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Case Report

Placental polyp after normal vaginal delivery: a rare diagnostic dilemma

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ABSTRACT

Placental polyp is retained placental tissue within the endometrial cavity, which forms a nidus for inflammation and bleeding. Placental polyp is a rare entity with an incidence of less than 0.25% of all pregnancies as reported. Here, we report a case of 23-year-old P2L2 woman with complaints of intermittent vaginal bleeding since her recent normal vaginal delivery, 1.5 months back. A polypoid mass (51×41 mm) with abundant vascularity was detected as retained products of placenta (RPOC) within the endometrial cavity by imaging studies. A combination of polypoidal mass within the endometrial cavity with normal beta human chorionic gonadotropin (hCG) of <2.0 mIU/ml raising the suspicion of retained products of placenta or trophoblastic neoplasms. After yielding an unsatisfactory biopsy containing only fibrin deposition, total hysterectomy was performed due to profuse bleeding during biopsy. The uterus specimen showed slight globular enlargement with presence of a red-coloured polypoid mass within the endometrial cavity with rough outer surface and fragile consistency. The histological specimen of the protruding lesion, from the exaggerated placental implantation site, showed intermediate trophoblastic cells infiltrated into the myometrium, which might lead to the diagnosis of placental polyp. However, since placental polyp and uterine arteriovenous malformation have similar clinical characteristics, it is important to accurately identify and differentiate between them to ensure optimal treatment therapy. Definite diagnosis is ultimately made by histopathological examination. We report here a case that is suggestive of either a placental polyp or uterine arteriovenous malformation and will discuss the differential diagnoses and treatments for both diseases, based on a literature review.

Keywords: Normal vaginal delivery, Placental polyp, Uterine bleeding, Diagnostic dilemma, RPOC

INTRODUCTION

Placental polyp is a retained piece of the placental tissue that persistently exists in the uterine cavity after abortion or parturition.[1-3] Histologically, this fragment consists of organized villi and decidua, along with degenerated clots and regenerated endometrium. These components are firmly attached to the wall of the uterine cavity. The incidence of placental polypoidal mass is less than 0.25% of all pregnancies. Furthermore, only 6% of placental polypoidal masses are hyper vascular and is associated with severe hemorrhage.[4]

Arteriovenous malformation (AVM) an another entity, is an abnormal communication between arteries and veins, in which intervening capillaries are usually absent.[5] AVMs are broadly classified as congenital or acquired, and the former type-believed to be caused by abnormal embryological development of vasculature-is generally more difficult to treat. Acquired uterine AVM, however, is thought to be formed in the uterus as a result of trauma associated with vaginal delivery, cesarean section, curettage procedures, retained products of conception, gestational trophoblastic disease, choriocarcinoma, or other gynecological malignancies.[6]

Abnormally invasive placenta (AIP), also called placenta accreta spectrum disorder (PAS), describes the clinical situation in which a placenta does not separate spontaneously at delivery and cannot be removed without causing abnormal and potentially life-threatening bleeding.[7,8] However, even with the rising incidence LSCS, AIP is still rare (0.793.11 per 1000 births after prior cesarean).[9] Since trophoblastic neoplasms especially placental site trophoblastic tumor may have similar symptoms and signs, it is important to consider placental polyp as a differential diagnosis in such situations.

Both placental polyp and uterine AVM can induce life-threatening uterine bleeding. The differential diagnosis for both diseases is based on various clinical findings, laboratory data, including serum β-human chorionic gonadotropin (hCG) levels, and the radiological findings of transvaginal ultrasonography (TV-USG), power Doppler imaging, and computed tomography (CT) or magnetic resonance imaging (MRI) with contrast media. In some cases, a definitive diagnosis cannot be reached.[5] Uterine artery embolization (UAE) is a useful choice to stop active bleeding in the post-abortal or postpartum setting for placental polyp or uterine AVM.[10,11] However, hysteroscopic transcervical resection (TCR) is used for treating placental polyps without hypervascularity but not uterine AVM.[12] Conservative treatment is also used for both diseases in the absence of active bleeding such as methotrexate can be used to treat placental polyps, whereas hormonal compounds such as an estrogen/progestin mixture, danazol, and gonadotropin releasing hormone agonists are administered for uterine AVM.[3,13,14-16] However, the ultimate radical treatment is total abdominal hysterectomy (TAH) for placental polyp and uterine AVM in patients with excessive uterine bleeding. Therefore, it is very important to diagnose these disorders promptly and accurately and provide an appropriate medical intervention to the patient. Therefore, here we report a rare case of placental polyp and its treatment based on a literature.

CASE REPORT

A 23-year-old, P2L2 was referred to our hospital with abnormal uterine bleeding with severe anaemia since her last full term normal delivery, 1.5 months ago in a hospital in periphery. She complained of bleeding per vaginum with passage of clots not associated with abdominal pain. There was history of fever for 4 days not associated with chills and rigors. No history of any dysuria or burning micturation. No history of any antepartum, intrapartum or post-partum haemorrhage. No history of instrumental delivery.

She got her ultrasonography abdomen and pelvis done 15 days back at a peripheral health centre which revealed enlarged uterus with a 51×41 mm sized mixed echogenic haemorrhagic collection noted in the endometrial cavity with presence of vascularity, which appeared as retained products of conception (RPOC) (Figure 1). Bilateral adnexa were clear and there was no free fluid seen in the cul-de-sac. Hence, she underwent dilatation and evacuation at same hospital for RPOC after a month of delivery which yielded an unsatisfactory specimen containing only fibrin deposition further which she had the similar complaints of continuous abnormal uterine bleeding. Hence, the patient was referred to our hospital for further management.

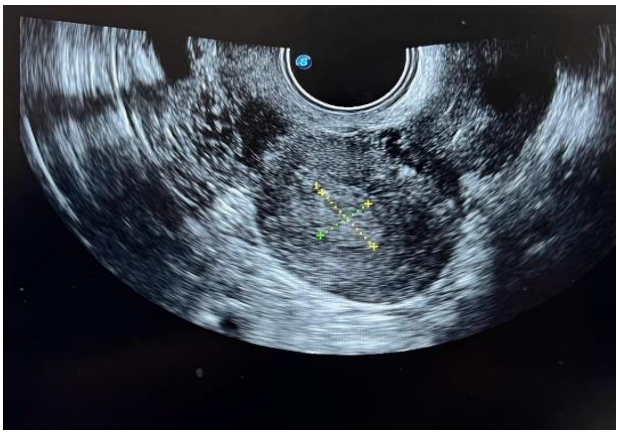

Figure 1: Transvaginal ultrasound showing mixed echogenic haemorrhagic collection in the uterus.

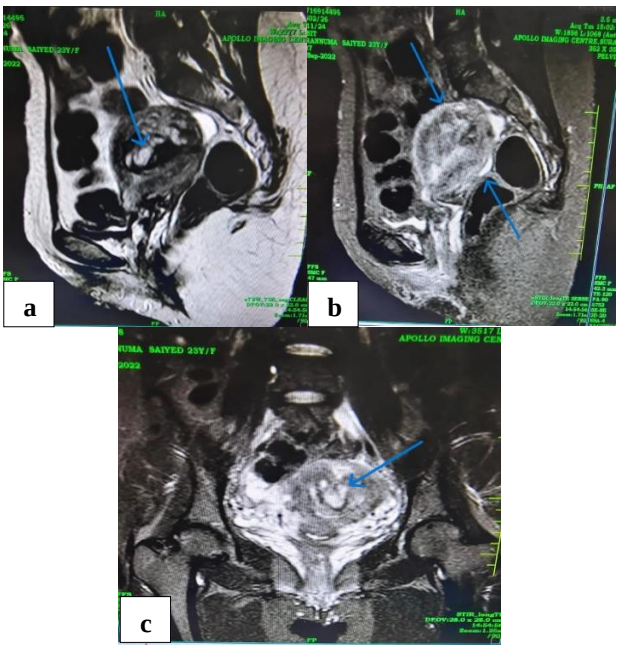

Figure 2: MRI images of 23 year old women who delivered 1.5 months back, (a) saggital section suggestive of heterogenous irregular solid cystic lesion of T1 iso to hypointense lesion with few hyperintensities indicating bloody fluid in uterine cavity, most clearly indicating placental polyp, (b) T2 hypointense with few hyperintensities than myometrium clearly differentiating heterogenous tissue from debris and bloody contents, and (c) STER hyperintense lesion with adherent heterogenous tissue to the myometrium.

Her lab reports revealed hemogram - 6 gm%, white blood count - 18,000 /cumm, platelets - 2.5 lakhs/cumm, PT (INR) – 15 (1.0), serum glutamate pyruvate transaminase (SGPT) – 14 U/l, serum creatinine – 0.7 mg/dl, urine routine and microscopy – normal. Serum beta-hCG level was <2.0 mIU/ml during her diagnostic investigations. Magnetic resonance imaging (MRI) finding was suggestive of bulky uterus with size 97×63×66 mm, with heterogenous echogenic structure of size 46×43 mm with internal cystic changes and haemorrhagic foci in the endometrial cavity. There was a disruption in the junctional zone in the anterior and fundal aspect with the invasion in the myometrium. Post contrast study showed intense enhancement of solid component of the lesion and showed FROND like appearance. No other focal mass was noted in the uterus and the cervix appeared to be normal. Clinical laboratory investigations and imaging findings raised the suspicion of gestational trophoblastic disease, probably an invasive mole (Figures 2 and 3).

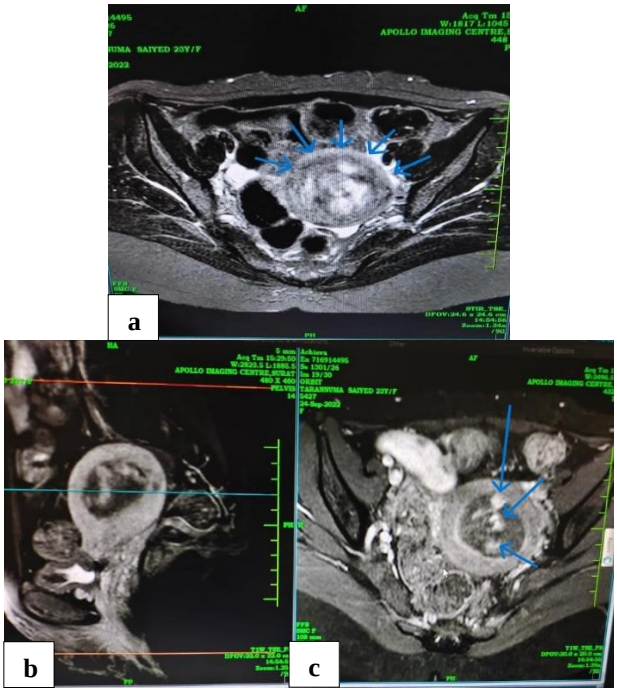

Figure 3: (a) and (b) MRI images of 23-year-old women who delivered 1.5 months back; coronal section suggestive of T2 weighted images showing hyperintensities in the uterine cavity. It shows heterogenous structure of size (46×43 mm) in endometrial cavity, adherent with the myometrium.

During hospital stay, patient was treated with injectable antibiotics and tranexamic acid. Four packs of red blood cells were transfused and the patient was observed for any fresh bleeding per vaginum. Considering a differential diagnosis of RPOC with invasive mole according to the MRI, the patient was explained a need for uterine artery embolization but she was not willing for the same. Hence, an ultrasound guided biopsy was planned under anaesthesia with a consent for hysterectomy if required. At first, an attempt was made to take biopsy from the tissue visible in the cavity, to prove the presence of trophoblastic tissue. But following an unsatisfactory removal of the retained product with a significant haemorrhage during the whole procedure, that was the uncommon feature in our case, the patient underwent total hysterectomy in view to save her life from torrential repeated haemorrhagic episodes.

Macroscopically, the uterus was cut and it showed a globular enlargement resulting the presence of polypoidal mass within the endometrial cavity. The polypoidal mass had a rough outer surface with fragile consistency. The cut surface was diffusely red with some fine streaks of grey-brown coloured tissue. It was attached to the uterine wall in the fundo-posterior region of the myometrium (Figure 4).

Figure 4: Cut section of uterus with globular polypoidal mass present, attached to posterior wall of uterus.

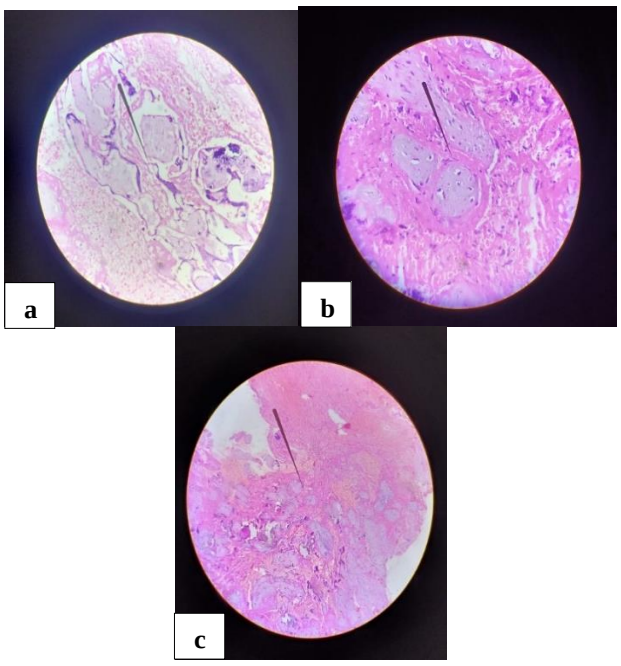

Figure 5: (a), (b) and (c) Histopathological diagnosis: shows features of ghost villi.

Microscopic study shows mainly ghost villi, with some of them lined by intermediate trophoblastic cells and few normal chorionic villi with myxoid degeneration and areas of haemorrhage seen. Fibrinoid necrotic material was seen directly attached to the myometrium along with mixed inflammatory infiltrate. Hyalinised blood vessels seen. No evidence of atypia seen. Histopathology report confirmed the diagnosis of placental polyp due to placenta accreta (Figure 5).

Final diagnosis of placental polyp due to placenta accreta was achieved depending upon the macroscopic and microscopic findings. Patient was discharged after 5 days post hysterectomy on supportive treatment including oral iron therapy. She had no active complaints after 1-month post-hysterectomy on follow-up.

DISCUSSION

The placental polyp is a rare entity and its estimated incidence is around 1 in 40,000-60,000 deliveries.[17] In 1884, Baer reported a case of placental polyp that occurred 12 years after the pregnancy and this entity has been recognized since then.[18] The clinical event could be life-threatening for the patient and sometimes may require an emergency hysterectomy. Profuse haemorrhage and hypovolemic shock are the most feared complications.[19]

Placental polyp is a fragment of retained placental tissuein the uterus that has undergone neovascularization after resolution of gestation. Most commonly, placental polyp occurs after therapeutic abortion and spontaneous delivery. It is extremely rare after spontaneous abortion. Abnormal vaginal bleeding after abortion or delivery may indicate the presence of placental polyp. The villi may be necrotic, hyalinized, or partially calcified. They form a nidus for inflammation and bleeding.[20] Chronic uterine inversion due to placental polyp has also been reported.[21] A case of placental polyp has been seen to arise from exaggerated placental site.[22] These pedunculated masses of villi are often found within days to weeks following abortion or delivery of a term placenta. Rarely, they persist for months or even years after pregnancy.[20]

Abnormal uterine bleeding due to placental polyp has been attributed due to preserved villi, clusters of destructive villi, and sometimes isolated viable cotyledons. Preservation of the brush border of syncytiotrophoblastic cells and the presence of placental phosphatase, maintain the anticoagulative properties of villi. Thromboplastic properties of the preserved villi play an important role in the pathogenesis of uterine bleeding where necrotic villi with epithelial remnants are prevalent.[23]

Pathogenesis of the placental polyps has been explained by two major theories. According to the first theory, the placenta is attached to the cornual or fundal myometrium and is easily retained as the myometrium in this region if it is thin and atonic. The second theory suggests that the placenta accreta leads to the retention of placental tissue as the villi in this condition are directly attached to the underlying myometrium due to the defective decidua, especially in the cornual region. Hence, the cornua or fundus becomes the most common sites for the placental polyps.[17] In our case second theory is proven to be the cause of placental polyp as per histological correlation. Ultrasound with color Doppler imaging can diagnose placental polyp with abundant blood flow.[24] Computed tomographic angiography and MRI is also useful in diagnosis, management and follow-up of placental polyp with neovascularization.[25,26]

Histologically, the placental polyp contains predominantly the ghost villi which are hyalinized and necrotic in nature. Some of the chorionic villi show a rim of synctitiotrophoblasts that are viable.[17] The base of the placental polyp contains abundant decidualized stroma with dilated and congested blood vessels. In comparison, the features favoring the diagnosis of placental site trophoblastic tumour (PSTT) are nodules composed of intermediate trophoblastic cells arranged in cords, nests, irregular clusters or scattered within the eosinophilic hyalinized or fibrinoid matrix. The cells have irregular and lobated nuclei and amphophilic or clear cytoplasm. Villi are not seen in PSTT condition. In our case the diagnosis of choriocarcinoma was ruled out due to the presence of villi, absence of nuclear pleomorphism and low level of β-hCG.[27] Ishihara et al has proposed an algorithm for diagnosis and management of placental polyp and placental polyp with AVM (Figure 6).[10]

The most clinically significant placental polyp is the hypervascular type. A hypervascular placental polyp may lead to severe hemorrhage that requires blood transfusions, interventional radiology procedures, hysteroscopic resection, and even hysterectomy to control bleeding. Evaluation of neovascularization by multimodal imaging is potentially useful in management of placental polyp in women who wish to preserve fertility. Successful treatment with the use of iliac artery occlusion catheters and concomitant hysteroscopic resection has been reported.[4] Local injections of methotrexate have also been used in the treatment of placental polyp.[26] Intraoperative injection of prostaglandin F2α followed by hysteroscopic resection has been successful in managementof these cases. Uterine artery embolization followed by selective hysteroscopic removal for placental polyp has been reported in 13 patients to minimize bleeding and preserve future fertility by Takeuchi et al.[19] Therefore, placental polyp should be considered as differential diagnosis in any case of parous woman with unexplained abnormal uterine bleeding with ultrasound showing RPOC irrespective of serum hCG level. The history of the last pregnancy is sometimes very remote. This does not exclude the possibility of the presence of a placental polyp as the source of abnormal bleeding.

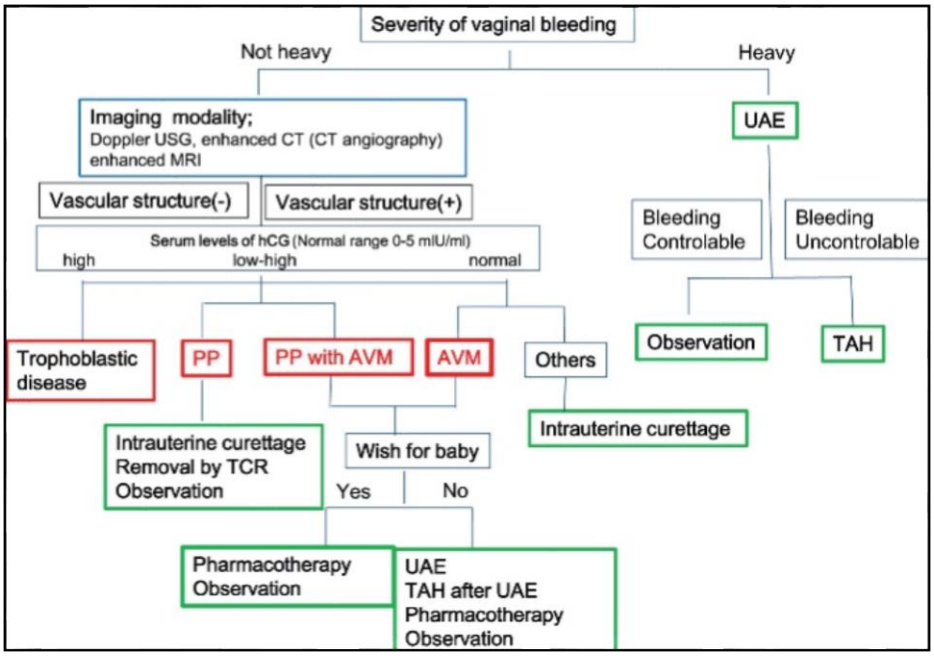

Figure 6: Proposed algorithm for the diagnosis and management of placental polyp and AVM.
AVM: Arterio-venous malformation, TCR: transcervical resection, UAE: uterine artery embolization, TAH: total abdominal hysterectomy, PP: placental polyp).[10]

CONCLUSION

Though placental polyp is a rare entity, it has similar clinical features as the other diseases and therefore, it should be considered as a differential diagnosis in any case of parous woman with unexplained abnormal uterine bleeding with ultrasound showing RPOC, irrespective of serum beta-hCG level. The history of last pregnancy may be sometimes very remote but this does not exclude the possibility of the placental polyp as the source of abnormal uterine bleeding. The high index of suspension of arteriovenous (AV) malformation should be kept as a differential. The most common and serious conditions should be explored.

To preserve fertility and alleviate morbidity in the cases of placental polyp due to placenta accreta, optimal investigations and different management options with efficient planning is a boon for the patients. Though the ideal treatment is conservative medical management with radiological intervention, but as our patient was very adamant and wanted radical treatment, total hysterectomy was performed to save her life from torrential bleeding. Clear guidelines for managing placental polyp are not currently available. We hope that by sharing our experience in managing such patients, especially with good outcomes, we can shed some light on the available treatment options for these patients.

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