CASE REPORT

Placental site nodule (PSN): an uncommon diagnosis with a common presentation

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SUMMARY

Placental site nodule (PSN) is a rare benign lesion of the intermediate trophoblast which is thought to represent incomplete involution of the placental implantation site. PSN usually presents as menorrhagia, intermenstrual bleeding or an abnormal Pap smear. PSN is benign, but it is important to distinguish it from the other benign and malignant lesions like decidua, placental polyp, exaggerated placental site and placental site trophoblastic tumour. Follow-ups of typical PSNs do not show recurrence or malignant potential. PSN is an uncommon condition which should be suspected in cases of abnormal bleeding, especially following uterine surgical procedures preceding last pregnancy. Timely diagnosis and treatment is necessary to differentiate it from potentially malignant placental lesions with a similar presentation.

BACKGROUND

Placental site nodule (PSN) is a rare diagnosis.

We would like to raise awareness of this condition which presents like any other common pathology, so that early diagnosis and prompt treatment can lead to resolution of symptoms.

Atypical PSN can potentially progress to placental site trophoblastic tumour (PSTT) and epithelial trophoblastic tumour.

CASE PRESENTATION

A 28-year-old woman, para 2, with a history of polycystic ovarian syndrome, presented with a 1 year history of menometrorrhagia and intermenstrual spotting starting 2 months after a full term normal delivery. Following her first delivery, she had undergone manual removal of the placenta (MRP) and had postpartum haemorrhage requiring blood transfusion.

She opted for surgical termination of her second pregnancy. The third pregnancy was uneventful and she delivered normally at term. Following that, she developed irregular menstrual cycles with heavy bleeding and intermenstrual spotting.

Clinical examination, hormonal profile and Pap smear were normal.

INVESTIGATIONS

Ultrasonographic evaluation showed a 9 mm thick heterogeneous, irregular endometrium with slight increase in vascularity. Hysteroscopy (figure 1) showed a normal appearing endometrium with a 2 cm polyp which was removed. Histology confirmed PSN along with a normal secretory endometrium (figure 2 and 3).

TREATMENT

The patient was keen on contraception, and Mirena IUS (levonorgestrel-releasing intrauterine system, Bayer) was inserted in the endometrial cavity.

OUTCOME AND FOLLOW-UP

On follow-up, the patient had regular menstruation; serum β -human chorionic gonadotropin was negative.

DISCUSSION

There are two case reports in the literature of hysteroscopic findings with PSN. Both had different findings. One had a 2 cm irregular-surfaced white-red nodule with areas of haemorrhage, necrosis and increased vascularity nearby; another had an intrauterine adhesion with a small yellow-white necrotic nodule below it.¹ In our case, hysteroscopy showed a normal endometrium with a 2 cm red-white polyp (figure 1). Ultrasound had shown a thick heterogeneous, irregular endometrium with slight increase in vascularity, but the polyp had not been seen.

It has been suggested that PSN may be due to endometrial alterations leading to abnormal involution of the placental site. Surgical procedures like caesarean section (CS) and endometrial curettage may increase the risk of endometrial alterations leading to defective implantation. In total, 45–82% of PSN cases have a history of endometrial curettage or CS before their most recent pregnancy. Our patient had MRP following first delivery, elective surgical termination (TOP) of second pregnancy and an uncomplicated third pregnancy following which she developed intermenstrual spotting.¹ The MRP and TOP were risk factors for formation of PSN.

Figure 1 Hysteroscopy showing a red-white polyp.

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Figure 2 Placental nodule showing trophoblastic cells in fibrinoid stroma, H&E stain, $\times 100$.

PSN is benign, but it is important to distinguish it from the other lesions like decidua, placental polyp, exaggerated placental site and PSTT.² PSN may also be histologically confused with squamous cell carcinoma (SCC) of the cervix. PSNs are immu-

noreactive for inhibin- α (figure 3) and cytokeratin-18, whereas SCCs are negative.³

Case series on follow-up of typical PSNs do not show recurrence or malignant potential. There are case reports of atypical PSNs and PSNs coexistent with epithelioid trophoblastic tumour and PSTT, leading to the suggestion that PSN could be a precursor lesion of trophoblastic neoplasms. It has been postulated that some trophoblasts of PSNs retain differentiation plasticity and can differentiate to form other trophoblasts like the intermediate trophoblast.⁴

Learning points

- Placental site nodule (PSN) is an uncommon condition which should be suspected in cases of abnormal bleeding, especially following uterine surgical procedures preceding last pregnancy.
- It would be prudent to closely follow-up cases of atypical PSN.
- Even in the presence of a history of previous irregular cycles, a patient presenting with worsening menstrual problems, especially after an intercurrent pregnancy, should be thoroughly investigated to look for other causes.
- PSN can present remotely from the preceding pregnancy.

Figure 3 Immunostain for inhibin showing positive staining trophoblastic cells in the placental nodule, inhibin immunostain, $\times 100$.

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