

Placenta Accreta

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Section: Genital (female) imaging

Area of Interest: Obstetrics (Pregnancy / birth / postnatal period)

Procedure: Imaging sequences

Procedure: Diagnostic procedure

Imaging Technique: MR

Imaging Technique: Ultrasound-Colour Doppler

Special Focus: Obstetrics Case Type: Clinical Cases

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Patient: 29 years, female

Clinical History:

A 29-year-old pregnant female patient presented at our department for routine third trimester check-up. Her obstetric score was G3 P2 L2. Both of her children were born using caesarean section.

Imaging Findings:

Third trimester ultrasound scan showed that the placenta was situated in the lower segment of the uterus, covering the os completely. There was a focal area showing suspicious loss of retroplacental clear space where myometrium was not clear. Doppler demonstrated increased vascularity surrounding the myometrium. MRI confirmed type IV placenta praevia. There was a focal area of bulge along the anterior wall of lower uterine segment. The placenta showed heterointense signals T2 and FIESTA sequences. Few dark hypointense intraplacental bands were noted in T2 weighted images. The normal three-layered architecture of myometrium was interrupted at the posterolateral and anterolateral parts of the lower segment of the uterus on the left side. There was no frank invasion of the pelvic structures by the placental tissue.

Discussion:

Placenta accreta (PA) occurs when chorionic villi invades into the myometrium through a defect in the decidua basalis of the placenta [1]. Placenta accreta can be classified as placenta accreta vera, placenta increta and placenta percreta on the basis of the depth of invasion. In placenta accreta vera, chorionic villi is in contact with myometrium but does not invade it. Chorionic villi partially invades the myometrium in placenta increta; whereas in placenta percreta, chorionic villi penetrates through the entire myometrial thickness or beyond serosa [3]. PA is clinically important because it can result in torrential haemorrhage during placental separation. Hysterectomy is often required to save the life of the patient. Many a time, PA is identified only after the baby is delivered when difficulty arises in manual removal of the placenta or uncontrolled haemorrhage occurs after placental separation [1]. The most significant risk factors are low lying placenta and prior caesarean section. Other risk factors include maternal age of more than 35 years, multiparity, uterine anomalies and uterine scars. USG and MRI are the frequently used modalities for imaging. Any case of placenta praevia should be thoroughly examined for PA. Placental lacunae is the most predictive finding on USG [1]. Placental lacunae are indistinct, parallel, linear, vascular channels extending from the placental parenchyma into the myometrium creating a “moth-eaten” or “Swiss cheese” appearance and shows turbulent flow on Doppler. USG can also show loss of retroplacental clear space and thinning of myometrium (thickness < 1 mm). Doppler shows disruption of the normal

continuous retroplacental flow resulting in a gap at the site of placental invasion.

The most dependable findings on MRI were focal uterine bulge, heterointense placental signals and hypointense bands on T2 weighted images [2]. Direct invasion of pelvic structures by placenta is specific for PA. Other suggestive findings include focal interruptions in the three-layered architecture of the myometrial wall, disorganized abnormal placental vascularity, abnormal venous lakes (tortuous enlarged flow voids within the placenta measuring at least 6 mm in diameter), tenting of bladder wall and loss of the retroplacental T2 dark zone [2].

PA has to be taken up for surgery to prevent complications during third stage of labour. Definitive diagnosis is made by tissue analysis. The patient was taken up for caesarean section. Torrential haemorrhage ensued during placental separation. Hysterectomy was performed to salvage the patient. Histopathological examination of the biopsy specimen confirmed the diagnosis of placenta accreta vera.

Differential Diagnosis List: Placenta accreta vera, Placenta accreta vera, Placenta increta

Final Diagnosis: Placenta accreta vera

References:

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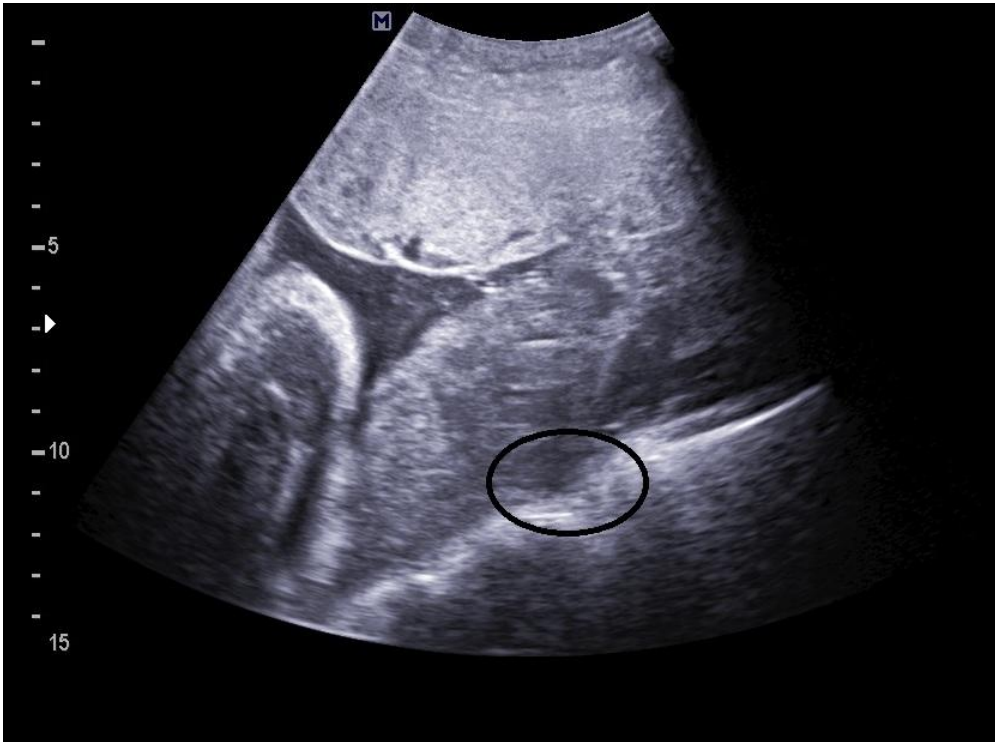
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Figure 1

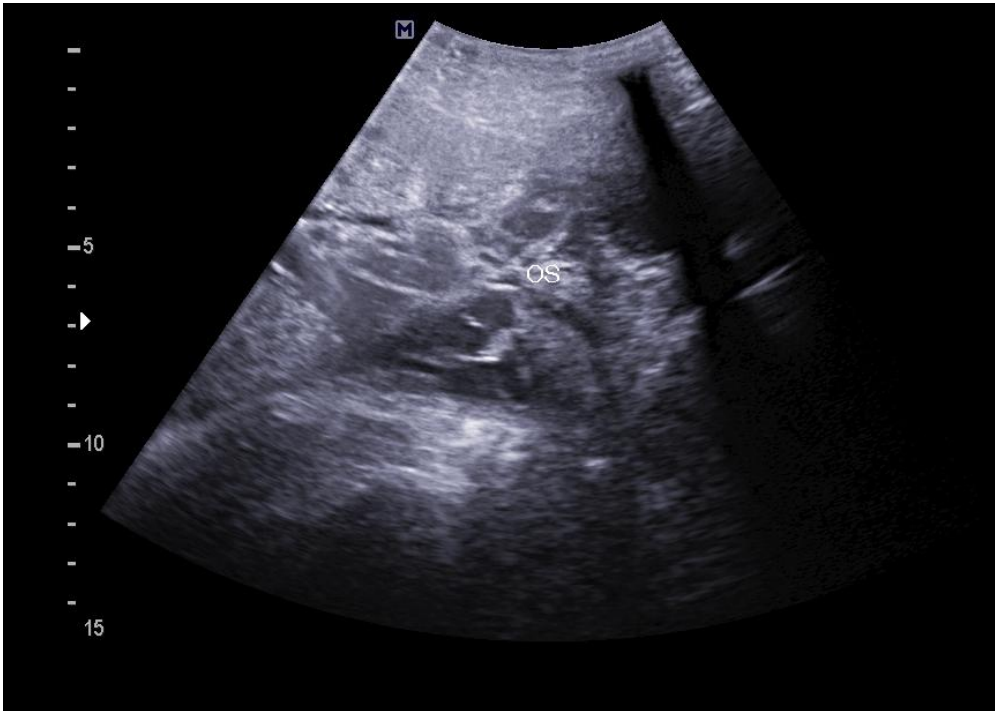
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Description: Loss of retroplacental clear space **Origin:** Govt Medical College Hospital, Kozhikode

Figure 2

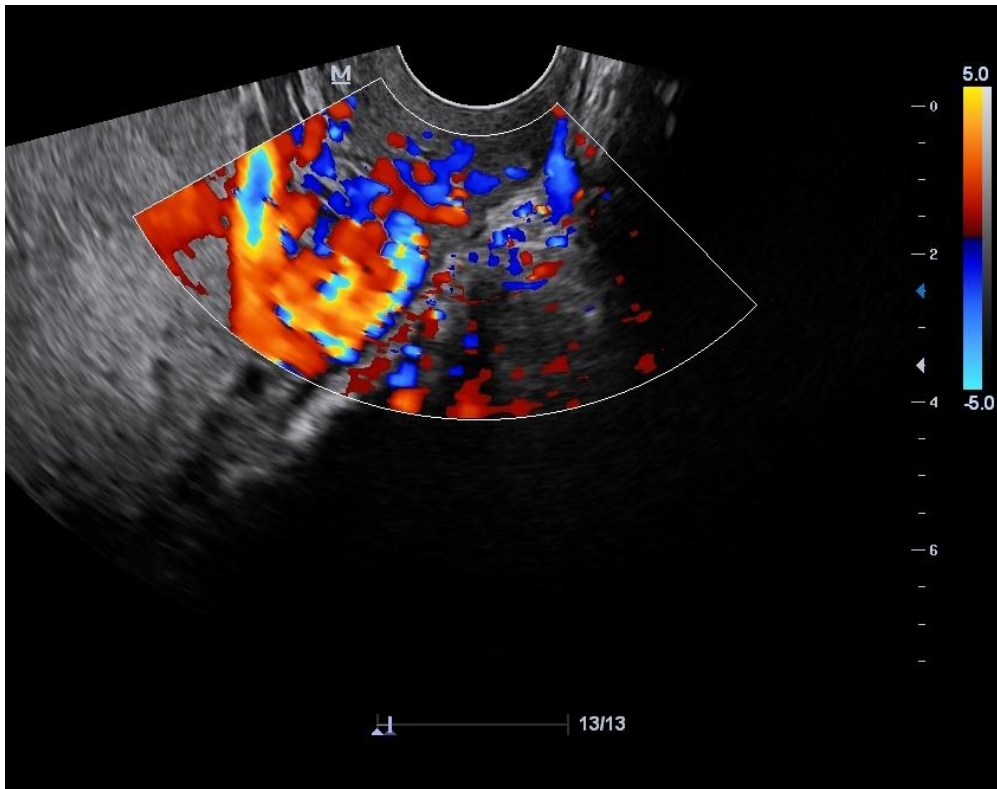
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Description: Grade IV placenta praevia **Origin:** Govt Medical College Hospital, Kozhikode

Figure 3

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Description: Increased vascularity around the uterus **Origin:** Govt Medical College Hospital, Kozhikode

Figure 4

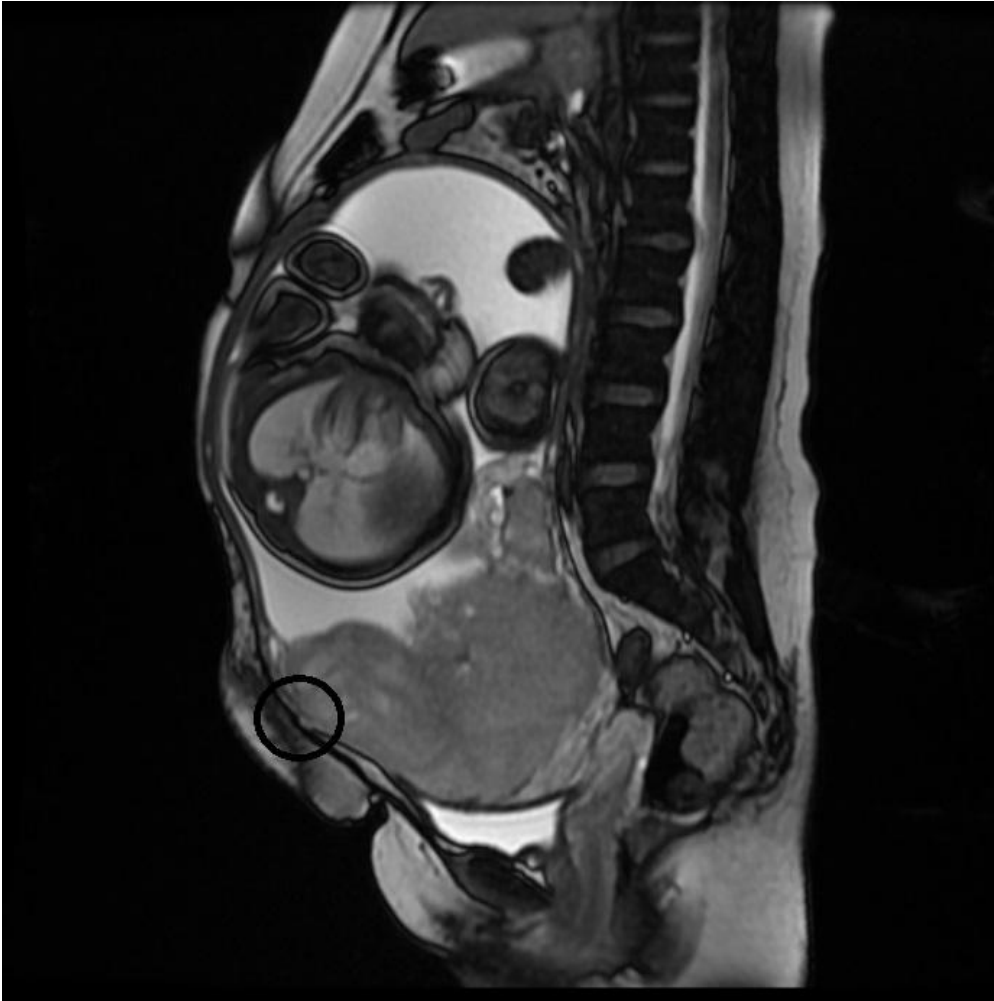
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Description: T2 weighted image showing hypointense bands **Origin:** Govt Medical College Hospital, Kozhikode

Figure 5

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Description: Loss of T2 hypointense margin of myometrium and focal uterine bulge at the same location **Origin:** Govt Medical College Hospital, Kozhikode