CASE REPORT

Submucosal uterine fibroid prolapsed into vagina in a symptomatic patient with IUS

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SUMMARY

A female patient in her mid 40s presents with heavy menstrual bleeding (HMB) and a history of spotting/irregular light per vagina (PV) bleeding since intrauterine system (IUS) insertion 1 year ago. She is known to have submucosal uterine fibroid (SMUF). The patient reported abdominal pain and sudden onset of 'miscarriage-like' HMB with clots 2 days ago. On speculum examination there was a smooth round-shaped mass lying over the external cervical os. On bimanual examination PV, a round-shaped smooth mass of a walnut's size was palpable in the upper third of the vagina. Subsequent ultrasound imaging revealed an SMUF prolapsed into the vagina. Further surgical treatment was undertaken. Histology showed a fibroid (leiomyoma) with no evidence of malignancy.

BACKGROUND

This rare case of complication of submucosal uterine fibroid (SMUF), as a cause of heavy menstrual bleeding (HMB) and irregular per vagina (PV) bleeding, has valuable educational interest because of its nature of presentation: a submucosal fibroid being prolapsed into vagina (SMUFPIV) in a symptomatic patient with intrauterine system (IUS).

Uterine fibroids and HMB are common. That is why other more serious causes of abnormal PV bleeding or pelvic mass can often co-exist and need to be excluded.

Uterine fibroids are benign. They occur in 1 in 3 women aged 30 years and above, and become more common as women approach menopause.

Even though uterine fibroids are commonly associated with PV bleeding, SMUFPIV are rare, especially with IUS remaining in situ. There were no similar published reports identified by the literature search.

Thus, this is a rare case of HMB and pain in women of reproductive age with IUS, which addresses two areas of specialty: gynaecology and contraception/family planning (FP).

CASE PRESENTATION

A 47-year-old woman presented with a 1-year history of spotting and irregular light PV bleeding since IUS insertion 1 year ago. She reported low abdominal pain and sudden onset of HMB with clots 2 days ago with 'miscarriage-like' crampy pain. She had no signs or symptoms of anaemia. The patient self-referred to the central FP clinic.

The patient's medical history revealed menorrhagia and severe anaemia with blood transfusion during hospital admission 1 year ago. Pelvic

ultrasound (US) from last year showed a small SMUF at the anterior uterine wall, measuring 18 mm.

IUS was inserted for the treatment of menorrhagia during hysteroscopy with endometrial biopsy 1 year ago and on endometrial biopsy there were no abnormalities detected: no evidence of inflammation, hyperplasia or neoplasia.

Smear tests were up-to-date and the patient was on normal recall for smear. Mild dyscariosis, more than 10 years ago, was treated with a large loop excision of transformation zone. Histology showed cervical intraepithelial neoplasia and correlated with one grade with previous abnormal smear.

The patient was in a monogamous long-term relationship with low risk for sexually transmitted infection (STI). Routine screening for STI was negative.

No family history of endometrial cancer or other gynaecological malignancies was noted.

On examination the abdomen was soft, non-tender. There was no guarding or rebound tenderness.

Speculum examination revealed a small amount (1–2 mL) of dark blood, no clots, no vaginal discharge or odour. A smooth round-shaped mass, measuring 4.5 cm×3.5 cm×3 cm, was lying over the external cervical os (figure 1). There was no inflammation of the vaginal mucosa. IUS threads could not be visualised. Multiparous cervix was of a healthy appearance.

On bimanual examination PV, a round-shaped smooth mass of a walnut's size was palpable in the upper third of vagina. The mass was attached to the cervix. The uterus was anteverted, slightly bulky, partially mobile and tender to palpation. Slight cervical excitation was noted. There was no

Figure 1 SMUFPIV on speculum examination. Courtesy of Dr Mahto.

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Figure 2 SMUFPIV on pelvic USS.

adnexal tenderness or pelvic mass. IUS threads were felt at 11 o'clock between the SMUF and the cervix.

The patient was sent to the hospital following an urgent gynaecological referral for further investigations, including pelvic US (figure 2) and surgical treatment to remove the SMUF.

The case is unique as the patient delivered the SMUF into the vagina while the IUS remained inside the uterine cavity because of low lying submucosal fibroid. The IUS remained in situ after hysteroscopy and surgical removal of the SMUF, as the patient wished to continue with the IUS method of contraception.

The patient's consent was obtained for the case report purposes.

INVESTIGATIONS

Biochemical and haematological investigations were normal.

The patient has undergone a routine screen for STIs in the form of swabs for gonorrhoea and chlamydia, as well as serology for syphilis and HIV. Her STI screening results were negative.

US picture was mimicking cervical fibroid mass in the vagina. However, a pelvic Doppler US confirmed a long and wide SMUFPIV (4.5 cm × 3.5 cm × 3 cm) taking into account the clinical presentation and previous US report.

Macroscopic description of the specimen: fibroid measuring 40 × 20 mm. Histology report showed endocervical mucosa with prominent smooth muscle bundles in keeping with a uterine fibroid (leiomyoma), and no evidence of malignancy.

Pregnancy test was negative.

All blood tests including full blood count (FBC) and coagulation screen were normal.

We suggest the following list of investigations which may be appropriate for patients with uterine fibroid and PV bleeding, and where SMUFPIV is suspected:

FBC to check for anaemia; iron studies (ferritin, B₁₂, folate) and coagulation screen, if indicated.

Pelvic US is indicated to confirm the presence, size and structure of a suspected uterine fibroid(s), distortion of uterine cavity, endometrial hyperplasia, as well as to exclude other causes of a pelvic mass, and possible complications (such as uterine inversion, urinary tract obstruction causing hydronephrosis, etc). Transvaginal US is usually more accurate.

Endometrial sampling is important for histology assessment of abnormal uterine bleeding. In our case histological investigations were carried out twice: before IUS insertion and also after surgical removal of SMUF during hysteroscopy. There was no evidence of malignancy. Therefore, hysteroscopy with biopsy is recommended.

MRI is occasionally required (not performed in this case since it was a pedunculated fibroid), if pelvic US is not definitive in assessing the depth of uterine fibroid when hysteroscopic removal is considered.

DIFFERENTIAL DIAGNOSIS

Uterine fibroids and HMB are common, therefore, it is important to exclude other causes of pelvic and gynaecological pathology.

Differential diagnosis for uterine fibroids depends on the symptoms they are causing.

In our case dysfunctional uterine bleeding alone can be ruled out, because of a known history of uterine fibroid from a US prior to IUS insertion.

Pregnancy, including ectopic or cervical pregnancy, and recent miscarriage were ruled out with a pregnancy test being negative, despite presenting history of a crampy 'miscarriage-like' pain and delivering 'something' into vagina.

The diagnosis of cervical polyps, cervical fibroid and endometrial polyps were ruled out on the basis of clinical examination, the patient's history and US. Doppler pelvic US confirmed a 4.5 cm × 3.5 cm × 3 cm SMUFPIV.

Cervical tumour was an unlikely diagnosis based on previous investigations and current examination. The macroscopic appearance of SMUFPIV was of a round-shaped mass with smooth surface, which looked benign. Histology confirmed a uterine fibroid (leiomyoma).

Endometrial carcinoma was ruled out by recent and previous hysteroscopy and histological investigation of endometrium before IUS insertion 1 year ago. There was no family history of endometrial or other gynaecologically related (uterine, ovarian, breast, etc) cancer.

There was no medical history of endometriosis, dysmenorrhoea or dyspareunia.

Pelvic inflammatory disease (PID) was unlikely given the patient's history as a low risk for STIs being in a long-term stable relationship. STI screening was normal. Furthermore, gynaecological examination was negative for PID findings.

Uterine inversion was also ruled out following clinical examination. However, SMUFPIV might be a cause of prolapsed uterus with fibroid after vaginal delivery as reported previously in the literature.¹

In conclusion, particular details of the patient's history, examination and investigations, including histological investigation, were important to confirm the diagnosis and to exclude other differentials as above.

SMUFPIV previously has been reported in a few different clinical circumstances. However, it has not been reported in patients with IUS and remaining IUS with confirmed prolapsed of submucosal fibroids (SMUF).

While SMUFPIV is rare, it should be considered in the presence of persistent PV bleeding in a woman with a history of uterine fibroid, especially with suspected SMUF.

TREATMENT

Hysteroscopic myomectomy involves vaginal removal of submucosal fibroids.

SMUFPIV was removed with further histological investigation of the mass, which confirmed a fibroid (leiomyoma).

Hysterectomy could also be considered as a treatment option. Hysterectomy was discussed with the patient in this case, but she opted for hysteroscopic removal of SMUFPIV.

OUTCOME AND FOLLOW-UP

The patient was followed up in 15 days after hysteroscopic removal of pedunculated uterine fibroid. She could not feel IUS threads on self-examination and was concerned whether the IUS was still in situ. The patient had no bleeding and no abdominal pain. On transabdominal US, the IUS remained inside the uterine cavity, with no displacement seen and both ovaries clearly visible.

The patient experienced no complications after surgery and no IUS side effects. She was advised to return to her normal activities, including dancing, swimming, etc. The patient was advised to replace the IUS in 4 years as licensed.

DISCUSSION

This report highlights SMUF as a cause of irregular and prolonged PV bleeding in a symptomatic patient with IUS. Since HMB and uterine fibroids are common, other serious causes of abnormal PV bleeding or pelvic mass can often coexist and must be excluded. However, prolapse of SMUF is rare.

Uterine fibroids are non-cancerous smooth muscle tumours with fibroid elements that develop in the wall of the uterus. They occur in over 30% of women aged above 30 with increasing prevalence in premenopausal group.² Symptoms are often associated with larger fibroids and include HMB, anaemia, dysmenorrhoea, pressure effects, urinary urgency and subfertility.

Literature search identified the following publications regarding different presentations and treatment in cases of prolapsed SMUF: while in labour,¹ when removing the pedunculated submucous myoma PV,³ about posterior vaginal hernia simulating prolapsed submucous fibroid,⁴ and about complication as uterine inversion in fundal submucous fibroid.⁵ Furthermore, uterine fibroid prolapse through the cervix as a complication of treatment of uterine fibroids with uterine artery embolisation has been described.²

However, there were no published cases about prolapsed SMUF in a symptomatic patient with IUS.

As per Faculty of Sexual and Reproductive Healthcare (FSRH) and National Institute of Health and Care Excellence (NICE) guidance, in case of unscheduled bleeding for more than 3 months it is essential to carry out speculum and bimanual examinations at FP setting for women with IUS.^{6 7} Gynaecological pathology should be excluded. Differential diagnoses include cervical and endometrial polyps, neoplasia and uterine fibroid prolapsing through the cervix.² STI screening should be offered to all women using IUS with unscheduled bleeding.

If a patient is symptomatic with a history of crampy pain and PV bleeding, especially with an IUS/IUD (intrauterine device), speculum and bimanual examinations as well as pelvic US should be performed to rule out coil displacement and/or expulsion. The choice between transabdominal pelvic US or transvaginal US depends on clinical circumstances,⁸ since the latter could be painful with a prolapsed SMUF.

Pipelle biopsy for patients presenting with SMUFPIV and PV bleeding could be challenging and inappropriate as an urgent referral is required for further surgical treatment in view of possible complications.

Possible complications of unrecognised and/or untreated submucosal pedunculated uterine fibroid prolapsed into the vagina are torsion, necrosis and uterine inversion (chronic or acute). With torsion of the pedunculated uterine fibroid there is

a reduction of blood supply to the fibroid, so the necrotic process will begin, which can increase pain and the risk of infection.

With a small (less than 3 cm) uterine fibroid the patient may be asymptomatic in approximately 50% cases, but with SMUFPIV the patient would always be symptomatic with crampy pain and PV bleeding. The patient needs an urgent referral to gynecological department for surgical removal of the SMUFPIV due to possible complications.

Surgical treatment of choice in this case of prolapsed SMUF was hysteroscopic myomectomy, which involves vaginal removal of SMUF. IUS remained in situ (having been inserted only a year previously) after the procedure due to an excellent surgical technique. IUS remained in the uterine cavity after the procedure for contraceptive reasons and as a first-line treatment for HMB,^{6 9} as well as due to the patient's preference to continue with this method of contraception.

Learning points

- ▶ Consider a submucosal fibroid being prolapsed into vagina (SMUFPIV). Complication of submucosal uterine fibroid as prolapsed into vagina is rare, but consider SMUFPIV if the patient is symptomatic with a history of crampy pain and heavy menstrual bleeding/per vagina (HMB/PV) bleeding, especially with intrauterine system/intrauterine device (IUS/IUD) as coil displacement and expulsion could be ruled out at the same time.
- ▶ Possible complications of unrecognised and/or untreated SMUFPIV are torsion, necrosis and uterine inversion.
- ▶ Surgical treatment is required. Hysteroscopic myomectomy involves per vaginal removal of submucosal fibroids. Hysterectomy could be an alternative option.
- ▶ IUS, as a contraceptive or treatment of HMB, could remain in situ after the surgical procedure or could be replaced with a new IUS during or after the procedure.

Competing interests None.

Patient consent Obtained.

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