CASE REPORT

Vaginal leiomyoma in pregnancy presenting as a prolapsed vaginal mass

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Vaginal leiomyomas are rare benign solid tumours of the vagina. They can cause mechanical dystocia, which is a common problem in obstetrics leading to serious maternal and perinatal complications. Here we describe a patient with a vaginal leiomyoma diagnosed during the mid-trimester that could have caused dystocia. This 22-year-old woman presented with a vaginal mass and leaking vaginal fluid during pregnancy. On examination, a prolapsed, pedunculated mass, measuring 5 × 3 × 4 cm was detected in the anterior vaginal wall. Via a midline incision, the mass was easily enucleated and removed. Transvaginal surgical enucleation of the vaginal leiomyoma is usually curative and recommended as the initial treatment of choice to prevent for dystocia. Such treatment is indicated when the tumour is a potential obstacle to normal labour.

Introduction

The vagina is a rare site for leiomyoma, and if present it is usually located in the anterior wall and rarely the lateral wall and vulvar region.[1] Its aetiology is unknown, though some authors have speculated that it could be due to residual embryonic blood vessel tissues and smooth muscle fibres.[2] Approximately 300 cases have been reported in the literature since this tumour was first documented by Denys de Leyden in 1733.[3,4] Bennett and Ehrlich[5] found only one example in 15 000 autopsies at Johns Hopkins Hospital. Thus, vaginal leiomyoma is a rare solid tumour, with a variable clinical presentation that depends on its size and position; most commonly it gives rise to a protruding mass, dyspareunia, dystocia, and urinary symptoms.[6]

When vaginal tumours occur in pregnancy, they complicate the diagnosis and management, which also depends on their size and location and sometimes they can lead to dystocia. We report a vaginal leiomyoma discovered during pregnancy that was treated surgically during the second trimester; the patient proceeded to a normal natural delivery.

Case report

A nulliparous 22-year-old pregnant woman was referred to our gynaecology clinic in September 2010 for a painless vaginal mass, which had prolapsed beyond the vagina for 2 weeks. Her complaint was foul-smelling vaginal discharge. On examination, a round, solid, painless, prolapsed mass measuring approximately 5 cm in diameter was located bulging from the anterior vaginal wall, 2 cm below the urethral meatus (Fig a).The tumour was mobile, pedunculated, non-tender, and soft in consistency. Visualisation of the cervix was difficult. The mass was not attached to the uterus or cervix. Its surface was covered with vaginal epithelium which was eroded at its central part. Magnetic resonance imaging revealed the presence of 5 x 3 x 4 cm solid mass, originating from the anterior vaginal wall and protruding through the vulva (Fig b). Vascularisation of the tumour was not evaluated by contrast injection due to the pregnancy. Abdominal ultrasound showed an intact 22-23–week pregnancy as well as the solid (5 x 4 cm) lesion on the anterior vaginal wall.

Because of its location and findings from imaging, an isolated vaginal leiomyoma was considered the most likely diagnosis. Preoperative cystoscopy revealed an entirely normal urethra and bladder, and no evidence of any connection between the tumour and the urethra or bladder. We decided to perform surgical excision through the vaginal route. A Foley catheter was placed to avoid injury to the urethra during the operation. Surgical excision was performed vaginally without difficulty. After making a 2-cm incision on anterior vaginal wall, the mass was removed completely (Fig c). The vagina was repaired by the two-layer closure procedure. The urethra was checked and catheter removed after 1 day. The operation lasted 45 minutes, and there were no intra-operative or postoperative complications. The patient was discharged on postoperative day 1. Gynaecological examination 4 weeks later yielded nil abnormal. She had a spontaneous vaginal delivery at

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懷孕期內出現脫垂陰道腫塊的陰道平滑肌瘤

陰道平滑肌瘤為陰道的一種良性腫瘤，可引致嚴重的孕產婦和圍產兒併發症而導致難產。本文報告一名22歲孕婦，她在妊娠中期發現有陰道平滑肌瘤並有液體流出而可能導致難產。仔細檢查後在病人陰道前壁處發現有一個5 × 3 × 4 cm的脫垂及有蒂的腫塊。替病人進行正中切口把腫塊移除。一般來說，經陰道進行平滑肌瘤切除術可避免難產，所以是治療的首選方法。當陰道平滑肌瘤有機會造成分娩障礙時便須使用這種切除術。

40 weeks of gestation; the female infant weighed 3.4 kg. The vaginal scar was unruptured. The postpartum course was uneventful and the woman was discharged with her infant on the second postpartum day. Four weeks later, gynaecological examination revealed no abnormality.

Pathological examination of the specimen showed a globular-shaped mass measuring 5 x 3 x 4 cm, with a thick white fibrous tissue capsule. The cut surface showed bands of white fibrous tissue and pale brown colour. Histopathological evaluation confirmed the diagnosis of a benign leiomyoma. Immunohistochemical studies revealed that the tumour cells were positive for smooth muscle actin and Ki-67. The staining profile was consistent with a tumour of smooth muscle, and the overall histological features were most consistent with a leiomyoma.

Discussion

Leiomyomas in the vagina have been reported in patients from puberty to the age of 71 years, and most commonly are encountered in the age range of 35 to 50 years.[7] The tumours are usually moderately firm, but since they may undergo degenerative changes as occurs in the uterus, they may vary in consistency from firm to soft.[8] They are relatively small in size, varying from 1.5 to 4.5 cm in diameter, and may or may not be pedunculated and covered with smooth intact mucosa. In a number of reported cases, ulceration of the overlying mucosa has been noted with subsequent necrosis, purulent discharge, and bleeding.[9]

Sarcomatous change may occur in a benign leiomyoma.[10] Whether leiomyosarcomas are primary or due to malignant change in benign tumours is unclear. It is well-known, however, that sarcomatous change may occur within the tumour. In a retrospective analysis of leiomyosarcomas, Cobanoğlu et al[4] concluded that malignant transformation was more common in extra-uterine leiomyomas.

In a series of 11 cases, Liu[11] reported a 9% rate of sarcomatous change, more commonly in those arising from the posterior vaginal wall. Several entities must be considered in the differential diagnosis of a mass located between the vagina and urethra.[12] They include benign lesions such as leiomyomas, polyps, Gartner's duct cysts, and endometriosis, as well as malignant vaginal tumours (leiomyosarcoma, squamous carcinoma, adenocarcinoma), and rarely metastases.

Whilst only a few cases have been reported in pregnancy, it is obvious that vaginal lesions can lead to difficulty in labour and delivery. Not surprisingly, vaginal leiomyomas are associated with pregnancy,

FIG. (a) Pelvic examination shows the pedunculated tumour protruding from the midline of the vagina. (b) A magnetic resonance image demonstrates a 22-week fetus (black arrow) and vaginal myoma (white arrow). (c) Following surgery, the vaginal tumour was noted to be a 5 × 3 × 4 cm grayish-white, elastic mass

TABLE. Reported cases of vaginal leiomyoma associated with pregnancy[5,8,12-18]

Authors	Age (years)	Gestational weeks	Outcome	Delivery
Bennett and Erlich[5]	Unknown	Unknown	No operation (small size)	At-term vaginal delivery
Oruç et al[8]	37	18	Abdominal hysterotomy	Pregnancy terminated
Sadan et al[12]	30	18	3 Weeks after birth, vaginal removal	At 36 weeks, caesarean section
Schonberg et al[13]	26	26	Vaginal removal	At-term vaginal delivery
Lucas et al[14]	Unknown	Mid-trimester	At-term vaginal removal	At-term vaginal delivery
Kilpatrick et al[15]	32	16	Vaginal myomectomy	At 38 weeks, vaginal delivery
	35	13	Vaginal myomectomy	At 16 weeks, premature of rupture of membrane and induction of labour
Rywlin et al[16]	32	Mid-trimester	Vaginal removal	At-term caesarean section
Cordaro[17]	Unknown	Term	No operation	Fatal uterine rupture
Moghissi[18]	38	Term	Abdominal hysterectomy	At-term caesarean delivery

and causing difficulty in labour have been amply documented (Table).[5,8,12-18] Cordaro[17] reported a patient with a large myoma in the vagina who had a fatal ruptured uterus during the course of a prolonged labour. Moghissi[18] reported a patient with a tumour measuring 7 cm in diameter in the anterior vaginal wall and had two caesarean sections for vaginal dystocia before the tumour was removed. Bennett and Erlich[5] reported an uneventful pregnancy course and uncomplicated delivery with a small-sized myoma that did not grow during pregnancy.

In pregnancy, excision of these tumours seems to be the treatment of choice.[19] Careful assessment of the origin and extent of the fibroid is important and should be performed before the operation. The optimal time for removal is between the 16th and 32rd week. The probability of early abortion or wound breakdown during labour is thereby reduced. The patient under discussion would almost certainly have needed a caesarean section to effect delivery if the tumour had not been excised. A routine gynaecological examination before pregnancy or during the first antenatal visit is very important, and should be encouraged not only to diagnose but also to manage such problems, as well as to diagnose many other diseases during pregnancy.

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