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Retained Non-Previa Placenta Increta After Vaginal Delivery Successfully Managed Using Minimally Invasive Approach

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Abstract:

Objective: To describe minimally invasive management in a case of Placenta accreta spectrum (PAS). PAS is a composite term used to describe abnormal placental implantation. A small proportion of the morbidly adherent placentas are placenta increta. Known risk factors for PAS include placenta previa, uterine scarring after surgery, most commonly cesarean section, but also others like myomectomy, dilatation & curettage and hysterotomy.

Material & Methods: We describe PAS in a young primigravida with no known risk factors, who underwent spontaneous vaginal delivery at term follwed by retained placenta at the uterine fundus. This was subsequently diagnosed to be placenta increta on MRI when it failed to deliver with significant traction. She was very keen for fertility preservation and motivated for follow-up.

Results: Minimally invasive conservative surgical management was offered after couselling. This was done as a two-stage procedure with complete resolution of placenta increta at 7 weeks post-partum, with no serious morbidity. Subsequent hysteroscopy to remove uterine calcifications revealed adhesions in the upper part of uterine cavity, which were also resected.

Conclusion: Fertility sparing approach to PAS can be executed in well equipped centres with proper surgical expertise.

Keywords: conservative management, fertility sparing surgery, hysteroscopic resection, placenta accreta spectrum, retained placenta increta

Introduction:

Placenta Accreta Spectrum (PAS) is a composite term used to describe abnormal placental implantation and adherence to uterine myometrium[1]. Its incidence is reported to be approximately 1:553 deliveries[2] but can be anywhere from 1:300-1:2000[1]. PAS includes placenta accreta (75%), increta (18%) & percreta (7%) according to depth of placental ingrowth into uterine myometrium[3]. Management can range from from conservative methods (which avoid hysterectomy) to emergency/elective peripartum hysterectomy depending on blood loss & hemodynamic stability of the patient. Overall, PAS are associated with a high mortality rate of 6% due to massive obstetrical haemorrhage & related problems[4]. Several risk factors have been identified which include placenta previa with previous cesarean, uterine scarring (due to myomectomy, hysterotomy & D&C), advanced maternal age, smoking & IVF[5]. There is anecdotal evidence from case reports of prior uterine ablation, uterine fibroid embolization, congenital uterine anomalies being associated with PAS [6]. We describe PAS in a young primigravida with none of these risk factors, who underwent spontaneous vaginal delivery at term follwed by retained placenta in the

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uterine fundus which was subsequently diagnosed to be placenta increta. This was successfully managed using minimal invasive techniques which also helped to reveal the underlying risk factor.

Case report:

Mrs A, a 29 years old lady was under evaluation for infertility and with ovulation induction. Prior to conception her hysterosalpingogram had been normal with no suspicion of any uterine anomaly. As a primigravida she was booked throughout pregnancy had an uneventful antenatal period.There was nothing to suggest PAS on routine antenatal scans. She underwent vacuum assisted vaginal delivery after spontaneous labor at term, however the placenta could not be delivered despite significant traction. Manual removal of placenta was attempted in theatre under general anesthesia but the bulk of placenta was stuck high up at the uterine fundus and could not be accessed from below as the cord disrupted after traction. Since this was unusual, an intra-operative ultrasound was ordered which showed a multilobulated lesion 10x8cm on right postero-lateral uterine wall covered with thin myometrium, and high vascularity, s/o adherent placenta. As the patient was stable with no active bleeding decision was made to leave the placenta in situ. Inj. Methotrexate 60 mg i.m. was given post-operatively, followed by a 2nd dose after 48 hours. MRI was ordered on Day 3 after delivery which showed heterogeneous mass lesion in the fundus of uterus on the right side, measuring approximately 11.5 x 8.5 cm. This was highly vascular and infiltrating into myometrium and communicating in the endometrial cavity, likely retained placenta increta (Fig1). Beta-hCG was done on Day 3, 5 & 7 after delivery.

Patient was discharged home on Day 6 after delivery with strict follow up advice. She was on outpatient follow-up over the next 2 weeks wherein the uterine size was noted to be regressing from 24 weeks to 16 weeks. Serial beta-hCG monitoring was done which also showed a declining trend (Fig2). She was symptomatic of pinkish discharge during this time, but with no pain abdomen, fever or heavy vaginal bleeding. Vaginal swab cultures were done periodically and were negative for infection. Ultrasound was repeated on Day 21 after delivery which showed a large heteroechoic lesion with focal areas of calcification seen within the endometrial cavity in the fundus towards the right side measuring approximately 10.7 x 7.5 x 9.7cm (414 cc). The fundal myometrium was thinned out anteriorly and posteriorly. Few vascular flows were seen within the lesion showing low resistance, likely representing retained placenta with placenta increta. As the vascularity had begun to decrease, she was planned for hysteroscopic resection of retained placenta increta under laparoscopic guidance after thorough counseling regarding the pros and cons of management plan and possible need for two-stage procedure in view of the large placental mass. Consent for hysterectomy in-absentia was taken. This procedure was carried out a week later on Day 28 after delivery. On laproscopy, the uterus was seen to have a right horn sacculation ~ 10 x 12 cm with thinned out myometrium and dilated vessels on the surface. The left part of uterine body was involuting normally and bilateral adnexa was normal. Under laproscopic guidance about 50% of the retained placenta increta in the right sacculation of uterus was removed with a bipolar resectoscope. Post-operative ultrasound scan showed mass volume reduced had reduced from 414cc to 269cc (Fig 3a). She needed 3 units of transfusion after this procedure due to low hemoglobin (6.3g%). A third dose of Inj. Methotrexate 60 mg i.m. was also given post operatively. B-hCG after 48 hrs was 30mIU/mL and declined to negative after 1 week of the procedure (Day 36 after delivery). She was kept on outpatient follow-up.

During the next three weeks, she had pinkish discharge but vaginal cultures were negative. She developed low grade fever due to a urinary tract infection which was treated. She was planned for the second stage of procedure which was ultrasound guided hysteroscopic removal of retained placenta increta on Day 48 after delivery. Intra-operative scanning showed two separate chunks of placenta in the cavity (~ 5 x 6 cm at the fundus, and ~ 4 x 5 cm in lower uterine segment).

Both were removed using suction evacuation under USG guidance. (Fig3b). Check hysteroscopy showed the endometrial cavity to be intact but having gritty calcifications. The placenta tissue retrieved also had necrotic bits with calcification, though culture was sterile. She made unevenful recovery. Ultrasound scan done after 2 months of procedure showed normal uterine size with posterior myometrium calcifications, with no significant vascularity (Fig3c). Hysteroscopy done at 4 months post partum to remove these calcifications, also revealed adhesions in the upper part of uterine cavity, which were also resected simultaneously. Histopathology revealed degenerated placental bits with calcification and she made uneventful recovery.

Fig. 1: MRI on Day 3 after delivery

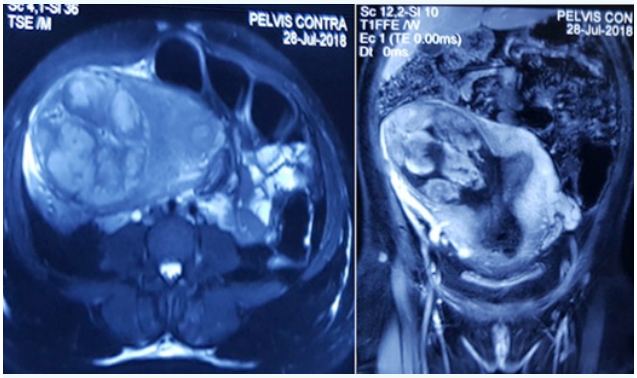

Fig. 2 : Trend of beta-hCG after delivery (methotrexate was given on Day1, 3 & 28 after delivery)

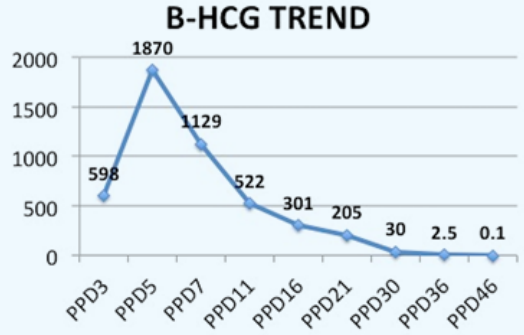

Fig. 3a: USG on Day 29 after delivery (after hysteroscopic resection)

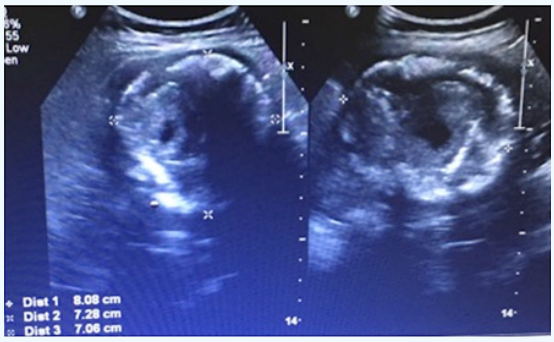

Fig. 3b: USG on Day 29 after delivery (after hysteroscopic resection)

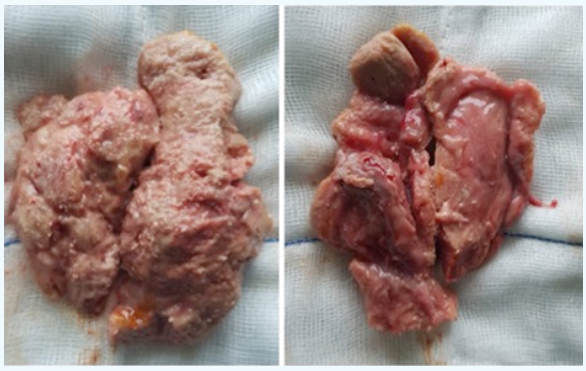

Fig. 3c: USG on Day 99 (2 months after complete removal)

Discussion:

PAS is an obstetric nightmare that is associated with significant morbidity & mortality. In cases of diagnosed PAS prior to delivery, peripartum cesarean hysterectomy leaving the placenta in situ is considered the gold standard for management[1]. In undiagnosed

PAS, management depends on two main factors – hemodynamic stability & amount of bleeding. In our case, the patient was hemodynamically stable with no active bleeding, as the placenta had not separated. She was very keen for fertility preservation and since it was a vaginal delivery with no scar on the uterus, decision was taken for conservative management. Conservative management has the advantages of avoiding the morbidity & mortality of peripartum hysterectomy (hemorrhage, blood transfusion, ICU stay, bladder & bowel injury, sepsis) and preserving fertility. The cord is ligated close to its insertion into the placenta and uterine incision closed if it is a cesarean delivery. Prophylactic antibiotics are administered and patient kept in hospital for 5-7 days. This is the risk period for maximum bleeding and infection. After leaving PAS in-situ, significant decrease of blood flow occurs over time and the placenta progressively detaches from uterus by avascular necrosis[7]. During this time, risks of intrauterine infection, placental abscess, sepsis, and unpredictable massive hemorrhage exist, hence the need for long-term monitoring, until complete resorption of placenta. Monitoring involves review of patient symptoms – pelvic pain, fever, foul-smelling discharge and heavy bleeding at least weekly or on as needed basis. Patients are counseled regarding persistent pinkish discharge. At clinical review involution of uterus, temperature, bleeding and signs of infection are assessed, along with lab parameters like total leukocyte count, C-reactive protein and vaginal swab culture and a pelvic ultrasound if required.

Regarding the role of methotrexate in hastening placental resorption, use is mainly guided by case reports and small case series, with some showing benefit and some not[8]. Its use therefore is to be defined on case-to-case basis and with thorough counseling as the potential for serious marrow toxicity can be life threatening. We opted for methotrexate after noting positive response in two previous cases of adherent pregnancy tissue (Mittal S, 2018, unpublished data). There are no standard regimens or dosing described in literature.

Although we monitored beta-hCG in the post partum period, till it became negative (at 5 weeks), there is scant data to indicate its usefulness. In most studies, the levels do not correlate with the volume of residual placental mass; neither does the rate of decline with rate of involution[9].

A French multicenter retrospective study[10] on maternal outcomes after conservative treatment reviewed 167 cases of PAS where placenta was left partially or totally in situ (59% & 41% respectively). Outcomes were favorable for uterine preservation in avoiding hysterectomy in 78.4% with about 6% severe maternal morbidity which included sepsis, septic shock, peritonitis, uterine necrosis, uterine rupture, fistula, acute pulmonary edema, acute renal failure, thromboembolism and maternal death. Placenta spontaneously and completely resorbed in 75% of cases after a median of 13.5 wks (range 4-60 wks). Hysteroscopic resection and/or curettage were performed to remove any remaining placenta in 25% with a median of 20 wks (range 2-45 wks).

Though spontaneous resorption of placenta may take up to a year [11], there is some data to indicate that hysteroscopic resection may shorten this interval, without harmful effects in women symptomatic for delayed bleeding or pelvic pain[12]. In a cohort of 23 women with PAS, about half underwent hysteroscopy under ultrasound guidance due to pain and/or bleeding with retained tissues, with no serious complications[13]. One or multiple procedures may be required. Its role & timing in asymptomatic women is undefined. Advantages of using hysteroscopic resection are continuous visualization during the procedure and reduced risk damage to normal endometrium & of adhesions[14], while concurrent laparoscopy or ultrasound helps to avoid inadvertent injury. Our patient was largely asymptomatic and compliant with follow-up but due to the large volume of placental tissue (>400cc), she was planned for multistage resection. Although it is increasingly being used in conservative management of placenta accreta, we could not find evidence in literature of hysteroscopic

resection having being used before in placenta increta, thus making this the first reported case.

Long-term fertility outcomes are favorable, although some women may suffer from Asherman's syndrome, infertility, abortions, preterm delivery and recurrent PAS[15]. This has to be part of patient counseling that although the uterus is saved, its functionality has to be under close surveillance.

With increasing incidence of PAS and desire to preserve fertility, the option of minimally invasive management of PAS becomes critical in patient management.

Conclusion:

This report highlights minimally invasive conservative surgical management in an unsuspected case of PAS with none of the described risk factors. In a two-stage procedure, the first being done 4 weeks and the second 7 weeks after delivery, the patient was successfully managed with preservation of her fertility.

This article also stresses on the importance of judicious patient selection when leaving the placenta in situ. Success depends on the triad of a conscious & willing patient, doctor experience and the hospital facilities. The patient should be thoroughly counseled, motivated and compliant for follow-up. Round the clock follow-up should be available in the center with trained staff and all the necessary equipment and infrastructure.

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Conflict of Interest: None

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