The Egyptian Journal of Radiology and Nuclear Medicine (2015) **46**, 507–509

Egyptian Society of Radiology and Nuclear Medicine

The Egyptian Journal of Radiology and Nuclear Medicine

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CASE REPORT

Vaginal leiomyoma: MRI features with pathologic correlation

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Received 9 May 2014; accepted 31 January 2015
Available online 28 February 2015

KEYWORDS

Vaginal leiomyoma;
MRI;
Histology

Abstract We present a rare case of vaginal leiomyoma presenting as prolapsed vaginal mass in a 45 years old woman. The leiomyoma was found to arise from the right lateral vaginal fornix with a vascular stalk. MRI showed homogenous hypointense signals on T1W1 and iso to hyperintense signals on T2W1 images with moderate heterogenous enhancement on post contrast images. It was enucleated via vaginal route and the histopathological examination confirmed the diagnosis of vaginal leiomyoma.

1. Introduction

Vagina is a rare site for leiomyoma and they are located mostly in the anterior wall. Only around 300 cases have been reported so far in the literature (1). These are most common in women aged 30–50 years (2). They may occur anywhere within the vagina and usually arise from the smooth muscle layer of the midline anterior vaginal wall. They usually present as a mass in the vagina or as pressure symptoms on urinary tract. MRI helps in accurate localisation and diagnosing the consistency of the mass. Surgical enucleation of the mass is the treatment of choice. Recurrence is uncommon but reported. The definite diagnosis of leiomyoma is made on histological findings consistent with a mixture of smooth muscles and fibrous stroma.

2. Case report

A 45 years old perimenopausal lady presented with chief complaint of a mass coming out of vagina since 5 years. The mass was initially comparable to the size of a lemon and it gradually increased to the present size. It used to come out of vagina during squatting and straining. She had previous six normal vaginal deliveries. For the past one year, she used to have menses every 4–6 months otherwise her previous menstrual cycles were unremarkable. She had no history of any menorrhagia. She was diagnosed and being treated for type II diabetes mellitus since past 5 years.

On examination, a round solid pedunculated mass approximately 6×5 cm in diameter was palpated in the vagina arising from the right lateral fornix. The cervix and the uterus were felt separately from the mass. The surface of the tumour was covered with normal vaginal epithelium. Transvaginal ultrasonography showed a large mass sized 6×4.8 cm in the vaginal canal separate from the cervix and the uterus. MRI revealed a $5.0 \times 5.5 \times 5.3$ cm sized well circumscribed mass lesion in the vaginal lumen arising from right fornix and

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Peer review under responsibility of Egyptian Society of Radiology and Nuclear Medicine.

http://dx.doi.org/10.1016/j.ejrnm.2015.01.010

causing leftward and superior deviation of cervix and causing indentation over the posterior urinary bladder wall. The mass showed homogenous hypointense signals on T1W1 and iso to hyperintense signals on T2W1 images (Fig. 1) with moderate heterogenous enhancement on post contrast images (Fig. 2). Uterus and the bilateral adnexa were unremarkable.

The location and the image findings supported the diagnosis of vaginal leiomyoma. We decided to perform surgical excision through vaginal route. After making a midline incision on the anterior vaginal wall, the mass was easily enucleated and removed (Fig. 3). Gross examination showed a globular mass $6 \times 5 \times 5.5$ cm with white capsule. Cut section showed bands of white fibrous tissue. Histopathological evaluation confirmed the diagnosis of benign leiomyoma (Fig. 4).

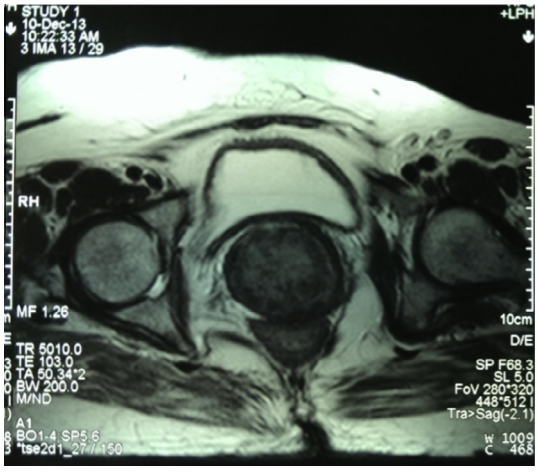

Fig. 1 Homogenous hypointense signal on T2 weighted image.

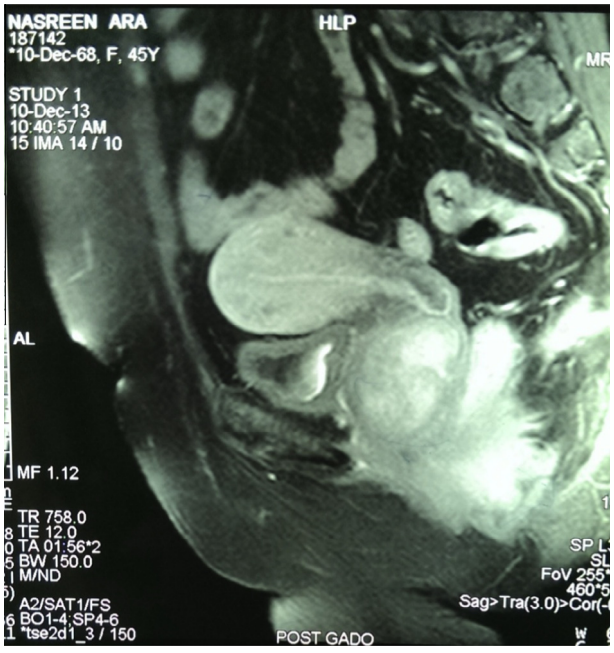

Fig. 2 Post Gadolinium contrast image – vaginal mass showed moderate heterogenous enhancement and causing leftward and superior deviation of the cervix.

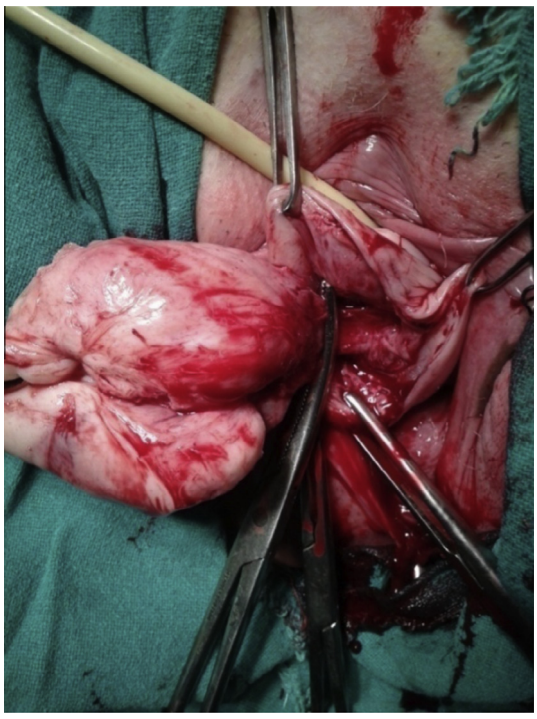

Fig. 3 Surgical enucleation of the vaginal mass.

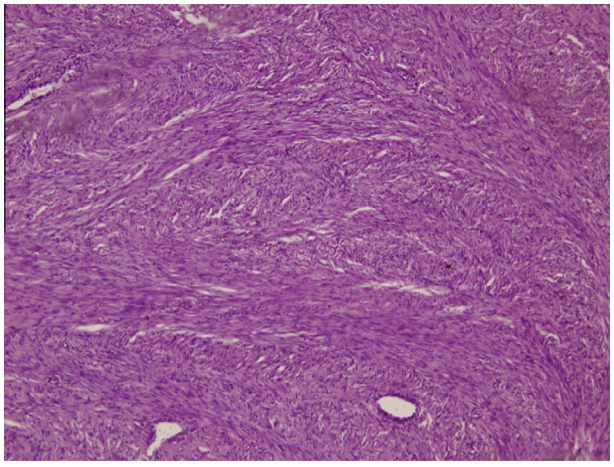

Fig. 4 Histopathology of the vaginal mass confirmed leiomyoma.

3. Discussion

Smooth muscle tumours are rare in the vulva and vagina, although they are the most common mesenchymal tumour of vagina (3). The differential diagnosis of solid tumours of vagina includes leiomyoma, fibroepithelial polyp, condyloma acuminatum, urethral leiomyoma, skene duct abscess or rarely vaginal malignancy. Vagina is a rare site for leiomyoma and they commonly arise from anterior vaginal wall and less commonly from posterior and lateral wall (4). Proposed sites of origin include vaginal smooth muscle, local arterial musculature or smooth muscles of urethra. Fibroepithelial polyps of vagina are usually small and may be multiple. Histologically,

the polyps are composed of a squamous epithelial surface with a fibromuscular stalk and edematous stroma (5). Condyloma acuminatum represents the clinical manifestation of Human Papilloma Virus infection. These lesions may appear only as vaginal lesions also. Histological evaluation is necessary to rule out dysplastic changes and to confirm the diagnosis.

Vaginal leiomyoma is solitary, small and slow growing. Depending on the size and location, vaginal leiomyoma may produce diverse clinical symptoms e.g. dyspareunia, dysuria or voiding difficulty. They usually present as a mass in the vagina as in our case or pressure symptoms on urinary tract. Pathologically, they are firm well circumscribed homogenous and resemble their uterine counterpart. They may be either pedunculated or intramural. Diagnosis was evident clinically as tumour pedicle was arising from the right lateral wall of vagina and reached up to the introitus. This case was an unusual one as it was arising from right lateral fornix with a vascular stalk.

Benign lesions should be excised conservatively. Though surgery through vaginal route is the treatment of choice, recurrence is of concern. At times, abdominopelvic approach may be required in case of large tumours (6).

The value of MRI in characterising a pelvic neoplasm has already been established. It helps in delineating the extent of the mass, its consistency and relationship with its adjoining pelvic structures. Leiomyoma is easily diagnosed when it shows low signal intensity on both T1 and T2 weighted images, however, vaginal leiomyomas can show various signal intensities on MR images, depending upon histopathological changes (2,7). Similar to the present case, Yamashita et al. also reported hyperintense uterine leiomyoma on T2 weighted image showing marked contrast enhancement (8). Leiomyosarcomas and other vaginal malignancies show characteristic high T2 signal intensity with irregular and heterogenous areas of necrosis and haemorrhage.

Leiomyoma is definitely diagnosed on histological findings consistent with a mixture of smooth muscles and fibrous stroma. Fig. 4 shows a similar findings, thus confirming the diagnosis. Sarcomatous changes may occur and tumour recurrence or rapid enlargement usually indicates malignancy. Histopathological examination is essential to evaluate the atypism and mitotic figures in order to rule out malignancy.

4. Conclusion

We present this case for its clinical rarity and its anamolous location i.e. origin from lateral vaginal wall. The importance of a proper magnetic resonance imaging in establishing the diagnosis has also been highlighted.

Conflict of Interest

We have no conflict of interest to declare.

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