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Case Report

Challenges in conservative management of placenta increta with methotrexate in nulliparous woman

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ABSTRACT

Placenta increta is a severe complication of pregnancy normally diagnosed during the second trimester. Early detection could reduce the risk of hemorrhage during abortion or miscarriage; however, guidelines on first-trimester diagnosis are lacking. We describe a case of placenta increta during the second trimester with retained products of conception and its consequences followed by effective management with methotrexate.

Keywords: Second-trimester, Hemorrhage, Miscarriage, Placenta increta

INTRODUCTION

Placenta increta, a rare complication of pregnancy, is associated with significant hemorrhage often requiring emergency hysterectomy. A portion of the trophoblastic tissue that remains in the uterus after an abortion or a full-term vaginal delivery is referred to as "retained products of conception" that can have varied manifestations like persistent vaginal bleeding, acute abnormal uterine bleeding (AUB), abdominal pain, chronic pelvic pain, pyometra, hematometra, sepsis, shock, and in long term may lead to subfertility and secondary amenorrhea. It is estimated to complicate approximately 1% of term pregnancies.[1]

Various medical and surgical methods have been employed in the treatment of retained products of conception (RPOC). Amongst the surgical methods, the universally accepted technique is simple dilatation and curettage. However, it is estimated that nearly 20% of RPOC's have increased vascularity and in such cases simple dilatation and curettage (D and C) may lead to massive haemorrhage.[2]

Various causes of increased vascularity of RPOC' include. 1. Arteriovenous malformations, 2. Placental polyp 3. Excessive myometrial invasion by the trophoblasts. Due to extensive trophoblastic invasion of myometrium, the physiological myometrial arteriovenous shunting in the placental bed persists, leading to prominent vascularity.

We report a case of 22 years lady who had recurrent bleeding after dilatation and curettage with hypovolemic shock following termination of pregnancy, diagnosed as placenta increta with retained products of conception and managed in different wayswith a combination of parenteral methotrexate, serial ultrasound and β-hCGassessment. With newer diagnostic modalities like ultrasound and MRI early detection of placenta increta is possible and it aids in conservative management, especially in nulliparous women for future fertility.

CASE REPORT

Mrs. X, 22 years lady post termination of pregnancy was received in emergency department with complaints of recurrent episodes of bleeding PV with hypovolemic shock for further management.

Past obstetric history: She conceived spontaneously, booked and was on regular antenatal check up at Nellore. At 15 weeks of gestation, patient had leaking pervaginum,

scan showed oligohydramnios and was treated conservatively. At 16 weeks of gestation scan showed intra uterine fetal demise, hence medical termination of termination was done. In view of retained products of conception with bleeding per vaginum, dilatation and curettage done.

Two weeks later patient presented with complaints of profuse bleeding per vaginum with hypovolemic shock and was managed with blood transfusion and gentle curettage.

Clots evacuated. She had recurrent bleeding 2 weeks later and was managed with antifibrinolytics and referred to our centre. No histopathology reports reports available.

She was managed with Antibiotics, vitals stabilized. Ultrasound of pelvis showed endometrial cavity of 4.1cm with mixed echogenic areas with increased vascularity detected in the cavity. Serum beta HCG of 65 mIU.

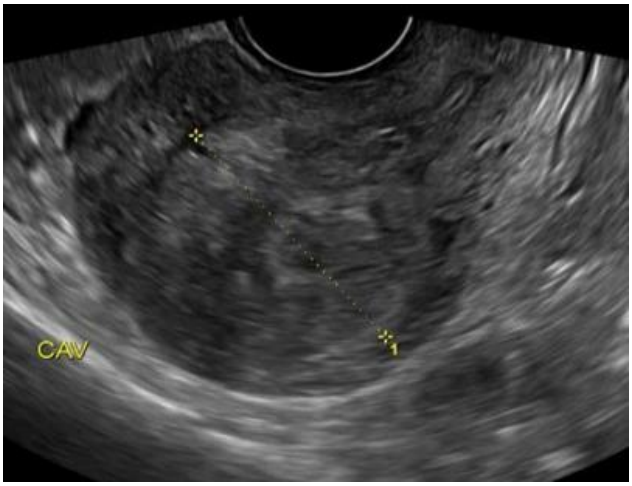

Figure 1: Mixed echogenic area with endometrial thickness of 4.1 cm.

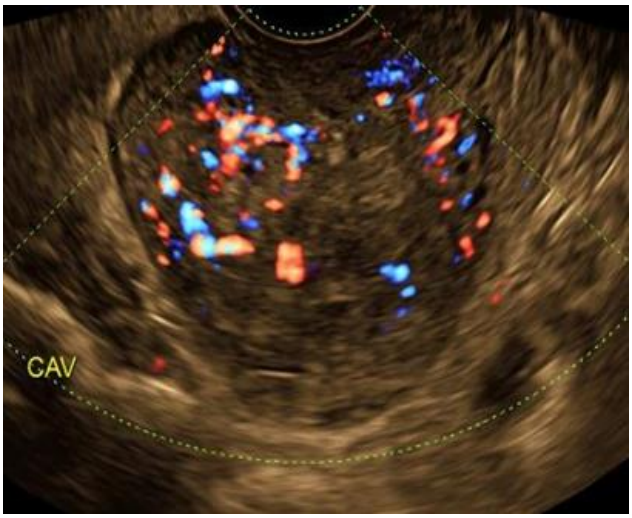

Figure 2: Increased vascularity noted in the retained products of conception.

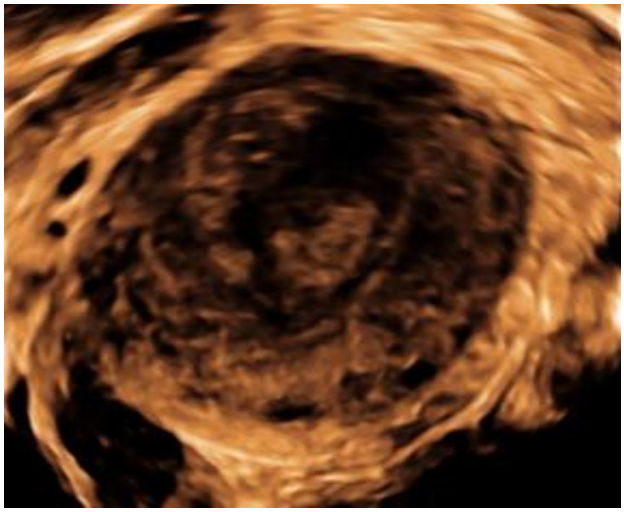

Figure 3: 3D ultrasound.

MRI pelvis: Bulky uterus with retained products, defect in endomyometrial junction with burrowing of endometrial tissue suggestive of placenta increta.

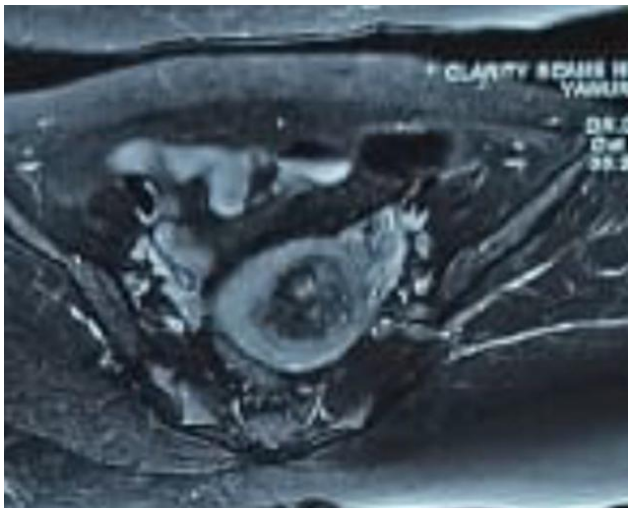

Figure 4: Retained products with defect in endomyometrial junction.

Planned D and C in a hybrid setup OT with uterine artery embolization facility ready. Ultrasound guided D and C done-fleshy tissue removed which was adherent to anterior myometrium. Gentle curettage done 50% retained products removed and products sent for HPE. On further curettage bleeding was heavy hence uterine tamponade done with 22Fr Foley's. Uterine tamponade gradually released after 24 hours. Bleeding per vaginum subsided. HPE suggestive of retained products of conception, no arteriovenous malformation (AVM)/no gestational trophoplastic neoplasia (GTN).

In view of conserving her fertility the conservative treatment option of Inj. Methotrexate 50mg given. After 48 hours, she was discharged with no bleeding. Patient reviewed 2 weeks post procedure -She was asymptomatic.

USG done-ET 2.7 cm (Figure 5), mixed echogenic areas seen in the cavity with minimal vascularity- suggestive of RPOC. Both ovaries normal. Products regressed to 10-20% and follow-up beta HCG-2 mIU in decreasing trend, hence was advised monthly follow up.

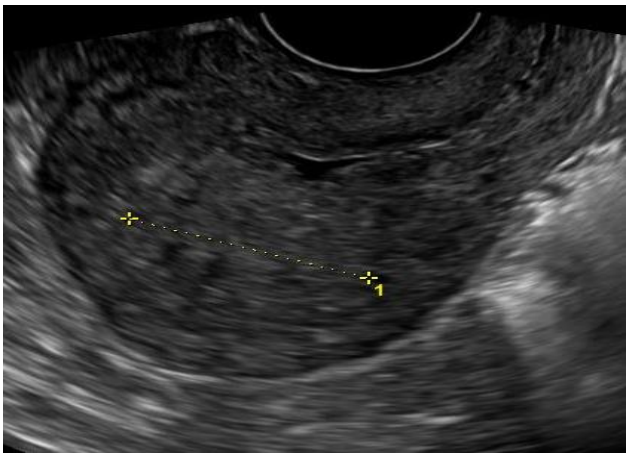

Figure 5: Thickened endometrium of 2.7 cm.

Patient reviewed after 1 month. There was no complaints of bleeding pervaginum, resumed her cycles after 1 month with normal flow lasting for 3 days requiring 3 pads/day. Beta HCG-0.2 mIU. USG screening done (Figure 6 and 7).

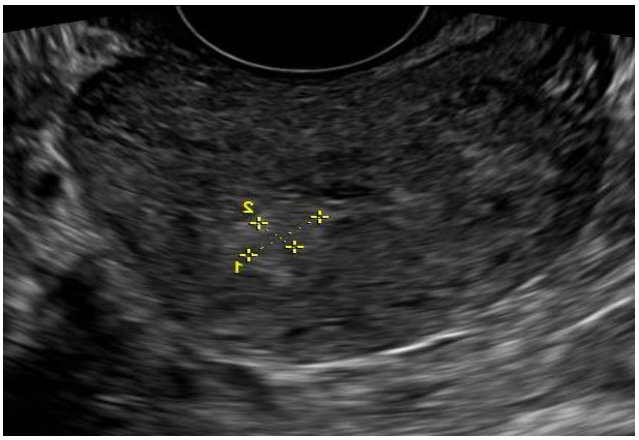

Figure 6: Retained products 1×1 cm.

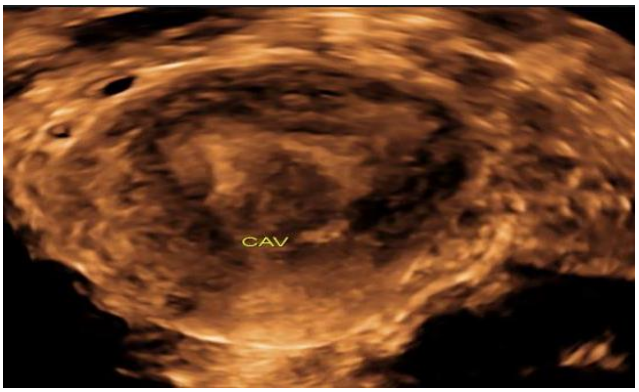

Figure 7: 3D ultrasound.

Follow up

On 3 month follow up patient came for check-up regularly until beta hCG was normal and resumed her cycles with no dysmenorrhea. She has been advised for barrier contraception and to plan pregnancy after one year. She has been counselled for tertiary care management and vigilant follow-up for placenta accreta spectrum disorders once she conceives again.

DISCUSSION

This was a challenging case as the patient had recurrent episodes of profuse bleeding and was managed at multiple facilities. In view of conserving fertility, we initially approached in a conservative manner, and she was taken up for Dilatation and curettage to obtain sampling for histopathology under ultrasound guidance and with backup of our interventional radiology team.

During dilatation and curettage only 40-50% of retained products removed hence to preserve the fertility, patient and attendant counselled for parenteral methotrexate therapy, risk and complication explained in detail. Inj. methotrexate 50 mg 2 doses intramuscular given with serial monitoring of Beta hCG till undetectable levels and regular follow up of ultrasound doppler for retained products size measurement. Hence, we could save her from an emergency hysterectomy and avoided embolization procedure.

The international federation of gynecology and obstetrics (FIGO) placenta accreta spectrum disorders diagnosis and management expert consensus panel created a classification system that describes PAS as follows:[3] Grade 1-Abnormally adherent placenta: placenta adherent or accreta, grade 2-Abnormally invasive placenta: increta, grade 3-Abnormally invasive placenta: percreta, subtype 3a-limited to the uterine serosa and subtype 3b-urinary bladder invasion.

This system also includes clinical and histologic criteria for each grade and subtype.

The marked increase in PAS, which began in the 1980s and 1990s and has been observed worldwide, is attributed to the increasing prevalence of cesarean delivery in recent decades.[4]

Placenta accreta is much more common than placenta increta and percreta. The incidence of Abnormal placentation were: Placenta accreta-63%, placenta increta-15% and placenta percreta-22%.[3]

The pathogenesis of PAS is not known with certainty, but increasing data support the roles of uterine remodeling during postoperative scar formation (primarily cesarean birth) and preexisting uterine pathology (e.g., rupture, dehiscence, adhesions).[5-7] In this model of Jauniaux et al absence of re-epithelialization to the endometrium, failure

of normal decidualization and loss of the normal sub-decidual myometrium (myofibers, spiral arteries, junctional zone between the endometrium and superficial myometrium) and/or their replacement by scar tissue allows extra-villous trophoblast to migrate close to the uterine serosa and reach the large arterial branches (radial and/or arcuate arteries) of the uterine artery and contribute to their transformation.[8] High-volume high-velocity blood flow from the abnormally dilated deep arterial uterine circulation leads to formation of placental lacunae and progressive fibrinoid deposition between the tip of most anchoring villi and the underlying uterine wall and around all deeply implanted villi at the uteroplacental interface. These changes are associated with distortion of the Nitabuch membrane or stria and the loss of parts of the physiological site of detachment of the placenta from the uterine wall.

The 80% of patients with PAS have a history of previous cesarean delivery, curettage, and/or myomectomy.[9] In rare cases, uterine pathology, such as bicornuate uterus, adenomyosis, submucous fibroids, myotonic dystrophy, or effects of previous radiation therapy, may be associated with microscopic endometrial defects that interfere with normal biological endometrial functions and thereby allow abnormal placental attachment.[10] This may explain the rare occurrence of PAS in primigravid patients with no history of uterine surgery.

Placental lacunae (which appear as intra-placental sonolucent spaces) and disruption of the interface between the bladder wall-uterine serosa (i.e., bladder line) are the most reliable diagnostic sonographic findings. Color flow Doppler demonstrating turbulent ("chaotic") lacunar flow and/or bridging vessels is a valuable confirmatory finding. If the ultrasound studies are inconclusive or ambiguous (e.g., when the region of concern is not the anterior lower uterine segment, such as after myomectomy, magnetic resonance imaging (MRI) may be performed to clarify the diagnosis if this will affect patient management; however, the utility of the additional information gained by MRI is uncertain.[11]

Magnetic resonance imaging (MRI): MRI may be more useful than ultrasound in three clinical scenarios: (1) evaluation of a possible posterior PAS because the bladder cannot be used to help clarify the placental-myometrial interface; (2) assessment of the depth of myometrial and parametrial involvement and, if the placenta is anterior, bladder involvement; and (3) evaluation of the myometrium and placenta at the most lateral portions of the hysterotomy as this area is not well visualized by transvaginal ultrasound, which images the central portion of the myometrium and placenta.[12,13] However, increased accuracy beyond that noted with ultrasound is unproven.[14]

CONCLUSION

Timely intervention and conservative medical management with methotrexate saved the patient from hysterectomy. Role of ultrasound with colour doppler played a key role in diagnosis and follow up. Early diagnosis is important because patient can be adequately counseled with regard to treatment options and their possible consequences. Aim of this case report is to give message to practicing obstetrician that conservative medical management of morbidly adherent retained placenta may be considered in selected cases.

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