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Case report

Cornual type 3 retained products of conception – a fertility-sparing win with methotrexate

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ABSTRACT

Retained products of conception (RPOC) with marked vascularity represent a diagnostic and therapeutic challenge due to the high risk of hemorrhage associated with surgical evacuation. Cornual localization further complicates management because of minimal myometrial thickness and proximity to major vascular structures. Cornual ectopic pregnancies are broadly classified into interstitial, angular, and true cornual types, each differing in anatomical location and clinical implications. Advanced imaging and individualized management are crucial, particularly in women desiring future fertility. We report a case of a 34-year-old multiparous woman with prior cesarean section who presented with amenorrhea of 2 months following dilatation and curettage for a blighted ovum. The patient was examined and was vitally stable. Further investigations were done. Her ultrasound with color Doppler demonstrated a highly vascular lesion with high peak systolic velocity in uterine cornua, with thin myometrium and findings to be correlated with beta human chorionic gonadotropin (β-hCG) and magnetic resonance imaging (MRI) SOS. Her β-hCG was negligible. Magnetic resonance imaging revealed a well-defined hyperintense lesion in the right uterine cornua with beak-like communication with the endometrial cavity, consistent with hyper vascular cornual RPOC. The patient was hemodynamically stable and desirous of future fertility and was managed conservatively with multidose methotrexate therapy. Serial Doppler follow-up demonstrated progressive reduction in vascularity and lesion size, followed by spontaneous expulsion. This case represents a diagnostic conundrum, as the patient presented with persistent amenorrhea following curettage rather than the typical bleeding seen with retained products of conception. The key differential diagnoses include Asherman syndrome, retained products of conception, chronic endometritis, and persistent trophoblastic activity. This case also highlights the need for a high index of clinical suspicion in atypical presentations, with supportive investigations aiding in differentiating hypervascular RPOC from cornual ectopic pregnancy and uterine arteriovenous malformation. Conservative medical management with methotrexate can be a safe and fertility-preserving option in carefully selected patients.

Keywords: Retained products of conception, Cornual pregnancy, Hypervascular RPOC, Doppler ultrasound, MRI, Methotrexate

INTRODUCTION

Retained products of conception (RPOC) complicate approximately 1–5% of pregnancies and may occur following miscarriage, medical termination, or delivery.[1] Although dilatation and curettage (D and C) have traditionally been the standard treatment, the presence of increased vascularity significantly elevates the risk of massive haemorrhage and emergency hysterectomy.[2] Nearly 20% of RPOC demonstrate marked vascularity, rendering blind curettage potentially hazardous.[3] Cornual RPOC, although rare, are more likely to be encountered following medical abortion, incomplete abortion, or evacuation of cornual/interstitial pregnancy, where retained tissue may persist within the interstitial region.

Ultrasound with color Doppler is the first-line imaging modality for diagnosing RPOC. Demonstration of vascularity within an endometrial mass strongly supports the diagnosis, whereas avascular lesions are more likely to represent blood clots or decidual tissue.[4] However, hypervascular RPOC may closely mimic uterine arteriovenous malformations (AVM) or gestational trophoblastic disease (GTD), creating diagnostic uncertainty.[5] Peak systolic velocity (PSV) assessment on Doppler has been proposed as an objective tool to stratify hemorrhagic risk and guide management.[6]

Cornual ectopic pregnancy, accounting for 2–4% of ectopic pregnancies, involves implantation in the interstitial portion of the fallopian tube or a rudimentary uterine horn and carries a high risk of severe hemorrhage.[7] It is broadly classified into interstitial, angular, and rudimentary horn types, with important differences in clinical behavior and management.[8] Due to overlapping imaging features and hypervascularity, cornual ectopic pregnancy may closely resemble vascular RPOC, further complicating diagnosis.

The underlying pathophysiology of hypervascular RPOC involves persistence of retained chorionic villi, leading to ongoing trophoblastic invasion and angiogenesis, resulting in a hypervascular mass, often categorized as type III RPOC. Magnetic resonance imaging (MRI) plays an important problem-solving role in equivocal cases, particularly in lesions with atypical location or marked vascularity, by accurately delineating myometrial integrity and lesion extent.[9] Cornual RPOC are rare and pose unique challenges because of minimal surrounding myometrium and risk of uterine rupture.

We present a rare case of hypervascular cornual RPOC successfully managed with systemic multi-dose methotrexate therapy, supported by serial Doppler and MRI evaluation, and review the relevant literature.

CASE REPORT

A 34-year-old woman (P1L1A1) with a history of one previous lower-segment cesarean section presented with two months of amenorrhea after dilatation and curettage done for blighted ovum at 10+4 weeks of gestation. There were no immediate postoperative complications, and the patient was discharged the next day of procedure.

The patient then came to the outpatient department of LTMMC and LTMMH, Sion with a complaint for 2 months amenorrhoea after D and C. She was vitally stable. Her per abdomen examination was normal and on bimanual examination her uterus was 6 weeks with no bleeding per vaginum. The patient expressed a strong desire for future fertility.

Her blood investigations including complete blood count (CBC), liver function test (LFT) and renal function test (RFT) normal. Her serum beta human chorionic gonadotropin (β-hCG) measured 1.1 mIU/ml, and the urine pregnancy test was negative. Her transvaginal ultrasound revealed a bulky uterus with a mixed echogenic lesion measuring approximately 4.0×2.1 cm within the uterine cornu. Color Doppler demonstrated marked vascularity with a peak systolic velocity of 70 cm/s, suggestive of hypervascular RPOC. A hemorrhagic cyst was noted in the right ovary.

MRI of the pelvis demonstrated a well-defined lesion measuring 2.2×2.3×2.2 cm in the right uterine cornu, showing predominant T1 and T2 hyper-intense areas with internal flow voids. A thin rim of surrounding myometrium was seen, with minimum myometrial thickness measuring 4.8 mm posteriorly. The lesion exhibited a beak-like communication with the endometrial cavity, with intact serosal and myometrial continuity. Imaging features were consistent with type III hypervascular RPOC rather than cornual ectopic pregnancy or AVM.[7]

Since the patient was haemodynamically stable, with low β-hCG level, high Doppler vascularity, cornual location, and she had desire to preserve fertility, conservative medical management was done. The patient received multidose methotrexate therapy consisting of four doses to be administered on alternate days, with folinic acid rescue given on the following days. The last dose of methotrexate was withheld due to deranged LFT, and serial ultrasound monitoring was done.

Follow up with serial ultrasound and Doppler examinations demonstrated progressive reduction in vascularity and lesion size. Over two months, the lesion regressed significantly, with decreasing pulsatility and resistance indices. The patient subsequently reported spontaneous passage of tissue at home without bleeding or pain followed by normal resumption of normal menstrual cycle. Final ultrasound report confirmed no evidence of RPOC.

Sagittal T1-weighted fat-suppressed post-contrast MRI image of the pelvis demonstrating a focal enhancing lesion in the right cornual region of the uterine cavity, consistent with RPOC. The lesion is eccentrically located near the right uterine cornu and demonstrates heterogeneous enhancement suggestive of persistent vascular trophoblastic tissue. The surrounding myometrium appears mildly expanded without obvious transmural extension. The sagittal plane allows clear delineation of the lesion's relationship with the endometrial cavity and adjacent pelvic structures (Figure 1).

Coronal contrast-enhanced fat-suppressed T1-weighted MRI image of the pelvis demonstrating an enhancing heterogeneous lesion located in the right uterine cornu, corresponding to retained products of conception (RPOC). The lesion shows internal areas of enhancement suggestive of retained vascular trophoblastic tissue. The surrounding myometrium appears mildly stretched at the cornual

region, while the urinary bladder is visualized inferior and anterior to the uterus (Figure 2).

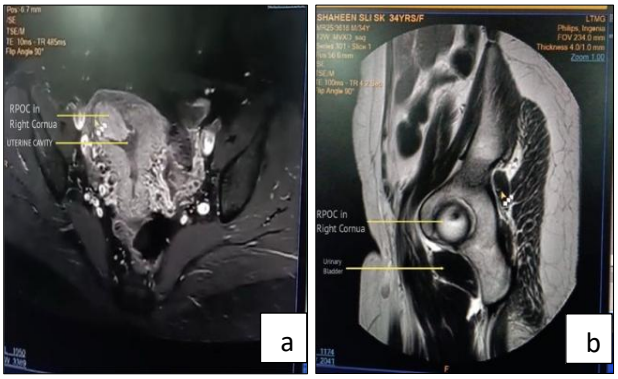

Figure 1 (a and b): Sagittal T1-weighted fat-suppressed post-contrast MRI image of the pelvis.

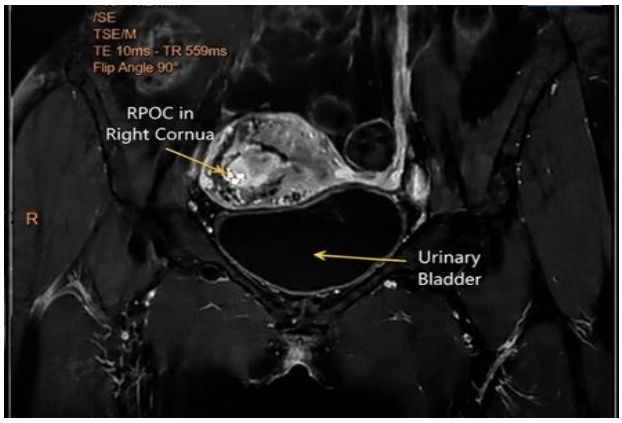

Figure 2: MRI image of the pelvis demonstrating an enhancing heterogeneous lesion.

DISCUSSION

Amenorrhea following uterine evacuation is an uncommon but clinically significant presentation that may create a diagnostic conundrum. In this case, the patient presented with persistent amenorrhea after check curettage rather than the more typical abnormal uterine bleeding associated with RPOC, leading to delayed recognition of the underlying pathology.

Post-curettage amenorrhea has multiple etiologies. The most common is Asherman syndrome, in which endometrial trauma causes fibrosis and impaired regeneration of the basal layer. Chronic endometrial inflammation due to retained trophoblastic or placental tissue may also disrupt normal endometrial proliferation and cyclic shedding, resulting in hypomenorrhea or amenorrhea rather than bleeding.

Persistent trophoblastic activity can further contribute through hormonal and angiogenic effects on the hypothalamic–pituitary–endometrial axis.

Other important differentials include endocrine disorders such as hyperprolactinemia and thyroid dysfunction, gestational trophoblastic disease, and structural causes like cervical stenosis. Accurate differentiation is essential because management varies significantly among these conditions.

Hypervascular RPOC forms an important subgroup in which conventional curettage may precipitate catastrophic hemorrhage.[3] Doppler ultrasound, particularly peak systolic velocity (PSV), is valuable in assessing vascularity and differentiating RPOC from blood clots.[4] However, elevated PSV may also occur in RPOC without true arteriovenous malformation, emphasizing the need for individualized management based on clinical stability rather than Doppler findings alone.[6] In the present case, a PSV of 70 cm/s suggested marked vascularity and supported avoidance of blind evacuation.

MRI is particularly useful in complex cases, demonstrating features such as enhancing intracavitary masses, flow voids, and myometrial thickness.[7] Dynamic contrast-enhanced MRI further helps distinguish hypervascular RPOC from arteriovenous malformation and gestational trophoblastic disease.[8] In our patient, MRI confirmed cornual RPOC and excluded serosal breach. Cornual ectopic pregnancy also remained an important differential because of its similar location and vascularity; however, absence of a separate gestational sac, interstitial line sign, and significant myometrial thinning favoured RPOC.[10]

Conservative management strategies are increasingly supported in selected patients. Methotraxate has shown benefit in hypervascular RPOC by inducing trophoblastic regression and reducing neovascularization.[3,10] This case highlights the importance of individualised management, careful imaging evaluation, and close follow-up in women with hypervascular cornual RPOC.

CONCLUSION

This case posed a diagnostic conundrum due to the unusual presentation of persistent amenorrhea following curettage, in contrast to the more typical manifestation of bleeding seen with retained products of conception. The differential diagnoses to be considered include Asherman's syndrome, RPOC, chronic endometritis, and persistent trophoblastic activity. Such atypical clinical scenarios necessitate a heightened level of suspicion, with adjunctive investigations assisting in distinguishing hypervascular RPOC from cornual ectopic pregnancy and uterine arteriovenous malformation. In appropriately selected cases, conservative management with methotrexate offers an effective and fertility-preserving therapeutic approach.

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REFERENCES

1. Abbasi S, Jamal A, Eslamian L, Marsousi V. Role of clinical and ultrasound findings in the diagnosis of retained products of conception. Ultrasound Obstet Gynecol. 2008;32:704-7.
2. Mahajan A, Gupta I, Mishra A. Hypervascular retained products of conception: dilemma of diagnosis and management. Int J Reprod Contracept Obstet Gynecol. 2019;8:4130-4.
3. Aseeja V. Management of retained products of conception with marked vascularity. J Turk Ger Gynecol Assoc. 2012;13:212-4.
4. Kamaya A, Petrovitch I, Chen B, Frederick CE, Jeffrey RB. Retained products of conception: spectrum of color Doppler findings. J Ultrasound Med. 2009;28(8):1031-41.
5. Müngen E. Vascular abnormalities of the uterus: have we recently over-diagnosed them? Ultrasound Obstet Gynecol. 2003;21:529-31.
6. Van den Bosch T, Van Schoubroeck D, Timmerman D. Maximum peak systolic velocity and management of highly vascularized retained products of conception. J Ultrasound Med. 2015;34:1005-10.
7. Noonan JB, Coakley FV, Qayyum A. MR imaging of retained products of conception. AJR Am J Roentgenol. 2003;181:435-39.
8. Vineetha P, Jaison J, Rajeswaran R. Role of dynamic contrast-enhanced MRI in diagnosing vascularized retained products of conception. Int J Sci Stud. 2024;12:1-5.
9. Tzur Y, Berkovitz-Shperling R, Inbar TG. Expectant vs medical management for retained products of conception after medical termination of pregnancy. Am J Obstet Gynecol. 2022;227:599.
10. Fujishima R, Kawasaki K, Moriuchi K, Shiro R, Yo Y, Matsumura N. Conservative Management for Retained Products of Conception in Late Pregnancy. Healthcare (Basel). 2023;11(2):168.

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