is exteriorized to completely evaluate the severity of lesion based on topographic classification. In cases where a 2 cm length of healthy myometrium is present distal to the lesion /affected myometrium and the lesion is involving < 50% of the circumference of the lower segment a OSCS is planned. (Figure 4) Otherwise, hysterectomy is proceeded with.

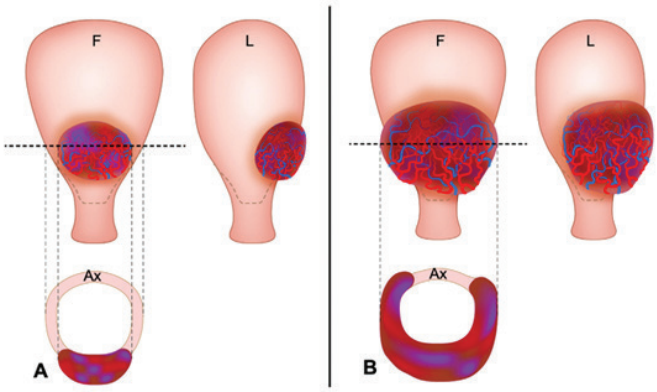


Figure 4. Assessment of the lesion after exteriorizing the uterus for OSCS

Courtesy Nieto-Calvache AJ Palacios-Jaraquemada JM[5]

5. Primary hemostasis before doing conservative surgery

Colpouterine vessels, ascending in the anterior vaginal wall to join the uterine arteries, are consistently located at the 3-, 6-, and 9 o'clock positions. (Figure 5). These run in the wall od anterior vaginal wall hence may not be visible. Based on these anatomical landmarks, lower hemostatic sutures are placed to achieve devascularization of the affected area prior to resection, thereby reducing intraoperative bleeding.

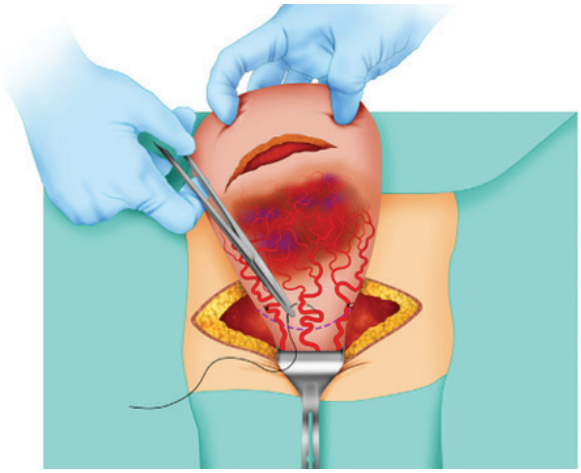


Figure 5. Ligation of colpouterine vessels

Courtesy Nieto-Calvache AJ Palacios-Jaraquemada JM[5]

6. En bloc resection of abnormal myometrium and placenta

This procedure involves en bloc resection of the affected myometrium along with the adherent placenta. (Figure 6)

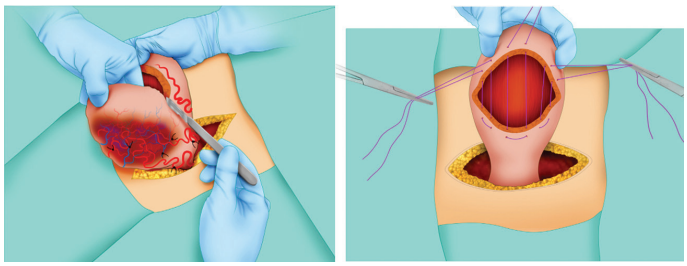


Figure 6. Resection of affected myometrium with attached placenta and reconstruction of the uterus

Courtesy Nieto-Calvache AJ Palacios-Jaraquemada JM5

7. Uterine reconstruction

Reconstruction of the uterus is done by approximating healthy myometrial edges above and below the lesion. There is a mismatch between the upper and lower ends of the incision, upper is wide and lower is narrow. The repair is done in two layers, the first layer utilizes 3 to 5 "U" shaped stitches to oppose the unequal superior and inferior borders, (Figure 7) followed by a second layer of unlocked simple continuous suture.[5]

Pregnancy outcomes were studied in 202 patients with previous history of one step conservative surgery. Of a total of 202 pregnancies 89.6% (181/202) were related to PAS type 1; 7.9% (16/202) related to PAS type 2, and 2.5% (5/202) related to PAS type 3. In majority 90% (162/179)

pregnancies reached to term (> 37 weeks). The average interpregnancy period was 15 months for PAS type 1 and 2 and 18 months for PAS 3. None had placenta previa or PAS in subsequent pregnancy. The uterine segment was thicker than usual except in one case of twins where there was partial uterine dehiscence. [6]

SUMMARY AND LEARNING POINTS

- Hysterectomy for all patients of PAS is no more a dictum. For those fulfilling the prerequisites and desirous of fertility preservation one step conservative surgery is a practical option.
- For those who are experienced in doing hysterectomy for PAS there is no additional challenge in performing OSCS.
- Its safe application only requires the understanding of the newer concepts of uterine and cervical blood supply and primary hemostasis accordingly, and need for bladder first approach for topographic classification and intraoperative staging.

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Journal Scan

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Zhang J, Li H, Feng D, Wu J, Wang Z, Feng F. Ultrasound scoring system for prenatal diagnosis of placenta-accreta spectrum. BMC Pregnancy and Childbirth. 2023 Aug 7;23(1):569

Compiled by Dr Kanika Chopra, Professor, Department of Obstetrics & Gynaecology, LHMC, New Delhi

Objective: It was to prospectively develop an ultrasound scoring system for PAS, evaluate its diagnostic value, and provide a practical approach to prenatal diagnosis of PAS.

Methods

This was a double-blind prospective study **including 532 pregnant women**. A preliminary ultrasound scoring system was made as in table 1. Binary logistic regression analysis was used to calculate odds ratios (ORs) and 95% confidence intervals to describe the associations between the features of the ultrasound scoring system and the degree of placental invasion. **Meaningful features were selected and included in a final scoring system to calculate a total score, where last three features (cervical sinus and morphology and bladder line interruption) as in preliminary score were excluded.** Receiver operating characteristic (ROC) curves were used to calculate the thresholds for the total score that discriminated between no PAS, placenta accreta, placenta increta, and placenta percreta.

TABLE 1: Preliminary ultrasound scoring system

	Features	0	1	2
1	Placental location	Normal	Low lying placenta ≤2cm	Placenta previa
2	Placental thickness (thickest part)	≤35 mm	30-50 mm	≥ 50 mm
3	Retroplacental space	Present	Absent	
4	Thickness of retroplacental myometrium*	>1 mm	≤1 mm	Absence
5	Retroplacental myometrial blood flow**	Normal	Increased	Numerous and Confluent
6	Placental lacunae***	None	Present	Numerous and Confluent
7	History of cesarean section	None	1	≥2
8	Cervical sinus	None	Present	Numerous and Confluent
9	Cervical morphology	Normal	Incomplete	Disappeared
10	Bladder line interuption	Normal	Interrupt	Absence and placental bulge

* Retroplacental myometrium was measured with the image enlarged so the hypoechoic muscle layer behind the placenta could be measured to obtain the smallest myometrial thickness in the sagittal plane. Sensitivity and specificity of this feature was 64.1% and 85.9%. Loss of the retroplacental space had a sensitivity and specificity of 67.5% and 78.3%.

** Blood flow velocity ≥ 20 cm/s is increased retroplacental myometrial blood flow. In the sagittal plane, normal blood flow appeared scattered, with a discontinuous distribution in the uterine wall behind the placenta, or as a regular, straight, thin strip of uniform color, representing a blood vessel running along the uterine wall. Increased blood flow is due to thickened and tortuous blood vessels, which appeared as multicolored, overlapping blood vessels that crisscrossed, or as turbulent blood flow along the uterine wall. Subplacental hypervascularity had a sensitivity of 75.8% and specificity of 68.5% for PAS.

*** The presence of placental lacunae, which appear as irregular ellipsoid shapes on ultrasound, is considered a sensitive, 97.8%, and highly predictive indicator of PAS. Placental lacunae are fed by vessels that extend from the placenta across the myometrium and contain high velocity blood flow.

RESULTS

After delivery, 184 patients had no PAS & 348 patients had PAS. Among those with PAS, 120 women (34.5%) had placenta accreta, 189 women (54.3%) had placenta increta, and 39 women (11.2%) had placenta percreta. Logistic regression showed significant associations of placental location, placental thickness, presence/ absence of the retroplacental space, thickness of the retroplacental myometrium, presence/absence of placental lacunae, retroplacental myometrial blood flow and history of cesarean section with PAS. To ensure ultrasound scoring system provided a practical approach to prenatal diagnosis of PAS, the authors defined no PAS as a total score < 5, placenta accreta or placenta increta as a total score 5–10, and placenta percreta as a total score ≥ 10. These thresholds gave a false positive rate of 7.6% (14/184) in women with no PAS and a false negative rate of 30.7% (107/348) in women with PAS.

Conclusion

This study identified seven indicators of PAS and included them in an ultrasound scoring system for PAS that has good diagnostic efficacy and clinical utility.

Vuong AD, Nguyen XT, Pham XT, Nguyen PN. Outcomes of subsequent pregnancies following modified one-step conservative uterine surgery (MOSCUS) in the management of placenta accreta spectrum: Two case reports and a narrative review of the literature. Case Reports in Women's Health. 2026 Jan 5:e00781.

Compiled by: Dr Kanika Chopra, Professor, Department of Obstetrics and Gynecology, LHMC

INTRODUCTION & CASE REPORT

- This article reports the long-term results of modified one-step conservative uterine surgery (MOSCUS) in two cases of placenta accreta spectrum and reviews the literature on the outcomes of subsequent pregnancies after conservative management of the condition.
- Two women with a history of placenta accreta spectrum managed with MOSCUS attended a tertiary referral hospital in southern Vietnam with term and near-term pregnancies.

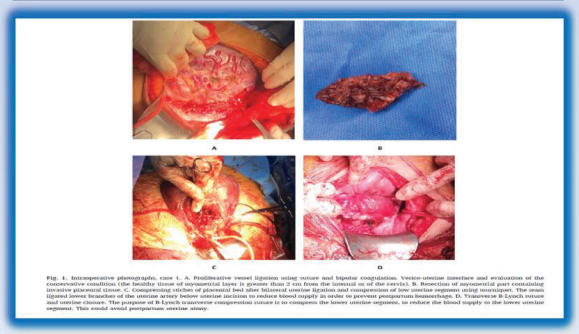

Table 1
Characteristics of two women with prior PAS pregnancy who underwent the MOSCUS procedure.

Characteristics	Case 1	Case 2
Maternal age (years)	43	35
Gravida (times)	5	3
Parity (times)	3	3
BMI (kg/m^2)	–	21
Medical history	None	None
Type of PAS	Percreta	Percreta
GA at the previous CS (weeks)	34	35
Menstrual features	Irregular menstrual and dysmenorrhea before CS with MOSCUS Hot flashes recently	Unremarkable
Contraceptive method during 3–4 years after the first birth with PAS	Infrequent intercourse, pull-out (withdrawal)	Contraceptive pill, condom, pull-out (withdrawal)
Dehiscence scar after MOSCUS	None	None
Time duration from MOSCUS to the present pregnancy (years)	6	5
Mode of conception	Spontaneous/Unplanned pregnancy	Spontaneous
GA at this CS	37 weeks	36 weeks 6 day
Preterm-birth risk or uterine rupture	-Admission due to the uterine contractions without vaginal bleeding 4 times in this pregnancy. -Symptoms of threatened preterm birth presented in 4 pregnancies.	None
Indication for this CS	CS scar ≥3 Non-reassuring FHR	CS PROM Unfavorable cervix
Hemoglobin level before surgery (g/dL)	11.5	12.4
Mode of anesthesia	General anesthesia	General anesthesia
Skin incision	Sub-umbilical midline	Sub-umbilical midline
Abdominal adhesion	No	Yes
Intraoperative evaluation of PAS	Absent	Absent
Placenta previa	Absent	Absent
Estimated blood loss (ml)	300	300
Myometrial thickness of the low uterine segment (cm)	1–2	1–1.5
Length stay of hospital (days)	5	5
Fetal weight (gram)	2600	2500
Apgar score (points) at 1 min and at 5 mins	8/9	7/8
Materno-fetal outcomes	Good	Good

RESULT

The pregnancy outcomes were favourable with elective caesarean delivery. Neither uterine rupture nor recurrent placenta accreta spectrum was observed.

DISCUSSION

- Short-term outcomes of MOSCUS has been reported to be less blood loss and a lower rate of blood transfusion compared with hysterectomy.
- There is a higher rate of postpartum Infection & surgical reintervention (secondary hysterectomy), in 1 in 217 cases.
- The major concerns about MOSCUS are risks of uterine adhesion, reproductive function, subsequent pregnancy outcomes, and future fertility.

CONCLUSION

It is not possible to offer clear practical guidelines relating to subsequent pregnancies after conservative management of PAS. The recurrence of PAS in late pregnancy is variable. The adverse outcomes are an increased rate of repeat CS and postpartum hemorrhage. The conservative uterine management with MOSCUS could help to maintain fertility.

Case Vignette: A Case based Insight into Diagnosis and Management of Placenta Accreta Spectrum

Anubhuti Rana[1], Seema Singhal[2], K Aparna Sharma[2]
[1]Associate Professor, [2]Professor, Department of Obstetrics and Gynaecology, AIIMS, New Delhi

History

36 year old, G4P1L1A2 at 30 weeks POG , history of spotting per vaginum 2 days ago, managed conservatively. No further episodes of bleeding or abdominal pain. Antenatal period uneventful, referred with ultrasound report of placenta praevia with placenta accreta spectrum cannot be ruled out.

Obstetric history: Previous one caesarean delivery and two first trimester abortions (managed by suction evacuation)

Examination

- Vitals: Stable
- Abdominal Examination: Uterus corresponding to 30 weeks, relaxed, normal tone, no scar tenderness, fetal heart rate: 140 bpm
- Local examination: No active bleeding

Investigations & Initial management

- Antenatal investigations within normal limits except mild anaemia (Hb 10.5g/dl)
- Antenatal corticosteroids already administered 2 days ago

Questions for Discussion

Q1. How will you approach this case?

STEP 1: REVIEW ANTENATAL HISTORY AND RECORDS

Anubhuti Rana[1], Himakshi Boro[2], K Aparna Sharma[2]
[1]Associate Professor, [2]Senior Resident, Department of Obstetrics and Gynaecology, AIIMS, New Delhi

A detailed review of all antenatal records along with history, investigations and imaging is the first step. She had registered at a private nursing home. All antenatal blood investigations were within normal limits with blood group being B (Rh positive). She had received 2 doses of TD immunization. There was history of regular intake on Iron and Calcium tablets. Antenatal period was uneventful until she developed spotting PV at 29 weeks 5 days POG and was admitted at the private nursing home for the same. She did not have any Level II ultrasound (was lost to follow up) and underwent an ultrasound at 29 weeks 5 days period of gestation (c/o spotting PV) which revealed placenta praevia with a suspicion of PAS and no gross congenital anomaly. OGTT was also done which was normal and antenatal corticosteroids were already administered. Past history did not reveal any chronic illness.

STEP 2: CONFIRMATION OF DIAGNOSIS OF PAS

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An ultrasound examination will be performed to confirm the diagnosis of PAS, which was done for this patient too. MRI was also performed in this case in preoperative period to map the extent and invasion of placenta.

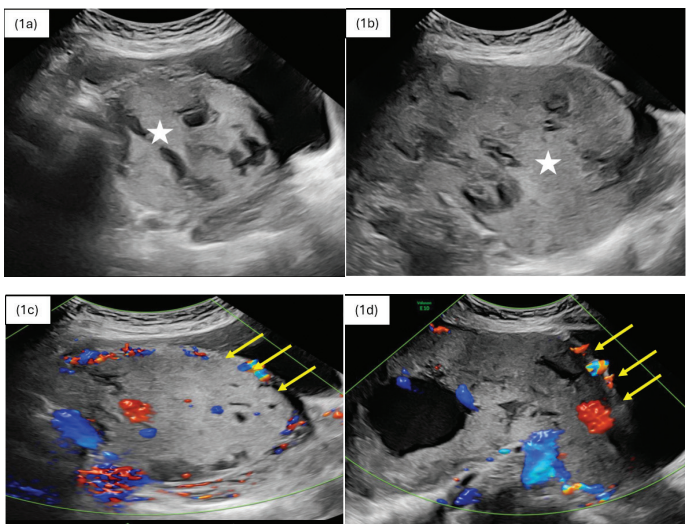
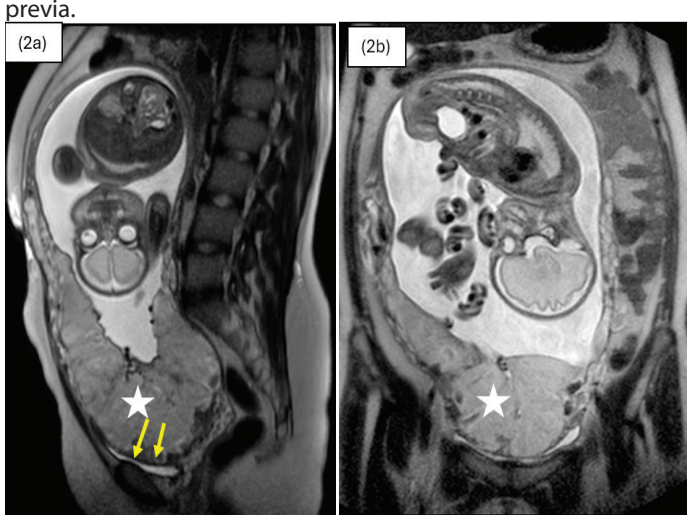


Figure 1(a-d): USG showing Placenta is diffusely bulky with heterogeneous echotexture (white star) and loss of retroplacental hypoechoic zone. It is central, low lying and covers the internal os with raised vascularity at the interface with the posterior wall of the urinary bladder (yellow arrows). Sonographic findings are consistent with the Placental accreta spectrum with placenta previa.



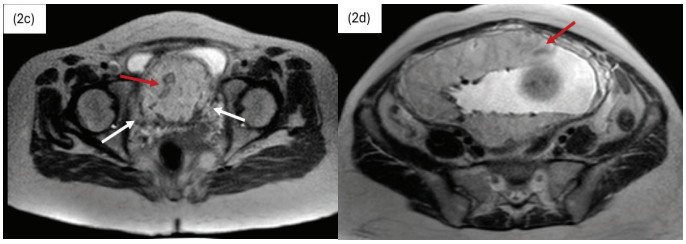


Figure 2(a-d): MRI T2 WI shows heterogeneously hyperintense signal intensity of placenta (white star) It appears bulky and completely covers the internal os. Multiple T2-dark intraplacental bands (red arrow) seen with myometrial thinning and loss of retroplacental T2 hypointense line (yellow arrow). Urinary bladder appears collapsed with few T2-dark flow voids at placental-bladder interface (yellow arrow). There is evidence of bladder interface extension of placenta and extension along the posterolateral walls (white arrows) suggestive of placenta increta.

Teaching Pearls on Imaging in PAS

Is MRI required for diagnosis of PAS and surgical planning?

Ultrasound is the cornerstone for both screening and diagnosis. MRI is helpful in cases of posterior placenta, equivocal findings on ultrasound, suspecting deep invasion (increta/ percreta), and preoperative mapping. It depicts depth of invasion better (accreta vs increta vs percreta) and extrauterine spread into bladder & parametrium. For surgical planning, MRI is the imaging modality of choice and ultrasound correlation can be considered along with MRI.

Timing of imaging? Options for imaging modalities?

Early suspicion of PAS can be raised in NT/NB scan at 11-14 weeks, however definitive diagnosis can be made as earliest as in second trimester anomaly scan done at 18-24 weeks. In cases of equivocal sonographic findings in level 2 scan, reassessment can be done in the third trimester at 28-32 weeks via USG or MRI. However for preoperative / surgical planning MRI should be considered at 34-36 weeks.

Indications for repeating the imaging in the preoperative period?

Repeat imaging in the preoperative period is not routinely advised in all cases of PAS. However, ultrasound can be considered in equivocal cases and to look for progression of depth of invasion from accreta to increta/ percreta in cases of new onset hematuria. It also demonstrates the current status of vascularity, which may help in deciding the surgical planning like classical vs lower segment incision, need for caesarean hysterectomy, anticipation of massive hemorrhage and role of interventional radiology.

STEP 3: COUNSELLING THE PATIENT AND HER RELATIVES ABOUT THE CONDITION, PLAN OF MANAGEMENT AND RISKS ASSOCIATED WITH PAS

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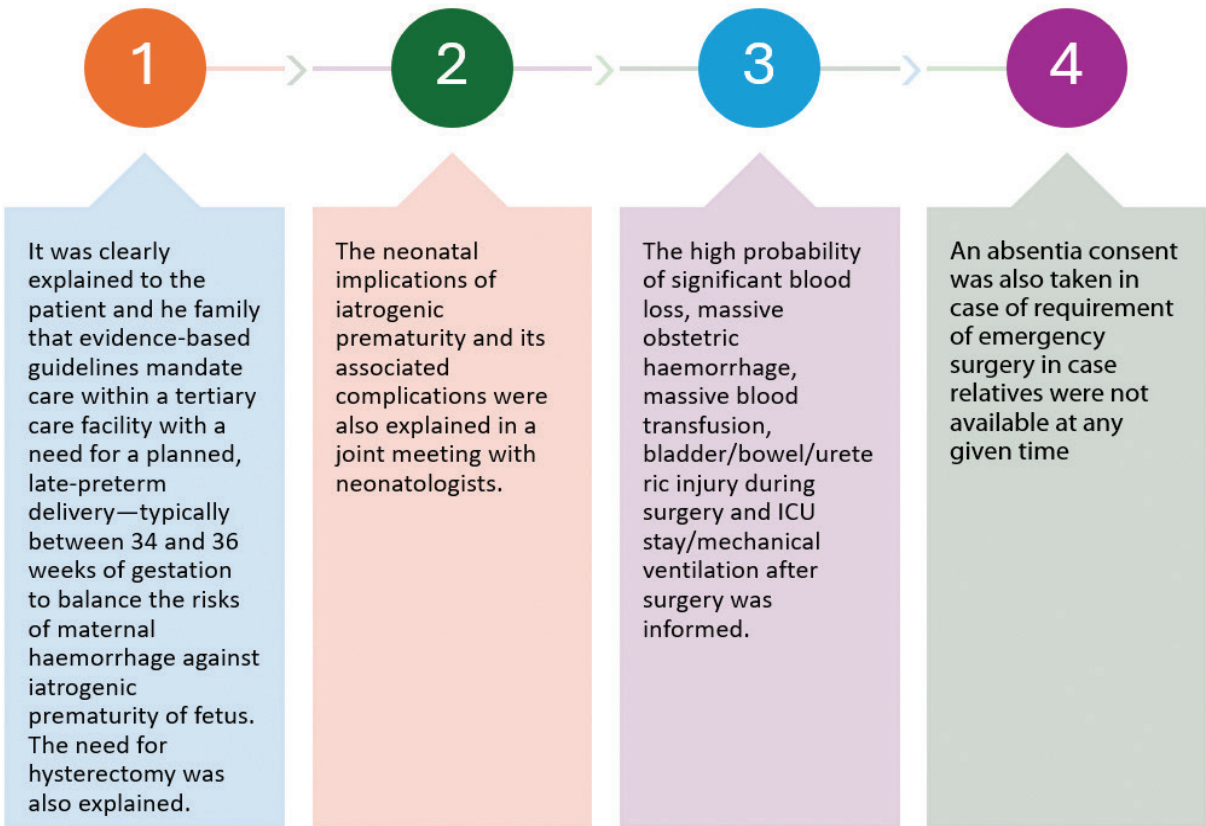

STEP 4:ANTENATAL MANAGEMENT AND PREPARATION ALONG WITH FORMATION OF A MULTIDISCIPLINARY TEAM

Himakshi Boro[1], Anubhuti Rana[2], Neha Varun[2], K Aparna Sharma[3]
[1]Senior Resident, [2]Associate Professor, [3]Professor, Department of Obstetrics and Gynaecology, AIIMS, New Delhi

4.1 Maternal-fetal monitoring:

Maternal	Fetal
Daily check on symptoms of pain abdomen/ bleeding PV was done. Assessment of vitals (PR, BP) and abdominal examination done daily with auscultation of FHS. (in patient care)	Daily fetal movement count was done
Anaemia was corrected with oral haematinics.	Growth parameters were checked every 3 to 4 weekly. Planned to perform NST and BPP scores if complicated by FGR or other high risk medical comorbidities/ standard indications for fetal surveillance were present
Advised to keep one relative with her at all times, relatives phone number was also noted. Advised to avoid constipation and any rigorous physical activity and sexual intercourse .	Antenatal corticosteroids (rescue dose) was completed (i/v/o anticipated preterm delivery)
Counselling at discharge: She requested for discharge due to some social factors. She was discharged at 32 weeks after appropriate counselling of both patient and her relative as she was asymptomatic and could return to hospital rapidly if any symptom developed. Availability of means of transport to hospital was also checked. Warning signs and symptoms were explained in detail. She was instructed to report to triage gyn emergency room in case of any emergency and was called back for admission for safe confinement at 34 weeks.	

4.2 Antenatal preparation checklist:

1. Review imaging to determine surgical approach:	2. Review history to prepare for surgery:	3.Decide on details for surgery:
Location of placenta Severity of disease/invasion present/ suspected (based on FIGO grading) Degree of hypervascularity present Anticipate surgical difficulty issues (suspected parametrial or bladder involvement)	Comorbidities that require preoperative consultation and optimization Significant anaesthesia concerns Any unique blood bank considerations (eg antibodies)	Team and back-up plan Surgery timing and plan Haemorrhage readiness plan Anaesthesia plan Requirement of urologist (in case of percreta with suspicion of bladder invasion)

4.3 Formation of multidisciplinary team:

Must have: Senior obstetrician/ MFM lead, Radiologist (Imaging expert on PAS), Senior Anaesthetist, Pelvic surgery experts (eg. Gynecologic oncologist), Intervention Radiologist, Transfusion medicine specialist, Neonatologist, Skilled senior staff nurse	**Optional:** Urologist, Urogynecology, Vascular surgeon

PAS CHECKLIST

ELEMENTS	COMPONENTS	UPDATE
Imaging experts	USG	
	MRI	
Anaesthesiologist	PAC	
Urologist		
General surgeons		
Interventional Radiologists		
UAE kit	Right	
	Left	
Neonatologist/ NICU	Need of Dexamethasone	
OT staff / List		
Transfusion Experts	Blood Donation	
	Blood Arrange	
24 hours ICU	Arrange	
Consent	UAE	
	EmLSCS +/- Caesarean Hysterectomy	
	Ligation	

Figure 3: Antenatal preparation checklist for PAS

STEP 5: TIMING OF DELIVERY TO BE DECIDED

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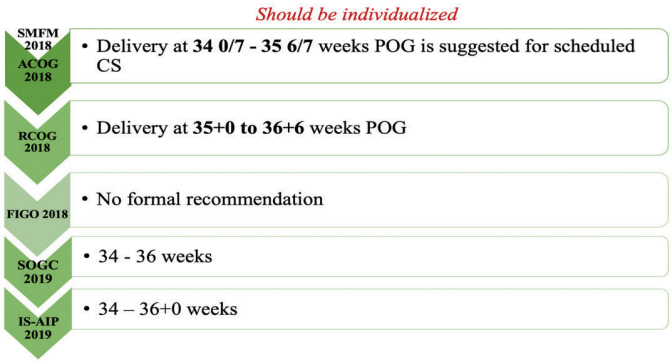
She did not have any further episode of APH. It was decided to deliver her at 36 weeks POG.



Q 2. Discuss the management now at 36 weeks period of gestation.

2.1 ANAESTHETIC MANAGEMENT OF PLACENTA ACCRETA SPECTRUM

Heena Garg[1], Vimi Rewari[2]
[1]Assistant Professor, [2]Professor, Department of Anaesthesiology, Pain Medicine and Critical Care, AIIMS, New Delhi

2.1.1. Pre-Anaesthetic Checkup and anaesthetist perspective:

- A patient with PAS entails a meticulous preoperative anaesthetic assessment by a senior anaesthetist.
- Detailed obstetric history of current and previous pregnancies should be elicited, with documentation of any complications in the previous pregnancy, including any history of endovascular procedure for PAS.
- Routine assessment includes airway examination and recording baseline vitals.
- Informed high risk consent should be obtained including consent for neuraxial and general anaesthesia, blood transfusion, central venous access, ICU admission and possible postoperative mechanical ventilation.
- Baseline investigations include complete blood counts, and serum electrolytes.
- Appropriate fasting guidelines with antacid prophylaxis should be advised.
- Minimum of four units of blood components, including packed red blood cells, fresh frozen plasma (FFP), and platelets, each should be requisitioned during the PAC.

2.1.2. Anaesthetic management:

a. OT preparation and monitoring–

- Meticulous preparation of the operating theatre is essential, ensuring availability of adequate blood products prior to surgery.
- Rapid infusion devices, fluid warmers should be readily available for instituting massive transfusion protocol.
- In addition to the standard ASA monitoring, invasive arterial blood pressure via radial arterial cannulation is recommended for continuous haemodynamic monitoring.
- Adequate vascular access should be secured preoperatively with at least two large-bore peripheral intravenous lines.
- Central venous access or sheath may be inserted preoperatively for vasopressors and rapid infusion.
- Mode of anaesthesia - General anaesthesia (GA) is the preferred anaesthetic modality. Planned GA with rapid sequence induction allows early airway control before the onset of haemodynamic instability, airway oedema or coagulopathy. However, uteroplacental transfer of anaesthetic agents may cause neonatal depression, which should be intimated to the attending paediatrician. A combined neuraxial and GA technique can be employed in PAS patients, where epidural catheter can be used for perioperative analgesia. Neuraxial anaesthesia alone may be considered in patients with focal

accreta, with preparedness for rapid conversion to GA, if required.

a. Intraoperative management –

- Intermittent pneumatic compression devices should be applied to reduce the risk of venous thromboembolism (VTE).
- The primary intraoperative risk is massive obstetric haemorrhage which mandates vigilant monitoring of volume status, urine output, ongoing blood loss, and overall haemodynamics and timely resuscitation.
- Blood loss should be replaced with 1:1:1 or 1:2:4 ratio of packed cells: FFP: platelets, with early initiation of vasopressors.
- Early administration of fibrinogen and antifibrinolytic agent, tranexamic acid (1g i.v. within 3 hours of delivery) is recommended for haemostasis.
- Cell salvage may be used to decrease allogenic transfusion requirements.
- Point-of-care coagulation testing using rotational thromboelastometry (ROTEM) or thromboelastography (TEG) can guide targeted transfusion.
- Electrolyte and acid-base abnormalities should be corrected.
- Care should be taken to avoid hypothermia and acidosis to prevent exacerbation of coagulopathy.
- Prophylactic antibiotics should be repeated with major blood loss.

2.1.3 Postoperative management

- Owing to the extent of surgery and blood loss, PAS patients require continuous monitoring in an ICU setting to monitor haemodynamics, any ongoing bleed, fluid overload from aggressive resuscitation and the risk for multiorgan dysfunction.
- Risk for VTE is substantially greater in PAS patients. Postoperative prophylactic heparin should be given till patients achieve ambulation based on surgeon's discretion. Heparin should be instituted after 12 hours of neuraxial blockade or 4 hours of epidural catheter removal in a haemodynamically stable patient, as per SOAP society recommendations.
- Postoperative analgesia should be multimodal with options including neuraxial morphine, epidural analgesia, transversus abdominis plane block or patient controlled intravenous opioid analgesia.

2.2 Role of interventional radiology in PAS: An Algorithmic Approach

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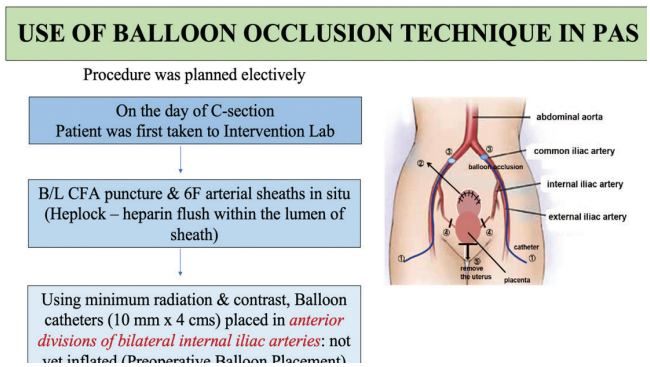
The role of interventional radiology (IR) in the management of placenta accreta spectrum (PAS) continues to evolve, with its utilization varying across institutions depending on availability of resources, skill and expertise. Interventional radiology techniques described in the literature can be prophylactic or emergent in nature. Prophylactic measures include occlusion of bilateral internal iliac arteries or distal aorta with the help of temporary balloon occlusion catheters. Temporary balloon occlusion act by reducing blood supply to pelvic organs thereby reduce amount of blood loss during delivery and allow the surgeon a dry surgical field. However emergent measures are intended to control postpartum or peripartum hemorrhage by uterine artery embolisation subsequent to delivery of baby.

In the case context, this patient underwent planned temporary occlusion of bilateral internal iliac artery performed under fluoroscopic guidance in the Angiography Laboratory. Two balloon catheters (10mm X 4cm) were placed in anterior division of bilateral internal iliac artery prophylactically via bilateral common femoral arterial accesses. The patient was subsequently transferred to obstetric operation theatre. Interventional radiology team assisted in inflation of balloon catheter after delivery of baby and clamping of umbilical cord. Successful control of bleeding ensured by the surgical team and before completion of abdominal wall closure, the balloon catheters were deflated and observed for any further bleeding sources. The surgical team was satisfied with haemostatic control, the balloon was left in deflated conditions and subsequently sheath and balloon catheter removed in the recovery ward and hemostasis achieved at the femoral puncture site. A back up plan for the patient was kept ready if significant haemorrhage continues despite balloon occlusion during surgery, then temporary embolization of bilateral internal iliac arteries with gelfoam slurry via the balloon catheters could be done by interventional radiology team with the help of portable fluoroscopy machines.



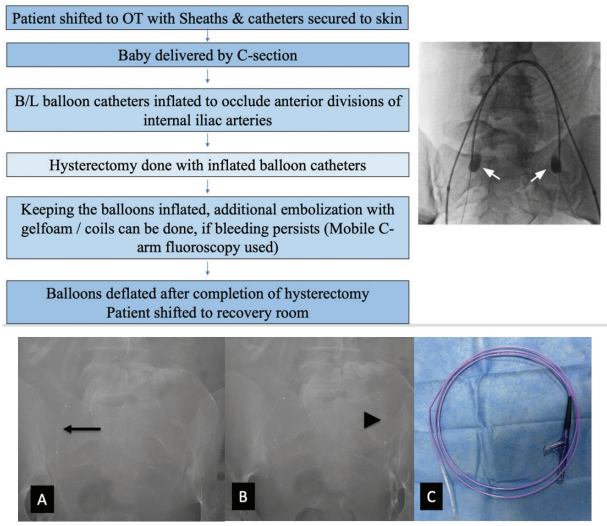
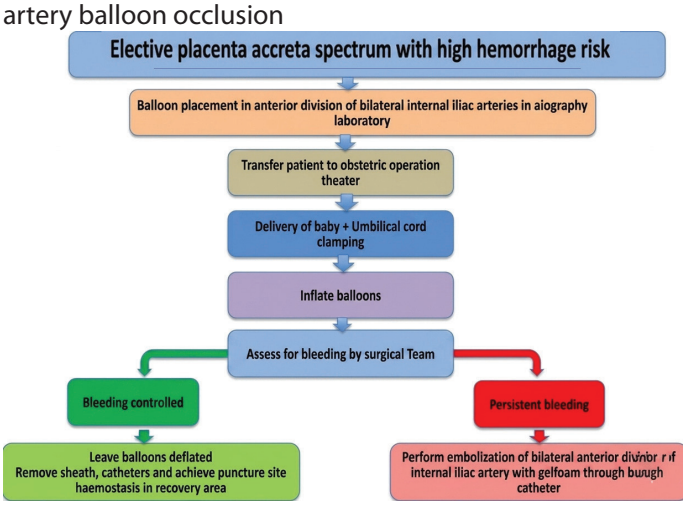


Figure 4 (A-B): shows prophylactic internal iliac artery balloon placement in anterior division of bilateral internal iliac in patient with placenta percreta (A) Balloon catheter in anterior division of right internal iliac artery (black arrow) (B) Balloon catheter in anterior division of left internal iliac artery (black arrow head)(C) shows the balloon catheter 10mm X4cm size.

TEACHING PEARL: ROLE OF INTERVENTION RADIOLOGY IN CASES WITH PAS

Algorithm for role of Intervention Radiology in cases of PAS

Flow chart depicting prophylactic bilateral internal iliac artery balloon occlusion



- **Other management options by intervention radiology which can be planned electively?**

  Occlusion of abdominal aorta is an alternative to occlusion of bilateral internal iliac arteries. Occlusion of the aorta has the additional advantage of blocking the anastomosing source from the external iliac artery, lower lumbar and median sacral artery. Techniques of prophylactic occlusion of abdominal aorta is similar to internal iliac occlusion where the balloon catheter is placed in the distal aorta via common femoral access. The balloon catheter inflated during surgery after delivery of fetus.

- **Management options in emergency setting?**

  Emergency uterine artery embolisation can be done in the management of obstetric hemorrhage refractory to conservative surgical management. It is undertaken to control postpartum hemorrhage from the preserved uterus and residual placental tissue. The procedure is done in the Angiography laboratory and angiography is performed to identify bleeding sources. Uterine arteries or collateral uterine vascularisation from ovarian, middle rectal, iliolumbar, lumbar or external iliac artery branches may be the sources of persistent bleeding due to ineffective or incomplete ligation during surgery. If the source of persistent bleeding is identified it is embolised with a permanent embolic agent such as glue otherwise prophylactic embolisation of anterior division of bilateral internal iliac artery done with temporary embolising agent gelfoam slurry. Studies have shown mixed results of the role of prophylactic balloon occlusion in the management of PAS. In comparison to occlusion techniques, literature supports the significant role of therapeutic arterial embolisation in the management of hemorrhage in PAS.

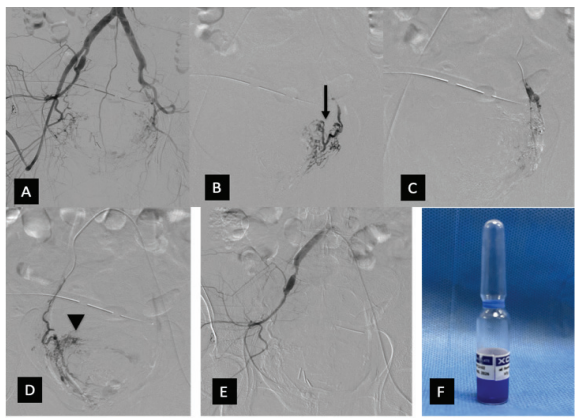


Figure 5 (A-F) Emergency embolization of bilateral uterine artery following delivery of baby with persistent bleeding,(A) Pelvic angiography shows blush from bilateral uterine artery, (B,D) Selective right uterine artery angiography(black arrow) and left uterine artery angiography(black arrow head) showing vascular blush which was embolised with 10% cyanoacrylate glue (C,E) Left and right internal iliac artery run showing non-visualisation of vascular blush (F) Cyanoacrylate glue

- Suggested optimal approach by intervention radiology team?

  Patient tailored management with prophylactic balloon occlusion in highest risk cases of PAS can help in reducing the estimated blood loss and improving the maternal outcomes while emergency therapeutic arterial embolisation has definite role in management of obstetric hemorrhage refractory to conservative surgical management.

1.3 HOW WILL YOU MANAGE THIS CASE SURGICALLY?

Seema Singhal[1], K Aparna Sharma[1], Anubhuti Rana[2], Aaroshi Gupta[3], Arti Sharma[4], Sakshi Bajaj[4]
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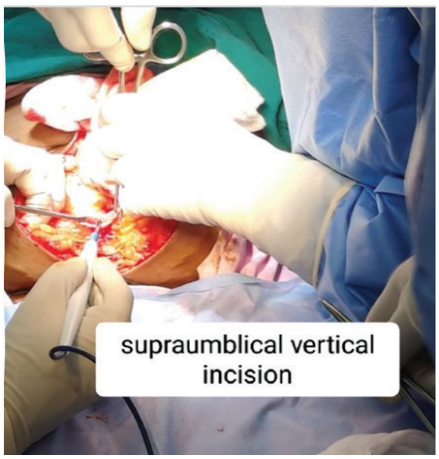
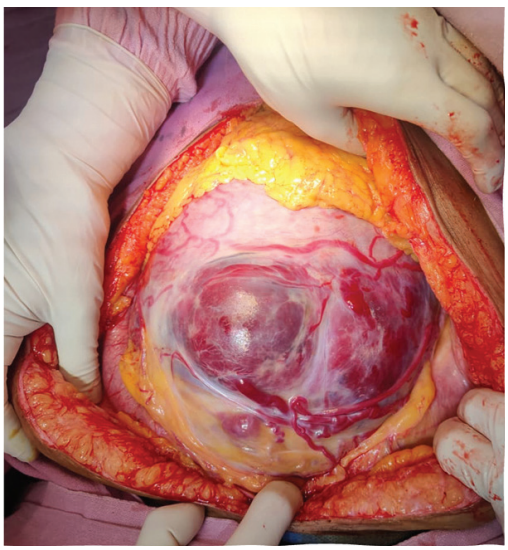
Caesarean hysterectomy is the standard of care for management of PAS.

Steps of surgery:



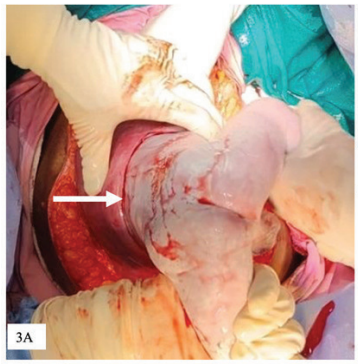
1. Midline vertical incision with supraumbilical extension

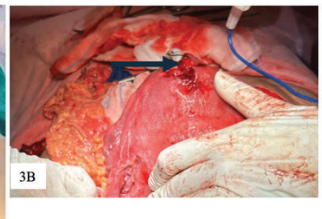


2. Careful inspection of pelvic with emphasis on vascularity over lower uterine segment, bladder dome and pelvic side wall.

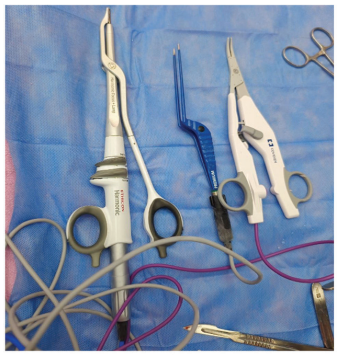
3. (A) Vertical uterine incision given (avoiding the placenta) and the baby delivered (white arrow). No attempt made to manually remove placenta.

(B) Uterine incision closed, especially, the angles of uterine incision secured. (blue arrow)



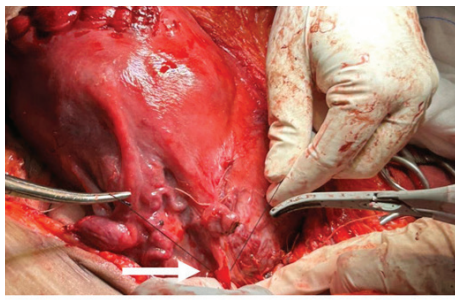


Main concern massively increased vascularity, thus energy sources used to minimize blood loss (Harmonic, bipolar and ligasure)



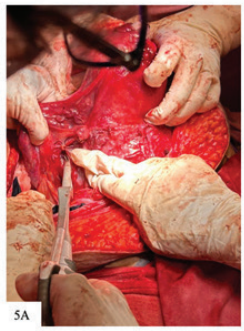
4. Proceeded with hysterectomy in same manner as abdominal hysterectomy.

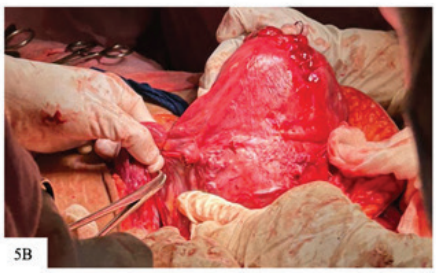
Round ligaments clamped and divided. (white arrow)

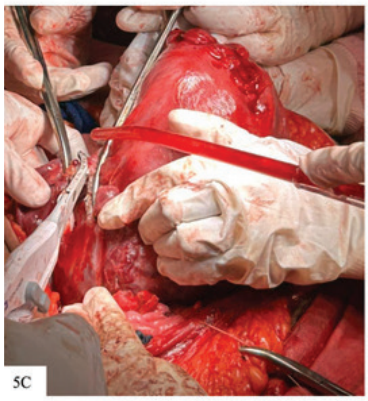


5. Posteriorly, broad ligament incised laterally and parallel to the infundibulopelvic ligament which allows visualization of retroperitoneal space and ureter throughout its course. (A and B)

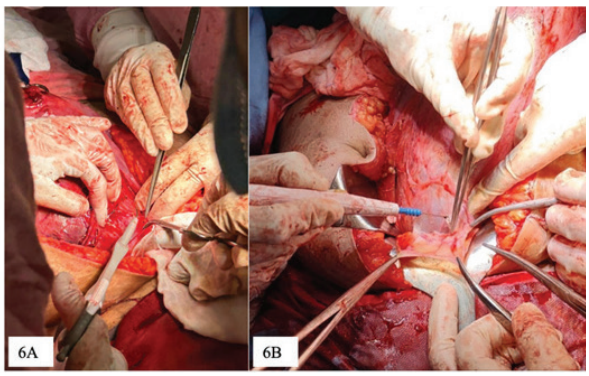
Ovarian ligament was clamped, cut and ligated. (C)

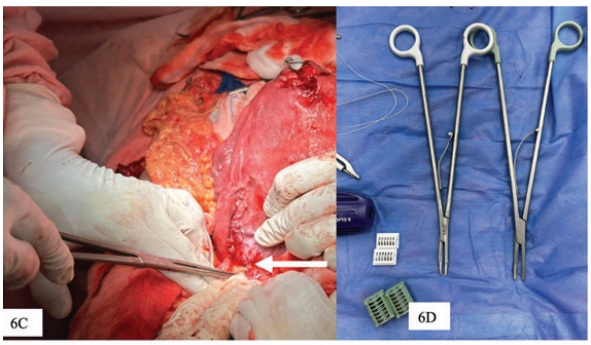




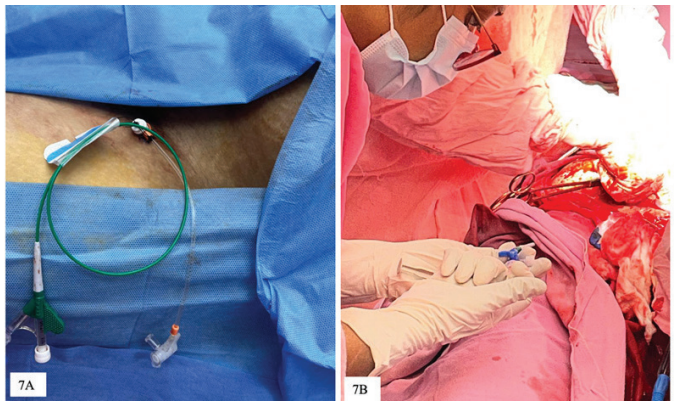


6. Uterovesical fold opened using energy sources such as harmonic (A), monopolar cautery (B), and bladder reflected from the lower uterine segment. Haemostasis was ensured by securing the bleeder using vascular clip (C) (white arrow) via a vascular clip applicator (D).

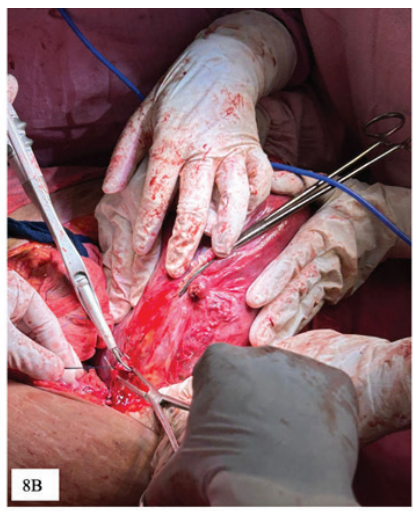


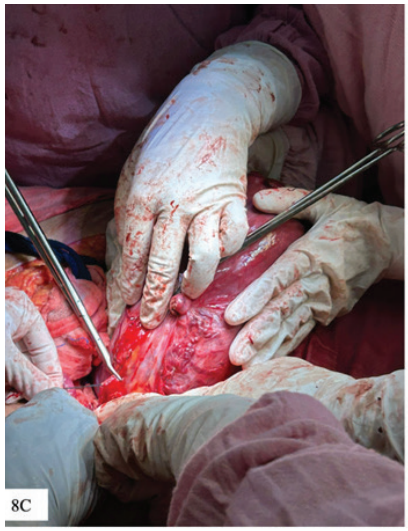


7. Preoperatively placed ballons in anterior division of internal iliac artery (A) inflated (B) (prefer to be inflated after cornual structures secured and bladder dissection completed, before proceeding with ligation of uterine artery or can be done at any step before if haemorrhage encountered.



8. Uterine arteries were ligated at the level of the internal os (A-C) after ensuring that the bladder was dissected free and displaced below the operative field. Careful placement of clamps medially, moving down the parametrial tissue and closely abutting the cervix, to allow ligation of any branches of uterine artery not ligated with first clamp.



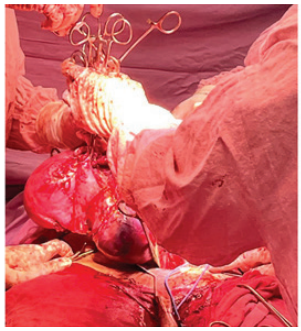


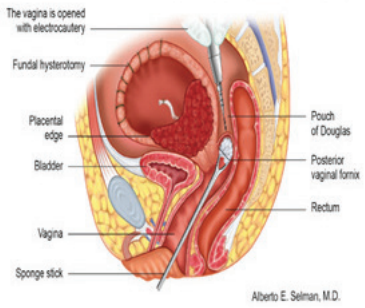
9. To identify the lowest extent of dissection i.e junction of cervix and vagina, a sponge on holder which was placed in in the posterior vaginal fornix before starting the procedure, was pushed up by assistant to identify the cervicovaginal junction.

   A transverse incision is placed at this point (lowest limit of the dissection of the cardinal ligament) and extended bilaterally. Posterior vagina opened and its angles secured.

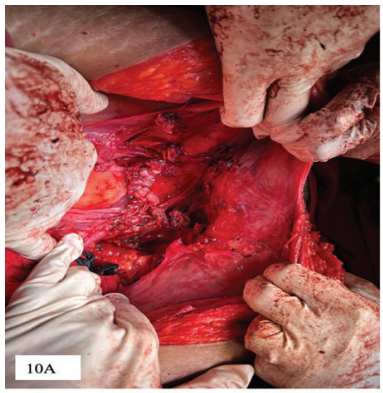
   Hysterectomy completed in a retrograde manner, with the cardinal ligament being clamped, cut and ligated.

   Clamp applied immediately below the cervix and the uterus with cervix removed and vault closure completed.

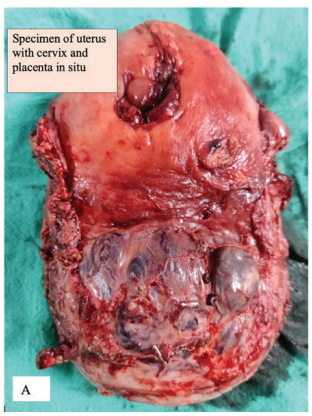


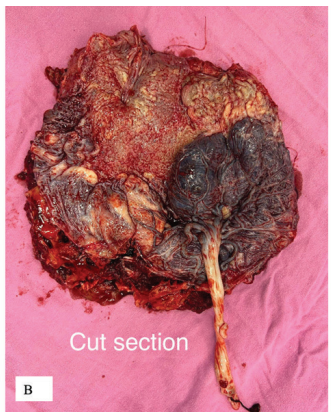


10. Haemostasis was ensured (A); integrity of bladder and ureter was ascertained before closure.



Hysterectomy Specimen (A) Gross; (B) Cut section





HER story.. HER Words..

Tanisha Gupta[1], K Aparna Sharma[2]
[1]Senior Resident, [2]Professor, Department of Obstetrics and Gynaecology, AIIMS New Delhi

FACING PLACENTA ACCRETA

Placenta accreta spectrum is a high-risk obstetric condition associated with significant maternal morbidity and potential mortality. While clinical protocols focus on optimizing outcomes, understanding the patient's perspective offers insight into the emotional, informational, and supportive needs during such a journey. The following is an account from a patient managed at AIIMS, New Delhi.

Q1. At what stage of pregnancy was placenta accreta diagnosed?

I was told that my placenta is stuck to my uterus during my Level II anomaly scan. I had no symptoms—no bleeding, nothing unusual. It was shocking because it came out of nowhere during a routine scan. After that, I came to AIIMS on my own.

Q2. Were you provided enough information about the condition?

Yes. When I came to AIIMS, my doctor explained everything in detail. She spoke to me very clearly and honestly—'This is a high-risk condition. During surgery, there can be very heavy bleeding, and we may need to remove the uterus (hysterectomy) to control it and save your life.' She also explained that I might require multiple blood transfusions, ICU care after surgery, and that nearby organs like the bladder could sometimes be involved, making the operation more complex.

I remember asking, "Is it very dangerous?" and she calmly said, "Yes, it is a serious surgery, but we are prepared for it, and our team will take all precautions to manage it safely." That reassurance stayed with me. Even though it was overwhelming to hear all this, she answered all my questions patiently, and I felt informed and supported throughout.

Q3. Based on the information you had, what were your greatest concerns?

My biggest concern was my life. I remember thinking, "Will I come out of this safely?" I was mentally prepared when they said hysterectomy might be needed—I accepted that. But the fear of not surviving the surgery stayed with me. It was not the loss of the uterus that scared me the most, it was the risk to my life. I kept wondering if everything would go smoothly and if I would be able to see my baby after the operation.

Q4. Did you feel the need to connect with other patients who had a similar condition?

Yes, very much. I wanted to know—"Has someone else gone through this and come out fine?" During my admission, the patient in the next bed had the same condition and had undergone surgery a week before me. Seeing her recover gave me a lot of strength. I also searched online, watched videos, and read about other patients' experiences—it helped me prepare mentally.

Q5. Do you have any suggestions that could have made your journey better?

It would really help if patients could talk to others who have gone through the same thing. Just hearing someone say, "I've been through this, and I'm okay," makes a big difference. Also, having simple and reliable information—maybe patient stories—would make it easier to understand and cope.

CONCLUSION

This narrative brings out a powerful reality—when faced with placenta accreta, a patient's greatest fear is not loss of fertility, but loss of life. In these moments, medicine goes beyond protocols and surgical expertise. What patients remember is how we speak to them, reassure them, and stand beside them when they are most vulnerable. Honest counselling, empathy, and trust form the foundation of care. Enabling patients to connect with others who have walked the same path can transform fear into hope. It is this blend of science and compassion that truly defines patient-centered care.

Placenta Accreta Spectrum (PAS) Patient Information Sheet

Tanisha Gupta, K. Aparna Sharma
Department of Obstetrics and Gynaecology, AIIMS New Delhi

- **What is Placenta Accreta Spectrum (PAS)?**

  Placenta accreta spectrum (PAS) is a condition in which the placenta attaches too deeply into the wall of the uterus and does not separate normally after delivery. Depending on how deeply it grows, it may be called accreta (attached deeply), increta (growing into the uterine muscle), or percreta (growing through the uterus and sometimes involving nearby organs such as the bladder).

- **Why does it happen?**

  PAS usually occurs due to previous damage or scarring of the uterus. Common risk factors include previous caesarean section, placenta lying low (placenta previa), prior uterine surgeries such as dilation and curettage or fibroid surgery, multiple pregnancies, increasing maternal age, and pregnancies conceived through IVF.

- **How is PAS diagnosed?**

  Most cases are diagnosed during a routine ultrasound in pregnancy, often in the second trimester. Sometimes, additional tests such as an MRI may be needed. Many women do not have any symptoms; however, some may develop vaginal bleeding during pregnancy. This bleeding can be dangerous and is an important warning sign—if it occurs, you should seek immediate hospital care.

- **What happens during pregnancy?**

  Many women with PAS feel completely normal and may not have any symptoms. However, bleeding can occur suddenly at any time, which may cause weakness, low blood pressure, fainting, and in severe cases, can become life-threatening. Because of these risks, you will need close monitoring with regular follow-up visits and more frequent scans.

  Once PAS is diagnosed, your care should be planned at a specialised tertiary hospital with a team experienced in managing this condition. This includes obstetricians trained in PAS surgery, anaesthesia support, interventional radiology, surgical and urology backup, as well as facilities such as maternal and neonatal ICU and a well-equipped blood bank.

  You may be advised to stay close to the hospital so you can reach it quickly in case of bleeding or other symptoms such as pain or dizziness. In some cases, you may be admitted days to weeks before delivery for monitoring. There is also a higher risk of premature birth, as labour pains or bleeding can lead to severe haemorrhage. Therefore, delivery is usually planned before labour begins, typically around 34–36 weeks.

- **What happens at the time of delivery?**

  Delivery in PAS is carefully planned to reduce risks and is carried out by an experienced multidisciplinary team. Vaginal delivery is not possible, as the placenta cannot separate normally, and any attempt to remove it can result in massive, life-threatening bleeding. The standard and safest approach in most cases is a planned caesarean hysterectomy, where the baby is delivered by caesarean section and the uterus, along with the placenta, is removed without attempting to separate it.

  In rare and carefully selected situations, alternative approaches such as preserving the uterus or leaving the placenta inside may be considered. However, these options carry risks such as delayed severe bleeding or infection, and many patients may still require a hysterectomy later. Your healthcare team will discuss the most appropriate and safest plan for you based on your individual condition.

- **What are the possible complications?**

  For the mother: PAS is associated with significant risks. These include massive blood loss during surgery (sometimes several litres), the need for multiple blood transfusions, risks related to general anaesthesia, ICU admission and injury to nearby organs such as the bladder, bowel, or ureters, especially if the placenta is attached to them. Recovery may involve a prolonged hospital stay and the need for a urinary catheter for a longer duration. Removal of the uterus results in loss of future fertility, and the surgery may leave a vertical abdominal scar. In rare cases, complications can be severe and life-threatening.

  For the baby: PAS itself usually does not harm the baby if the placenta is functioning well. However, risks are mainly related to premature birth, as delivery is often planned around 34–35 weeks or earlier if required. Some babies may need care in the neonatal intensive care unit (NICU).

- **What are the outcomes?**

  If PAS is not diagnosed early or not managed in a specialised centre, it can lead to serious, life-threatening complications, and in rare cases may pose a risk to the mother's life. However, with early diagnosis, careful monitoring, and planned delivery in a specialised hospital with an experienced team, outcomes are generally good for both mother and baby. Some women may require a longer hospital stay and recovery period after surgery.

- **What happens to my ovaries and future fertility?**

  During surgery, if a hysterectomy is required, the uterus is removed, but the ovaries are usually preserved. This means you will not go into menopause immediately, as your hormones will continue to be produced normally. However, since the uterus is removed, you will not be able to have future pregnancies, and you will no longer have menstrual periods.

- **Will it happen again?**

  If the uterus is preserved, there is a chance that PAS may occur again in a future pregnancy. The recurrence risk is approximately 22–30%, and such pregnancies will require close monitoring and specialised care.

- **What can you do as a patient?**

  Attend all antenatal visits and recommended scans, share your full medical and surgical history with your doctor, and follow advice regarding the timing and place of delivery. Staying informed and prepared can significantly improve safety and outcomes.

- **Emotional Support & Counselling**

  It is normal to feel anxious or scared after a diagnosis of PAS. Open communication with your doctor can help address concerns. Speaking with other patients who have had similar experiences and seeking counselling or family support can help you cope better during this time.

- **When should you seek urgent care?**

  Seek immediate medical attention if you experience vaginal bleeding, severe abdominal pain, or reduced fetal movements. Prompt care can be life-saving.

  For PIS in Hindi, please use the following link:

  https://drive.google.com/file/d/1mIlqj02YyHrYWBL-MRm8JsL8t5EN69VK/view?usp=drivesdk

Know Your Drug

Kamna Datta[1], Sneha Arora[2]
Professor, Resident, Department of Obst & Gynae, ABVIMS and RML Hospital

INTRODUCTION

Recombinant activated factor VII (rFVIIa) (Eptacog alfa), has emerged as a potential rescue therapy in life-threatening obstetric bleeding.

MECHANISM OF ACTION OF RFVIIA AND PHARMACOLOGY (FIG.1)

rFVIIa acts primarily through the Extrinsic coagulation pathway. Under physiological conditions:

Under physiological conditions:

- Factor VIIa binds to tissue factor at the site of vascular injury
- This activates factor X, and Xa with Va and calcium→ thrombin generation→fibrin clot formation2
- At pharmacological doses, however, rFVIIa not only complexes with the exposed tissue factor and initiates the coagulation cascade, but also has an additional effect:
- It directly stimulates thrombin generation by binding to the activated platelet surfaces at the injury site (tissue factor-independent action), even in low tissue factor states.
- Rapid, localised Thrombin bursts
- Formation of a stable haemostatic plug at the site of injury

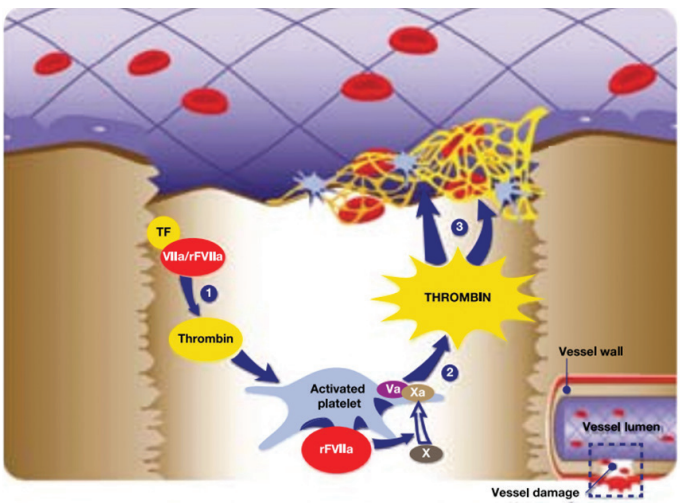


Figure 1 : Mechanism of action of rFVIIa (FOGSI Focus 2022)

The role of rFVIIa is best understood as a salvage or rescue therapy in refractory haemorrhage. Royal College of Obstetricians and Gynaecologists (RCOG) recommends its use only in life-threatening haemorrhage with haematology input.

Pharmacokinetics and Dosage: Brand name: NovoSeven® 1 mg, NovoSeven® 2 mg

- rFVIIa has a short half-life (~2-3 hours) and is administered as an intravenous bolus injection.
- The recommended dose for treating bleeding is 60–90 micrograms/kg of body weight.
- Onset of action is quick, and peak coagulant activity is typically achieved within 10 minutes.
- A repeat dose may be given depending on the patient's clinical response; if haemostasis remains inadequate, a second dose is recommended after 30 minutes.
- There is no specific monitoring required after rFVIIa administration.

CLINICAL PREREQUISITES

Importantly, rFVIIa requires a reasonable substrate to work. The process of thrombin generation on activated platelet surfaces and subsequent clot formation depends on sufficient platelets and fibrinogen availability for conversion into fibrin; therefore, adequate fibrinogen concentration and platelet count are essential to achieve optimal therapeutic benefit.

Ideal conditions before giving rFVIIa are Platelets >50,000/µL, fibrinogen >1–1.5 g/L, pH >7.2 (no acidosis) and no hypothermia (Temperature >35°C). However, these are not mandatory, and use may be guided by clinical judgment. As emphasised in RCOG guidelines, for the maximum effect of rFVIIa on clot formation, acidosis, thrombocytopenia, and hypofibrogenemia must be corrected.

RISKS AND LIMITATIONS

The most commonly reported adverse drug effects are inadequate therapeutic response, hypersensitivity, fever, rash, pruritus, urticaria, and thromboembolic events, including deep venous thrombosis, pulmonary embolism, myocardial infarction and peripheral arterial thrombosis, have all been described, although with an estimated incidence of less than 1%.

CONCLUSION

- In contemporary practice, rFVIIa is best viewed not as a replacement for surgical or transfusion strategies, but as a targeted adjunct in extreme situations.

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2. Zatta A, McQuilten Z, Kandane-Rathnayake R, Isbister J, Dunkley S, McNeil J, et al. The Australian and New Zealand Haemostasis Registry: ten years of data on off-licence use of recombinant activated factor VII. Blood Transfus. 2015;13(1):86–99.

Residents Desk

Shagun
Ex-resident, Department of Obst and Gyane, AIIMS, Delhi

एक खुली जमीन यहां की, एक खुला है आस्मां
क्यूँ बंद करे जकड़े खड़ा, है अंधेरा बस यहां,
जंजीर से क्यों जोड़ कर, ये हाथ मेरा है बंधा
हैसियत क्या हैवान की, जो दर्द यूं जकड़े खड़ा,
एक बार तु भी तो मुझसे आँख से ये आँख मिला,
फिर तु देखेगा यूं जैसे क्रोध का मंजर चला,
एक अग्नि जल रही है, मेरे सीने में कहीं,
ज्वाला बन कर जल उठी, है आग जैसे हर कहीं,
है अगर अंदाज तुझे तो क्रोध मेरा देख जा,
ना सहन कर पाएगा अग्नि, ना सहन होगा ये शमा..
तेरी तो राख का भी कण कण, भस्म ऐसे मैं करूं,
कि अस्तित्व तेरा रेंग कर खत्म हो जाएगा यहां,
एक खुली जमीं यहां कि, एक खुला है आस्मां,
देख तो ले तु जरा, एक नारी का गुमान
एक नारी की शक्ति इतनी, उसकी एक ये पहचान
आँख से ही रौंध दे वो, इतनी मकम्मल उसकी जां,
एक खुली जमीं यहां कि, एक खुला है आस्मां
एक खुली जमीं यहां कि एक खुला है आस्मां.....

Within every woman lies endless opportunities and infinite possibilities waiting to unfold. There is no power she cannot embody. She has the strength to burn away every negative force that dares to stand in her path, rising stronger with every challenge. In every circumstance she finds herself in, she has the courage to thrive and transform. Such is the boundless strength a woman holds within her.

Wellness Corner

Sujata Sharma
Professor, Department of Biophysics, AIIMS, New Delhi

The human body does not separate emotion from biology. What we feel, suppress, or silently endure is not confined to the mind. It is translated into chemistry. This connection is especially profound in women, where the endocrine system is finely tuned to emotional states.

At the center of this interaction lies the hypothalamic pituitary adrenal axis, the body's stress response system. When a woman experiences stress, whether from external demands or internal emotional conflict, the brain signals the release of cortisol. In short bursts, cortisol is protective. However, when stress becomes chronic, it begins to disturb the body's internal balance.

Cortisol interacts with the hypothalamic pituitary gonadal axis, which regulates reproductive hormones such as estrogen and progesterone. Persistent stress can suppress ovulation, alter menstrual cycles, and contribute to symptoms such as fatigue, mood changes, and premenstrual disturbances. The body, sensing continuous pressure, shifts its priority from long term regulation to immediate survival.

A significant source of this chronic stress lies in a pattern many women carry, the tendency to serve. Women often step in quickly to help, to fix, and to support. This behaviour does not arise from weakness, but from conditioning. From early life, approval is often linked to being caring, accommodating, and useful. A woman learns that being needed ensures belonging. Over time, service becomes automatic. She anticipates needs, responds immediately, and rarely pauses to ask what she herself requires.

This constant outward orientation comes at a cost. When a woman repeatedly overrides her own needs, the body registers a subtle but continuous strain. Emotional signals are suppressed. Physical fatigue is ignored. The nervous system remains engaged, as if it must always be ready to respond. Even in quiet moments, there is a background sense of responsibility.

This internal state has physiological consequences. Stress pathways remain active, leading to elevated cortisol levels and disruption of hormonal rhythms. Sleep becomes less restorative. Energy fluctuates. Over time, this may contribute to broader imbalances involving metabolism, thyroid function, and immune response.

Silence and over giving, therefore, are not neutral behaviors. They have a biological imprint. From a deeper perspective, this reflects an imbalance between giving and receiving. The body is designed for cycles of effort and restoration, expression and rest. When giving becomes constant and restoration is neglected, the system loses equilibrium.

Change begins with awareness. A woman must first recognize the impulse to immediately serve and gently interrupt it. She can pause before responding or ask whether a response is necessary. She can begin to include her own needs in the decision. This is not a withdrawal from care, but a refinement of it.

Small shifts like saying no without guilt, taking rest without justification, expressing discomfort without fear of disapproval, are very effective. Each of these actions signals safety to the body. Slowly, the nervous system begins to settle, hormonal patterns gradually stabilise and energy becomes more consistent.

For women, wellness lies in restoring balance between care for others and care for self. The endocrine system responds continuously to this balance. When a woman stops living only in service and begins to live with awareness of herself, her biology begins to reflect that shift. Healing, then, is not about doing more. It is about allowing space for oneself within one's own life. In that space, the body returns to its natural rhythm.

"UNVEILING POSTPARTUM COMPLICATIONS: FROM RETENTION TO FISTULA"

"BURDEN AND PREDICTORS OF POSTPARTUM URINARY RETENTION: A PROSPECTIVE COHORT STUDY"

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Background

Postpartum urinary retention (PPUR) is a relatively underdiagnosed but clinically significant condition characterized by an inability to void urine spontaneously after childbirth. If undetected, it may result in bladder overdistension, urinary tract infection, or long-term voiding dysfunction.

Aim

To determine the prevalence of PPUR and identify the intrapartum risk factors associated with its occurrence.

Materials and Methods

This cross-sectional study was conducted at the Department of Obstetrics and Gynaecology, HAHC Hospital, New Delhi, over 1.5 years. A total of 406 postpartum women were included after informed consent. A predesigned proforma was filled to study the risk factors associated with PPUR. Intake-output monitoring, bladder diary maintenance, and ultrasonographic assessment of post-void residual urine were performed. PPUR was defined as inability to void within 6 hours post-delivery or catheter removal, or a post-void volume >150 mL. Data were analyzed to correlate ante/intrapartum variables with PPUR.

Results

Out of 406 participants, 41 (10.1%) developed PPUR, and 34.1% of them required catheterization. Statistically significant associations were observed between PPUR and prolonged total duration of labor ($p = 0.009$), prolonged second stage of labor ($p = 0.041$), urinary tract infection (antenatal and postnatal, $p = 0.019$ and 0.016, respectively), and perineal trauma or episiotomy ($p = 0.017$).

Conclusion

PPUR is not uncommon and often overlooked. Prolonged labor, perineal trauma, and urinary tract infections are major risk factors. Early recognition through postpartum bladder monitoring and ultrasound assessment is crucial to prevent long-term urinary complications.

"SILENT BLADDER, EXPLOSIVE OUTCOME"

Priyanka Priyadarshini, Nidhi Gupta, Arifa Anwar, Aruna Nigam

Spontaneous rupture of the urinary bladder (SRUB) in the postpartum period is an exceptionally rare and life-threatening condition, defined by the absence of antecedent trauma or underlying bladder pathology. Its incidence is estimated at 1 in 126,000 cases.

We report two cases of retention leading to spontaneous bladder rupture. First case is of a 33-year-old primigravida who developed idiopathic SRUB on postpartum day 22 following an otherwise uncomplicated full-term vaginal delivery with episiotomy. Second case is of 26 year old patient following a full term vacuum delivery presented on day 12 with SRUB. Postpartum urinary retention, particularly covert retention, is identified as the likely etiological factor in these cases. Bladder overdistension may lead to ischemic necrosis and eventual rupture. Clinically, SRUB often mimics an acute abdomen, presenting with abdominal pain, distension, and ascites, along with associated biochemical abnormalities such as elevated serum creatinine and urea levels. Imaging modalities such as ultrasound and contrast-enhanced CT scan play a crucial role in diagnosis, often revealing free intraperitoneal fluid and bladder wall discontinuity. Prompt surgical intervention, usually in the form of exploratory laparotomy and bladder repair, is essential for favourable outcomes.

Delay in diagnosis can significantly increase morbidity due to complications such as peritonitis, sepsis, and electrolyte imbalance as well as mortality. These cases highlight the critical need for early recognition and vigilant monitoring of postpartum voiding dysfunction. Implementation of simple measures, including post-catheterization voiding assessment, bladder scanning, and maintenance of a voiding diary, may aid in early detection of urinary retention. Increased awareness among clinicians can facilitate timely diagnosis and intervention, ultimately preventing catastrophic outcomes and improving maternal safety in the postpartum period.

"HOLES & TEARS: UNSEEN PERINEAL INJURIES "

Sumaira Saeed, Dina Aisha Khan, Supriya Chaubey, Aruna Nigam

Obstetric anal sphincter injuries (OASIS), including third- and fourth-degree perineal tears or complete perineal tears (CPTs), constitute a significant yet underdiagnosed cause of maternal morbidity. The overall incidence of OASIS is reported to be approximately 2.9% of vaginal deliveries, with a higher prevalence among primiparous women (~6.1%) compared to multiparous women (~1.7%). Rectovaginal fistula (RVF), a serious complication often resulting from missed or inadequately repaired injuries, occurs in approximately 1–3% of cases following OASIS repair, with some studies reporting rates as high as 8.2%.

We present two cases of occult, previously unrecognized OASIS and two cases of rectovaginal fistula, along with their management, highlighting the importance of timely detection and preventive strategies in obstetric practice.

Unidentified CPTs remain a critical concern in obstetric practice, particularly in the presence of established risk factors such as primigravidity, fetal macrosomia (>4000 g), prolonged second stage of labor, and instrumental deliveries. Early identification through a systematic perineal and rectal examination following every vaginal delivery is essential to improve detection rates of occult injuries. Timely diagnosis enables immediate repair, which is associated with better functional outcomes and reduced risk of complications such as RVF, challenging the previously recommended delayed repair approach.

From a medicolegal perspective, while the occurrence of OASIS is not inherently indicative of negligence, failure to diagnose and appropriately manage such injuries is considered a deviation from the standard of care. Missed fourth-degree tears may be classified as grievous bodily harm due to their potential for permanent functional impairment.

In conclusion, adherence to standardized examination protocols, early recognition, and prompt management are crucial to improving maternal outcomes and minimizing medicolegal risk.

Block Your Dates

Date/Month/ Year	Name of Event	Venue
8-10 May 2026	VP Conference	Indore
19-21 June 2026	WZ with YUVA	Amravati
11-12 July 2026	Critical Care Conclave	Trichy
18-19 July 2026	Stillbirth Conclave	Patna
1-2 August 2026	Fetal Medicine Conclave	Cochin
29-30 August 2026	Preventive Oncology Conclave	Aligarh
4-6 September 2026	SZ with YUVA	Rajahmundry
12-13 September 2026	AOGD Conference	New Delhi
2-4 October 2026	NZ with YUVA	Jammu
23-25 October 2026	RCOG Annual	Mumbai
12-15 November 2026	Presidential Conference	Kolkata
5-6 December 2026	Endo ART Conclave	Pune
6-10 January 2027	AICOG	Surat

CONGRATULATIONS

Newly elected AOGD Sub - Committee Chairpersons (2026-28)

2026-2028			
Sub-Committee	Chairperson	Contact No.	Email
Menopause & Geriatrics Subcommittee (New)	Dr Meenakshi Ahuja	9810264890	atulmeenakshi@gmail.com
Infertility & Reproductive Endocrinology sub-committee	Dr Bindu Bajaj	9711067661	Bindubajaj15@gmail.com
Community Health & Public Awareness sub-committee	Dr Divya Singhal	9810414914	drdivyasinghal@gmail.com
Safe Motherhood sub-committee	Dr Ratna Biswas	9971372695	drratnabiswaspaul@yahoo.co.in
Medico-legal sub-committee	Dr Susheela Gupta	9312234911	drsusheelagupta@gmail.com

2025-2027			
Sub-Committee	**Chairperson**	**Contact No.**	**Email**
Adolescent Health sub-committee	Dr Dipti Nabh	9810212166	diptinabh@gmail.com
Endometriosis sub-committee	Dr Rita Bakshi	9810143703	ritabakshi.ifc@gmail.com
Endoscopy sub-committee	Dr Kanika Jain	9811022255	drkanika@gmail.com
Fetal Medicine and Genetics sub-committee	Dr Upma Saxena	9910829017	upma_saxena@hotmail.com
Oncology sub-committee	Dr Bindiya Gupta	9810719002	dr_bindiya_gupta@yahoo.co.in
QI Obst & Gynae Practice sub-committee	Dr Surveen Ghumman	9810475476	surveen12@gmail.com
Urogynaecology sub-committee	Dr Sonal Bhatla	9811444563	drsonalbathla11@gmail.com

AOGD SUBCOMMITTEE MEMBERS LIST

Menopause and geriatric subcommittee (2026-28) (New)

Chairperson: Dr Meenakshi Ahuja

Members
Dr Jyoti Bhaskar
Dr Uma Vaidyanathan
Dr Neha Kapoor
Dr Shelly Singh
Dr Mahima Kak Nagpaul
Dr Ila Gupta
Dr Taruna Dua
Dr Susheela Gupta
Dr Nimmi Rastogi
Dr Tejashri

Infertility and Reproductive Endocrinology (2026-28)
Chairperson: Dr Bindu Bajaj
Secretary : Dr Archana Kumari

Members
Dr Garima Kapoor
Dr Divya Pandey
Dr Reeta Bansiwal
Dr Neeti Tiwari
Dr Parul Garg
Dr Neha Pruthi
Dr Pikee Saxena
Dr Juhi
Dr Meenakshi
Dr Richa Sharma
Dr Kavita Agarwal
Dr Sujata Agarwal
Dr Ankita Srivastava
Dr Ruchi Hooda
Dr Pooja Uniyal

Community Health & Public Forum AOGD (2026-2028)
Chairperson - Dr Divya Singhal
Advisor: Dr Mala Srivastav
Members:
Dr Rita Bakshi
Dr Leena Sreedhar
Dr Surekha Jain
Dr Dipika Loganey
Dr Shama Batra
Dr Preeti Gaur
Dr Gargi Vikas Sharma
Dr Pratibha Garg
Dr Manjusha Goel

Safe motherhood Subcommittee AOGD (2026-28)
Chairperson : Dr Ratna Biswas
Secretary : Dr Deepika Meena
Members:
Dr Pikee Saxena
Dr Taru Gupta
Dr Deepa Gupta
Dr Shashilata Kabra
Dr Anita Rajoria
Dr Neeru Malik
Dr Jagriti Varshney
Dr Meenakshi Singh
Dr Shilpi Nain
Dr Aishwaya Kapoor

Medico Legal Subcommittee (2026-28)
Chairperson: Dr Susheela Gupta
Secretary : Dr Vandana Gupta
Members
Dr Anita Rajhoria
Dr Deepa Gupta
Dr Kiran Chabbra
Dr Nidhi Khera
Dr Rhythm A Gupta
Dr Rita Bakshi
Dr Shakuntla Kumar
Dr Surekha jain
Dr Sushma Sinha
Dr Uma Vaidyanathan
Dr Yukti wadhavan

Adolescent Health Sub-committee 2025-27
Chairperson: Dr Dipti Nabh Mother & Child centre
Advisors: Dr A G Radhika, Dr Manju Khemani , Dr Sanjeevni Khanna

Members
Dr Chandra Mansukhani
Dr Raka Guleria
Dr Meenakshi Sharma
Dr Panchampreet
Dr Seema Gupta
Dr Pratibha Garg
Dr Shweta Sardana
Dr Ruchi Singhal
Dr Sony Anand
Dr Sujata Aggarwal
Dr Mrinalini Mani
Dr Taru Gupta

Endometriosis Sub-committee 2025-27
Chairperson : Dr Rita Bakshi
Advisor : Dr Susheela Gupta
Members
Dr Bandana Sodhi
Dr Jayshree Sundar
Dr Sunita Lamba
Dr Shakuntala Kumar
Dr Shalini Chawla khanna
Dr Pikee Saxena
Dr Neeru kiran
Dr Neha Mishra
Dr Divya
Dr Vandana Gupta

Endoscopy Sub-committee
Chairperson: Dr Kanika Jain
Advisor: Dr Indu Chawla
Members
Dr Y M Mala
Dr Sonia Naik
Dr Madhu Goel
Dr Rekha Bharti
Dr Swati Agrawal
Dr Aastha Aggarwal
Dr Megha Kansara
Dr Renuka Brijwal
Dr Panchampreet Kaur
Dr Priyanka

AOGD Fetal Medicine & Genetics Sub-Committee (2026–27)
Chairperson: Dr Upma Saxena
Advisor : Dr Renu Arora & Dr Asmita Rathore
Member Secretary : Dr Dipika Loganey
Members
Dr Seema Thakur
Dr Sangeeta Gupta
Dr Jyoti Gupta
Dr Aayush Jain
Dr Vandana Chaddha
Dr Veronica Arora
Dr Jaya Chawla
Dr Sumitra Bachani
Dr Jayati Dureja
Dr Tina Verma
Dr Manish Kumari

Oncology Subcommittee 2025-27

Chairperson: Dr Bindiya Gupta

Member Secretary:
Dr Seema Singhal
Advisors : Dr Neerja Bhatla, Dr Rupinder Sekhon

Members
Dr Anshuja Singla
Dr Archana Misra
Dr Kanika Batra Modi
Dr Mala Srivastava
Dr Neha Kumar
Dr Nidhi Gupta
Dr Pakhee Agarwal
Dr Saritha Shamsunder
Dr Satinder Kaur
Dr Sharda Patra
Dr Shruti Bhatia
Dr Vandana Jain

QI Obst. & Gynae Practice Subcommittee 2025-27

Chairperson :
Dr Surveen Ghumman
Members:
Dr manju puri
Dr Jyotsana Suri
Dr Renu Tanwar
Dr Akanksha Sharma
Dr Aakriti Batra

Urogynaecology Subcommittee 2025-27

Chairperson:
Dr Sonal Bathla

Member Secretary: Dr Shalu Jain

Advisors: Dr Ranjana Sharma, Dr Kishore Rajurkar, Dr Pawan Bhasin, Dr Achla Batra, Dr Manju Puri, Dr J B Sharma

Members
Dr Amita Jain
Dr Anuradha
Dr Bharti Uppal Nayyar
Dr Geeta Mediratta
Dr Karishma Thariani
Dr Manasi Deograh
Dr Muntaha
Dr Monika Gupta
Dr Rajesh Kumari
Dr Sandhya Jain
Dr Uma Swain

Previous Events, April 2026

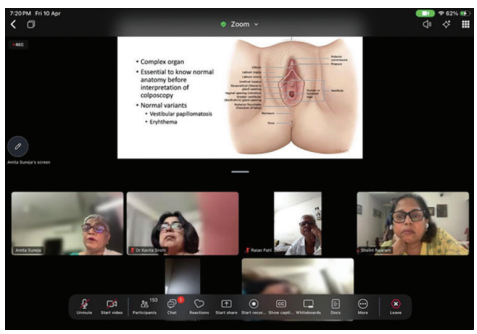
Glimpses of the **AOGD Office handing** over to the AIIMS, New Delhi on on 30th March, 2026 .

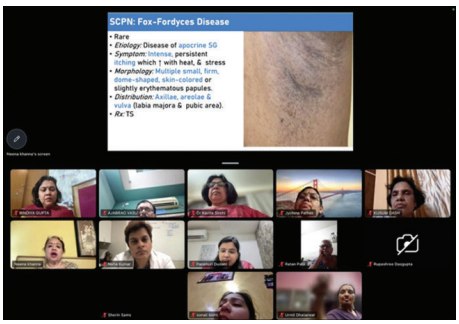


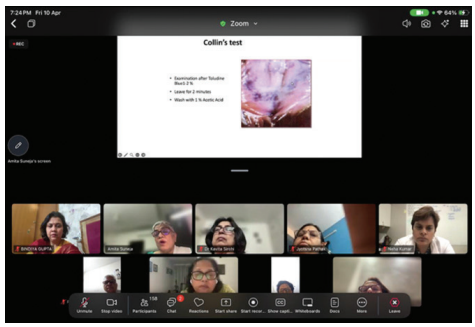


On the occasion of World Health Day, the Department of Obstetrics & Gynaecology, Lady Hardinge Medical College & Smt. Sucheta Kriplani Hospital, under the aegis of the Safe Motherhood Subcommittee, organized a **Public Awareness Program** on 7th April 2026 at ANC OPD. The program aimed to educate antenatal women and the general public about essential aspects of maternal health, nutrition, anaemia prevention, and the role of yoga in maintaining overall well-being.

Department of Gynecologic Oncology, Amrita Hospital, Faridabad, under the aegis of AOGD Oncology Committee organised a webinar on *INDIGO – Introspections and Deliberations in Gynecologic Oncology* on Topic: **Decoding Vulval Lesions: Benign to Pre-invasive** on 10/4 /2026. Convener was Dr Neha Kumar, Senior Consultant and Lead, Gyn Oncology at Amrita Hospital. There were enriching and intellectually stimulating lectures on benign and premalignant lesions of vulva as well as vulvoscopy by senior and learned faculty. The webinar was attended by more than 180 delegates and extremely appreciated by all.



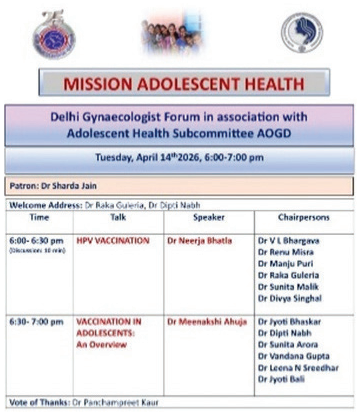




On the occasion of Safe Motherhood day on 11th April, 2026 , the Department of Obstetrics and Gynaecology , LHMC & SSK Hospital organized following activities to promote Maternal Health and generate **community awareness on the Safe Motherhood**:

- Focus Group discussion (FGD) Regarding anemia, diabetes & Antenatal care
- Special desks Screening for Anemia/ DM for Pregnant women
- Pledge on occasion of Safe motherhood day
- Public awareness campaign regarding family planning methods
- Feedback regarding safe delivery app
- IEC Activities executed via videos run on LED screen

Webinar on HPV Vaccination conducted by Adolescent health subcommittee, AOGD in association with Mission Adolescent Health subcommittee & Delhi Gynae forum on 14th April 2026. Dr Neerja Bhatla was the guest speaker and the webinar was attended by over 50 delegates. It was a well attended session and endless doubts of delegates and faculty were cleared by the eminent speaker busting all the myths!



MISSION ADOLESCENT HEALTH

Delhi Gynaecologist Forum in association with Adolescent Health Subcommittee AOGD

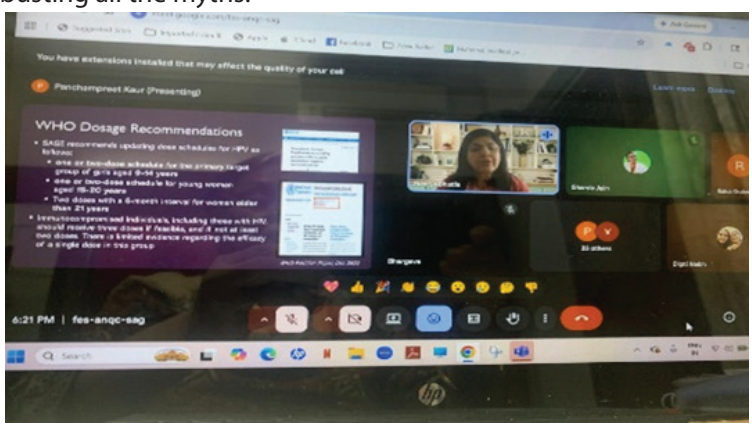
Tuesday, April 14th 2026, 6:00-7:00 pm

Patron: Dr Sharda Jain

Welcome Address: Dr Raka Guleria, Dr Dipti Nabh

Time	Talk	Speaker	Chairpersons
6:00- 6:30 pm (Discussion: 10 min)	HPV VACCINATION	Dr Neerja Bhatla	Dr V L Bhargava Dr Renu Misra Dr Manju Puri Dr Raka Guleria Dr Sunita Malik Dr Divya Singhal
6:30- 7:00 pm	VACCINATION IN ADOLESCENTS: An Overview	Dr Meenakshi Ahuja	Dr Jyoti Bhaskar Dr Dipti Nabh Dr Sunita Arora Dr Vandana Gupta Dr Leena N Sreedhar Dr Jyoti Bali

Vote of Thanks: Dr Panchampreet Kaur



Under the aegis of AOGD Endometriosis subcommittee in association with Community Health & Public Awareness subcommittee, an activity was conducted in marginalized girl school on menstrual hygiene and environment friendly washable napkins were distributed to them on 16th April, 2026. It was a CSR activity of SBI.

The **first Executive Committee meeting of AOGD 2026** was convened at AIIMS, Board Room and chaired by Prof Neena Malhotra, President AOGD on 18th April 2026 . The annual agenda including academic events and proposal for forthcoming annual conference was discussed. It was well attended by 50-60 delegates including few stalwarts of the field.

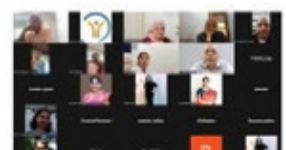
Talk on menstrual hygiene and menstrual irregularities delivered by executive members of Adolescent Health Subcommittee, AOGD (Dr Shweta Sardana and Dr Mrinalini Gupta) on 18th April 2026 at Rosemary School, Dilshad garden. The discussion involved students of class 8,9 and 10 and was very interactive.

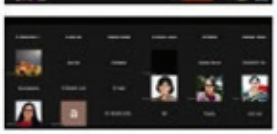
Department of Obstetrics & Gynaecology, Lady Hardinge Medical College under the aegis of Safe motherhood Subcommittee of AOGD organized a CME on **Co-Morbidities in Maternal Health** on 18th April 2026 at MEU hall, LHMC. It was a multidisciplinary CME involving allied medical sub-specialities to address pre-existing Co-Morbidities like SLE, Cardiac diseases, Obesity, Psychiatric illness, Neurological, Pulmonary and Renal diseases which contribute significantly to severe maternal morbidity. Key takeaways were ways to promptly diagnose and appropriately manage them. The uniqueness of the CME and the excellent scientific deliberations were the highlights of the event.

A public awareness CME on "Immunization" was organized under the aegis of conducted by Community Health & Public Awareness Sub-Committee on 22nd April, 2026 at Sir Ganga Ram Hospital, New Delhi. The organising chairperson was Dr Mala Srivastava. It was an interactive session in which 50-60 Student Nurses participated. It was heartening to note that they had all received the HPV vaccination provided free of cost.

Masterclass on vaginal surgeries was conducted by Urogynae Committee, AOGD and Otki Foundation in March-April, 2026.

The 2nd Masterclass on Vaginal Surgeries





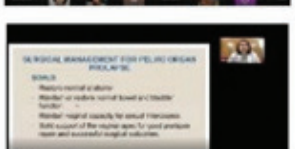
The 2nd Masterclass on Vaginal Surgeries was successfully organized in March-April 2026 under the aegis of SOVSI, SOVSD, DGF, Urogynae Committee of AOGD and the Okti Foundation.

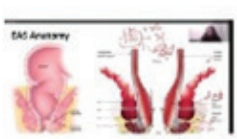
The masterclass including 26 lectures of 2 hours each, witnessed enthusiastic participation of 62 delegates with over 45 faculty members.

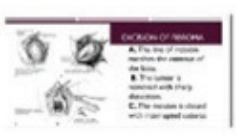
The sessions were thoughtfully structured to cover a wide range of topics including basic to advance vaginal surgical techniques , management of pelvic organ prolapse , non descent vaginal hysterectomy

The faculty shared valuable clinical insights, practical tips and evidence based approaches.

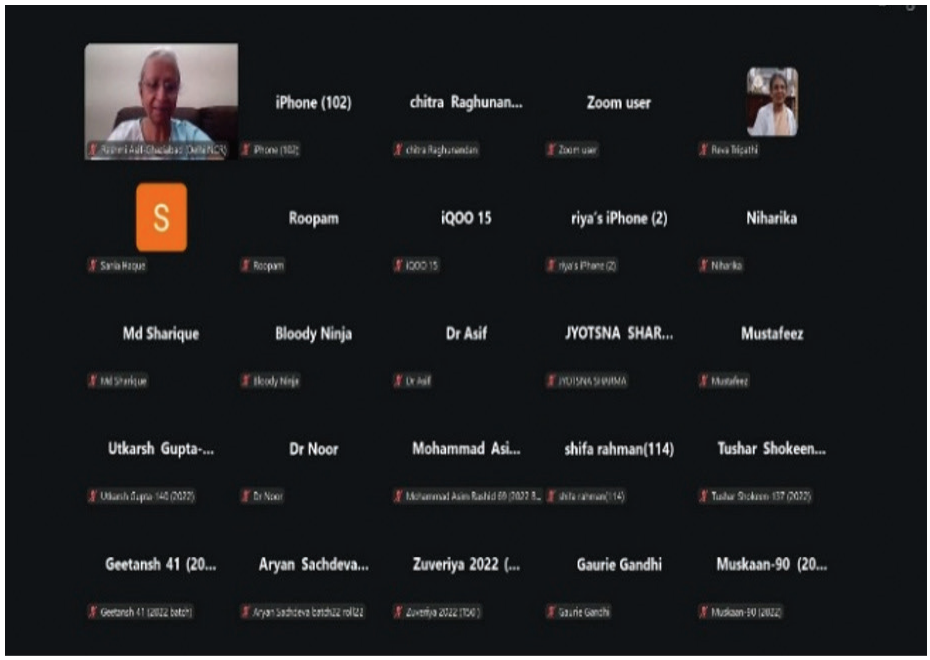
Feedback received from delegates was overwhelmingly positive with many highlighting the relevance of topics, clarity of presentation and the expertise of the faculty.







The AOGD Monthly Clinical Meeting (virtual) was conducted by the Department of Obst & Gynae, Hamdard Institute of Medical Science & Research Hospital on 24th April, 2026.



Under the aegis of AOGD and FOGSI oncology committee, Division of gynaecologic oncology , VMMC and Safdarjung Hospital, Delhi organised gynaecology oncology update on 26th of April at Hotel, Hyatt Regency, New Delhi. The convenors were Dr Saritha Shyamsundar, Dr Archana Misra and Dr Divya Sehra. It was well attended by almost 80 faculty and delegates. The scientific program was excellent, which kept the audience alert and the hall was full till the end. There were interesting lectures and interactive panels on various aspects of gynaecology oncology including ovary, cervix, endometrium and vulva and vagina.

HPV vaccination awareness activity was organised by Department of Community Medicine and Department of Obstetrics and Gynaecology UCMS and GTB Hospital Delhi at Sant Eknath Sarvodaya Kanya Vidhyalaya, Dilshad Garden on 28/4/26. The faculties Dr Aparna Kapoor, Dr Pragti Chabra, Dr Bindiya Gupta gave awareness lectures regarding HPV vaccination to 9-10th girls of classes. They were made aware of the free of cost vaccine availability in government hospitals. All myths and doubts were cleared in the question answer session. The resident doctors also presented a play on HPV vaccination. The activity was done in collaboration with ISCCP and AOGD oncology Committee.

Under the aegis of Public Awareness subcommittee, AOGD , Dr Leena Sreedhar conducted an interactive session on menstrual hygiene at GD, Goenka School, Dwarka on 28th April, 2026.

Under aegis of Medico Legal Subcommittee AOGD, an interactive CME was held at City Park, Pitam pura on 30th April, 2026. Maternal Anaemia and its Prevention was discussed by Dr. Susheela Gupta and Medico Legal implications and medico legal cases reported related to Anaemia By Dr. Shakuntla Kumar. It was a successful event which was well attended by 45- 50 Gynaecologists.


MAX Healthcare
25
Max Institute of Cancer Care,
Max Super Speciality Hospital, Saket
in association with
AOGD and FOGSI Oncology Committee
cordially invites you to the Masterclass Series on
Cancer Endometrium
SAVE THE DATE
Sunday, 24th May 2026
10.00 am onwards
Sheraton New Delhi Hotel
Saket District Centre, Sector - 6, Saket, New Delhi
Organising Committee:
Dr Kanika Batra Modi
Director & Clinical Lead - Gynaecologic Oncology
Max Super Speciality Hospital, Saket
Dr Bindiya Gupta
Prof Obs & Gynae - UCMS & GTB Hospital
Chairperson - AOGD Oncology Committee
Dr Saritha Shamsunder
Prof & Head - Gynae-Oncology - VMMC & SJH
Chairperson - FOGSI Oncology Committee
Max Super Speciality Hospital, Saket
1-2, Press Enclave Road, Saket, New Delhi-110017
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www.maxhealthcare.in

Association of Obstetricians & Gynaecologists of Delhi

MEMBERSHIP FORM

Name:.....

Surname: .....

Qualification (year): .....

Postal Address: .....

City:..... **State:** ..... **Pin code:** .....

PHOTO

Place of Working: .....

Residence Ph. No. ..... **Clinical / Hospital Ph. No.** .....

Mobile No:..... **Email:** .....

Gender: Male:..... **Female:**.....

Date of Birth: Date.....**Month** ..... **Year**.....

Member of Any Society:.....

Proposed by .....

Cheque/DD / No: .....

Cheque/Demand Draft should be drawn in favour of**: Association of Obstetricians and Gynaecologists of Delhi**

FOR ONLINE TRANSFER THROUGH NEFT/RTGS

Name of Account: Association of Obstetricians and Gynaecologists of Delhi
Account no: 5786412323
Name of Bank: Central Bank of India
Branch: LHMC & SSK Hospital
IFSC code: CBIN0283462
MICR code: 110016067

ASSOCIATION OF OBSTETR

12418708@cbin

BHIM UPI

For Life Membership	: Rs. 11,000 + Rs. 1,980 (18% GST applicable) = Rs. 12,980
For New Annual Membership*	: Rs. 2,000 + Rs. 360 (18% GST applicable) = Rs. 2,360
For Old Renewal Membership+	: Rs. 1,200 + Rs. 216 (18% GST applicable) = Rs. 1,416

Encl.: Attach Two Photocopies of All Degrees, DMC Certificate and Two Photographs (Self attested)

*** Annual Membership is for the calendar year January to December.**

*** In case of renewal, mention old membership number.**

Note: 18% GST will be applicable as FOGSI requires it.

Send Complete Membership Form Along With Cheque / DD and Photocopy of required documents to the secretariat.
For online transaction send scan copy of all documents with payment slip on given mail id

Secretariat
Department of Obstetrics and Gynaecology
Lady Hardinge Medical College & SSK Hospital, New Delhi-110001
Tel.: 011-23408297, (M): 9717392924 | Email Id: aogdlhmc2025@gmail.com

AOGD SECRETARIAT
Department of Obstetrics and Gynaecology
All India Institute of Medical Sciences, Ansari Nagar, New Delhi - 110029
Email Id: aogdbulletineditorial2026@gmail.com