



Intrapartum diagnosis of PAS disorder - a nightmare for an obstetrician

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Introduction

Placenta Accreta Spectrum Disorder (PAS-D) is a range of aberrant placental invasions; including Creta or adherenta, increta and percreta; which can be classified as total, partial, or focal. Historically ‘placenta accreta’, a histopathological term, was first described by Irving & Hertig in 1937. With the increasing trend of caesarean section globally, cases of PAS-D are being observed more than ever before. According to the UK Obstetrical Surveillance System (UKOSS), the incidence of PAS-D in women who have had a previous caesarean section as well as placenta previa is 1.7 – 577 per 10000. It is typically accompanied by significant haemorrhage, necessitating caesarean hysterectomy; which is why proper diagnosis has utmost importance for lowering maternal morbidity and mortality.

Case Report

At 37 weeks of pregnancy, a G3 P1+1 woman of 25 years presented with constant lower abdomen pain for one day that was unrelated to show, bleeding per vaginum, or haematuria. Her previous caesarean delivery (CD) was an emergency one due to failed induction with foetal distress. She didn’t notice any vaginal bleeding throughout her antenatal period. After meticulous examination, it revealed that her pulse rate was 110/minute and she was mildly anaemic. Scar tenderness was found during an abdominal examination, the uterus was contracted, and the foetal heart rate was 182 beats per minute. She was tentatively diagnosed with uterine scar rupture and a viable fetus with cephalic presentation.

A blood sample was sent for laboratory testing as an emergency, and the transfusion unit was notified. Then bedside 2D greyscale ultrasonography without a doppler facility was done that showed low lying placenta with few placental lacunae, loss of the hypoechoic retroplacental (clear) zone & scar dehiscence.

A multidisciplinary team (MDT) including an expert obstetrician, urologist, senior anaesthetist and the paediatrician was involved immediately. Extensive discussion was done with the patient and her partner regarding sonographic findings, potential complications and different management plans including the need for massive blood transfusion and caesarean hysterectomy & informed written consent was obtained for category 1 CD.

Intraoperative findings were dense adhesions with the posterior aspect of the anterior abdominal wall with the anterior wall of the uterus and bladder, a niche on the left lateral end of a previous uterine scar and multiple engorged vessels under the peritoneal reflection of lower uterine segment encroaching the urinary bladder wall. A neonate was delivered by transverse uterine incision avoiding the visible placental bed. Placenta was found covering the internal os and placental tissue was deeply adherent with myometrium, so it was diagnosed as a case of central placenta previa (type IV placenta previa), with placenta percreta. A Urologist separated the bladder from the uterine wall by dissecting and ligating the encroaching vessels after having the uterine artery clamped. Uncontrolled bleeding from placental bed bounded to take the decision of caesarean hysterectomy keeping placenta in situ. Finally, a total caesarean hysterectomy was done ensuring the proper blood transfusion and repair of the urinary bladder.

Her postoperative period was uneventful and was discharged on the 5th postoperative day.



Figure: 2D grey scale ultrasound features P=anterior placenta, H=foetal head, red arrow=loss of hypoechoic retroplacental (clear) zone, blue & green arrows=showing two placental lacuna

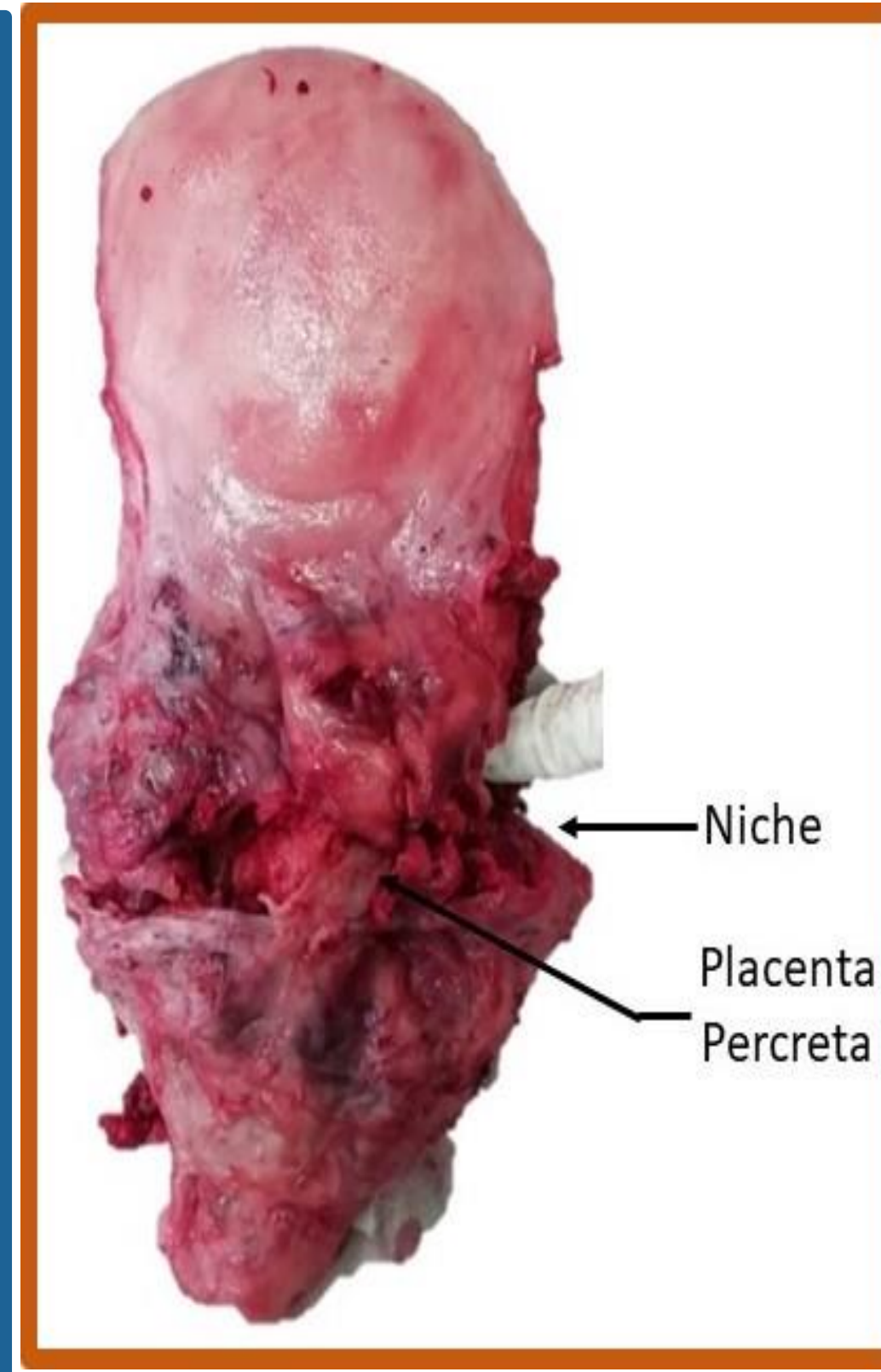


Figure: Resected uterus showing niche & placenta percreta

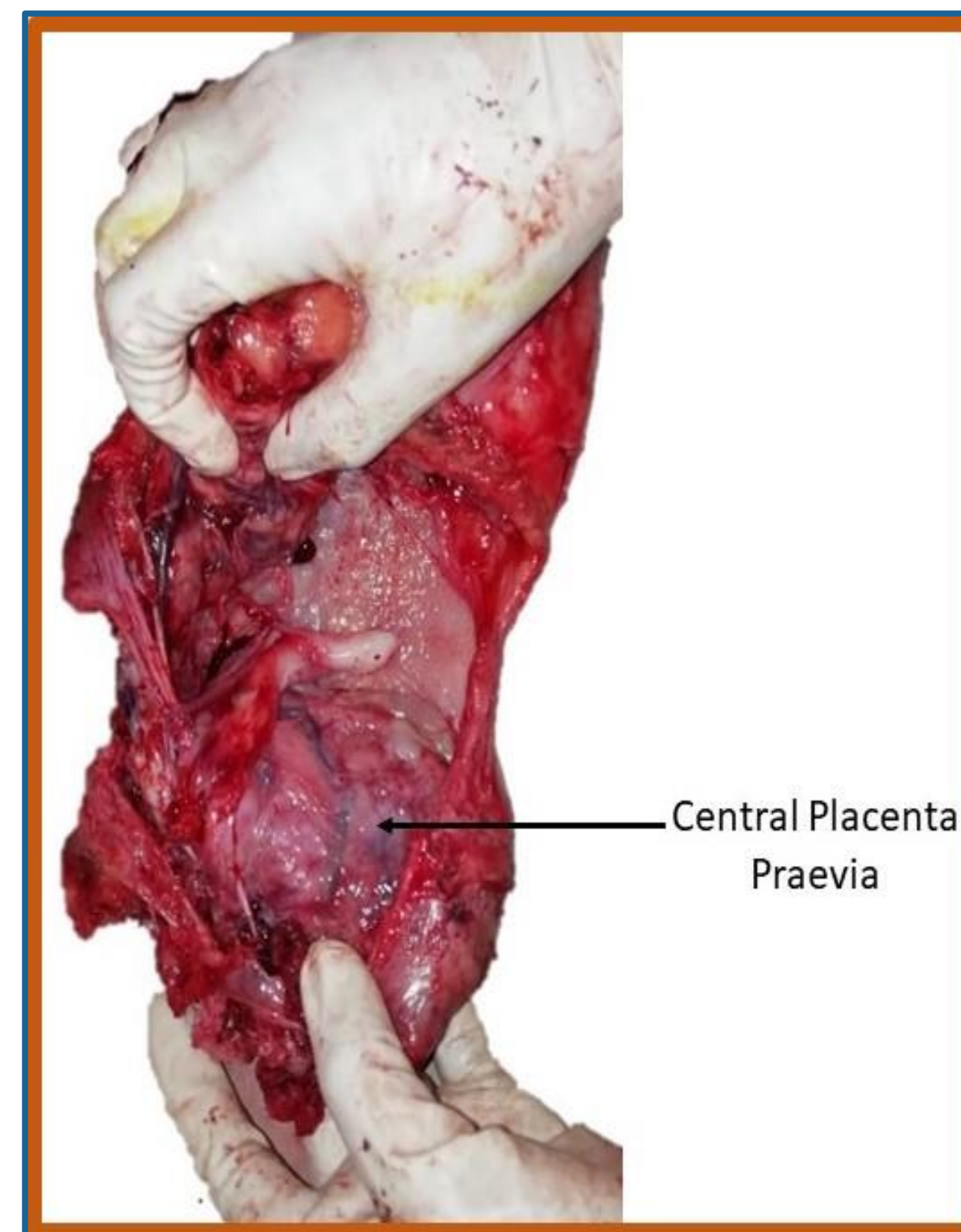


Figure: Placenta Praevia type IV (View after hysterectomy)

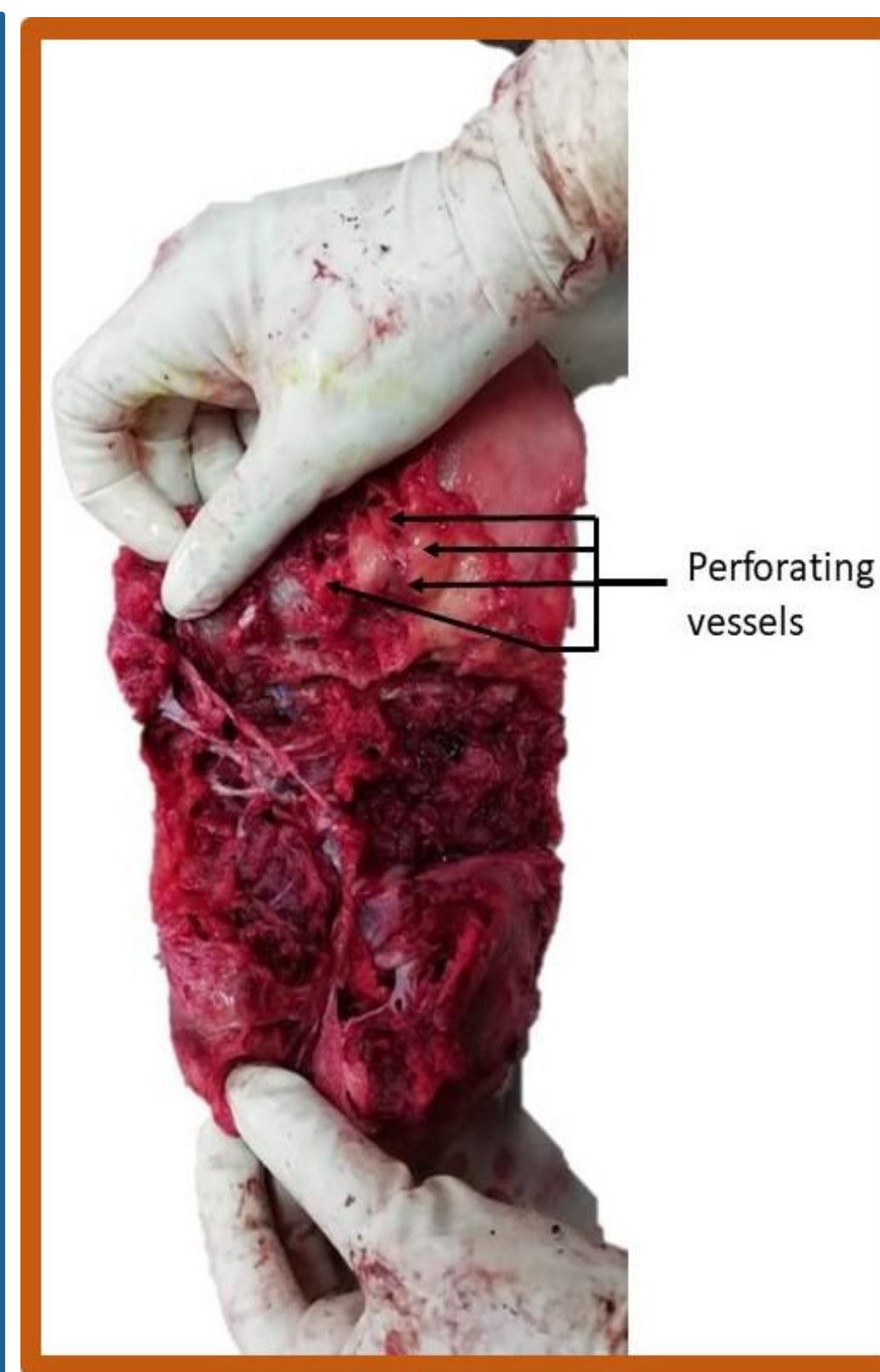


Figure: Perforating vessels encroaching the uterine wall to the urinary bladder

Discussion

PAS-D is the most dangerous obstetric haemorrhage in modern obstetric practice, and the incidence is alarmingly rising, owing primarily to an increase in the number of CDs. Furthermore, placenta praevia (PIP) increases the risk of developing PAS-D by 1 to 4%. Other risk factors for this fatal complication include myomectomy scar, endometritis, endometrial ablation, multiparity, an elderly mother, leiomyoma etc.

The diagnostic performance of ultrasound imaging in expert hands is high. Placental lacunae, Loss of hypoechoic space, Abnormalities of uterus–bladder interface and Color Doppler abnormalities are the four main reported sonographic findings of PAS-D with the specificity of 95.02%, 95.8%, 99.8% and 87.7% respectively. The most common reported ultrasound signs in placenta percreta were placental lacunae (82.4%) and subplacental hypervascularity (54.5%). Transvaginal sonography (TVS) is often recommended for better evaluation of the lower uterine segment, and the relationship of the placenta with the internal Os and the bladder interface. Using a linear transabdominal transducer with a frequency of 5–9 MHz and “walking” the uterine prior scar from one side to the other while keeping the transducer perpendicular to the uterine wall, keeping the bladder filled with approximately 200–300 mL of urine, ensuring light probe pressure and appropriate gain settings may increase the chances of detecting PAS-D. It is debatable whether MRI can significantly contribute to the prenatal diagnosis of PAS disorders. In the future, the use of safe contrast agents may improve MRI diagnostic performance.

Management of PAS-D needs a skilled surgical team with a special setup in the tertiary centre. Management depends on many factors including fertility desire of the patient, per operative bleeding, facilities available for follow up etc. The standard treatment of PIP is elective caesarean hysterectomy keeping the placenta in situ, especially in developing countries like ours as we are in lack of facility to follow up closely and advanced surgical techniques like uterine artery embolization, and cell salvage therapy. Conservative surgery (placental resection or keeping in situ followed by uterine and pelvic devascularization) needs close monitoring and may culminate in emergency interval hysterectomy despite bilateral uterine and internal iliac artery ligation because of neovascularization in uterine serosa- bladder interface as well as it has a higher risk of recurrence.

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Recommendations

- Every obstetrician should have a high index of suspicion for placenta praevia and the PAS-D in every case of a scarred uterus.
- To avoid massive complications, at least one doppler study should be performed antenatally in a woman with a scarred uterus to detect the dreadful PAS-D.
- Every obstetric unit should have an ultrasound machine, preferably a colour doppler.
- As a minimum, obstetricians should be trained in basic obstetric ultrasound, and it should be included in the curriculum.
- Standardized protocols should be used to describe the ultrasound signs observed for the diagnosis of PAS disorders.
- If the woman has had a previous CD, the placental implantation site should be carefully examined for PAS-D during the mid-trimester anomaly scan, especially if it is anterior, low lying, or praevia.
- In all cases where PIP or a low-lying placenta is present or suspected by transabdominal sonography (TAS), TVS is recommended, with an attempt to clearly define the placental location (including laterality), placental edge characteristics (including the presence of a marginal sinus or thickness), and associated findings (insertion of cord near the cervix, succenturiate lobe).
- Although MRI is not considered necessary for prenatal diagnosis of suspected PAS-D, it may be helpful in assessing the pelvic extension of a percreta or areas that are difficult to ascertain on ultrasou

Conclusion

Regular ANC, good clinical examination, including antepartum and intrapartum ultrasonography by a professional sonologist for placental mapping, and quick management can save a mother's life from potentially fatal PAS-D complications. Prenatal diagnosis of PAS-D is subjective regardless of the imaging modalities utilized, with accuracy reliant on the operator's experience, which has so far been limited by the condition's rarity.

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