

CASE REPORTS

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Female paraurethral leiomyoma: a case report

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Abstract

Background: Leiomyoma is a benign fibromuscular neoplasm originating from smooth muscle cells. Paraurethral leiomyoma is an extremely rare, benign, hormone-dependent growth from the mesenchymal cells in paraurethral space of female urethra. They usually appear in the reproductive age group women, mean age of presentation being approximately 41 years.

Case presentation: A 48-year-old woman presented with palpable mass at vagina and weak urinary stream. She underwent clinical examination and CT scan and MRI imaging followed by transvaginal excision of the mass. Histopathological examination confirmed paraurethral leiomyoma.

Conclusions: Paraurethral leiomyoma owing to its rare incidence poses a diagnostic dilemma for the gynecologists. Radiological imaging techniques help in diagnosis. Surgical excision via vaginal route is the treatment of choice. Diagnosis is confirmed by histopathology.

Keywords: Benign, Fibroid, MRI, Paraurethral leiomyoma, Smooth muscle

1 Background

Leiomyomas are rare benign fibromuscular tumors developing from smooth muscle cells. Most frequently they occur in the gastrointestinal and genitourinary system. Paraurethral leiomyoma has exceptionally rare incidence [1]. It consists of 5% of all paraurethral masses occurring in 1:1000 women [1]. Only few cases of true paraurethral tumors have been reported among the reported cases of urethral tumors. It grows as a mesenchymal neoplasm from the paraurethral space or vesicovaginal septum without any communication with urethra, bladder or vagina [1]. Patients present with wide variety of symptomatology varying from asymptomatic to urinary retention and voiding dysfunctions. Surgical excision is needed for symptomatic cases.

We report a case of a true paraurethral leiomyoma confirmed by histopathology in a young woman.

2 Case presentation

A 48-year-old, P4L3 woman attended Gynae OPD with chief complaints of a mass protruding at the vaginal introitus with incomplete voiding of urine and weak urinary stream for past two years. There was no associated menstrual complaint or abdominal pain or bleeding from mass. She did not complaint of dysuria, dyspareunia. Past medical and surgical history was insignificant. On physical examination, the abdomen was soft, non-tender and no organomegaly or lump was elicited. On local examination of the perineum, a 7 × 5 × 4 cm firm, smooth, non-tender, non-fluctuant mass was appreciated at the anterior wall of vagina posterior to urethral meatus (Fig. 1). An ulcer of area around 2 × 2 cm was seen in the central part of the mass. Per vaginal examination revealed anteverted, parous uterus and normal adnexa.

A pelvic ultrasonography (USG) was done which showed a bulky uterus with features of chronic cervicitis and a small hemorrhagic cyst in left ovary. Abdominopelvic computed tomography (CT) scan imaging identified an inhomogeneous mass from urethra or periurethral region. Pelvic magnetic resonance

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Fig. 1 Paraurethral leiomyoma in situ

imaging (MRI) was done where T1-weighted images showed well-defined encapsulated enhancing solid perineal mass in the periurethral region suggestive of urethral/ paraurethral leiomyoma (Fig. 2a, b). There was no urethral invasion. A fine needle aspiration cytology (FNAC) from the mass through transvaginal route revealed spindle cell lesion suggestive of leiomyoma. Preoperative cystoscopy and urethroscopy showed no involvement of bladder and urethra.

Decision for surgery was taken with consultation of urologists and surgeon team. After urethral

catheterization with 16-French Foley catheter, hydro dissection was done with injection of normal saline over the vaginal submucosa. Sub-urethral vertical incision was given over the mass and enucleation was done. Dead space was obliterated with Vicryl 2–0 sutures, redundant portion of vaginal mucosa excised and colporrhaphy was done. The excised specimen was encapsulated tumor, 6 cm (length) × 4 cm (width) × 4 cm (height) in size and cut section showed firm, whitish whorled appearance. Histopathology report showed interlacing fascicles of smooth muscle cells with hyaline degeneration thus confirming it to be leiomyoma (Fig. 3a, b).

Foley catheter was removed after 48 h and patient was discharged. Postoperative clinical course was uncomplicated. At four-week follow-up visit, patient was examined. The surgery site was clean, healing well and she was relieved of her symptoms.

3 Discussion

Paraurethral leiomyomas are benign tumors of mesenchymal origin [2]. The etiology is unknown [3] but the majority of reported cases in reproductive age women explains the hormonal role in its development [4]. Paraurethral leiomyoma affects both genders but has a female preponderance [4] and usual age of presentation is around 40 to 44 years [3]. Patients present with variable symptoms of pelvic pressure, urinary retention, protruding mass, voiding dysfunction lower urinary tract symptoms or vaginal bleeding. [5, 6]. The differential diagnosis of mass in this area can be urethral leiomyoma, urethral prolapse, urethral caruncle, urethral diverticulum, Bartholin's duct cyst, Skene's duct abscess, Gartner's duct cyst and urethral carcinoma [1]. No malignant

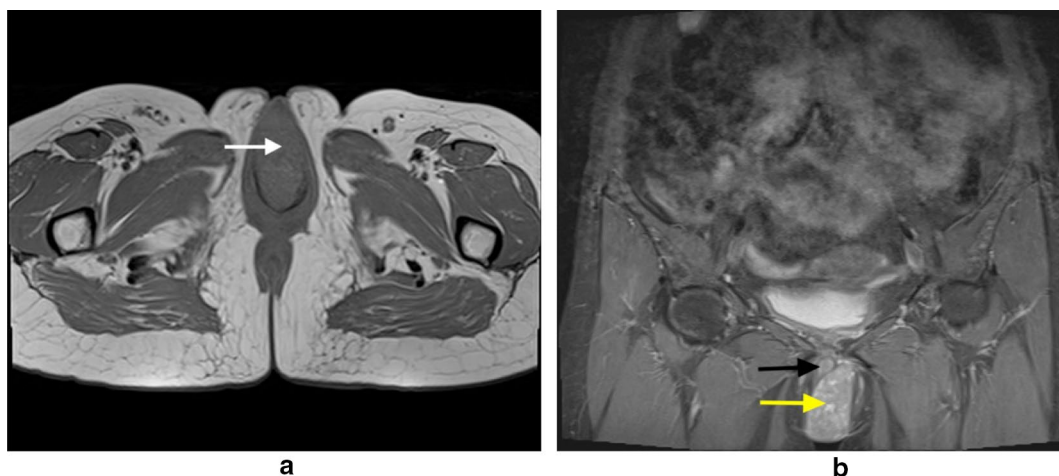


Fig. 2 Pelvic MRI T1-weighted images **a** Axial scan showing isointense mass **b** Coronal scan showing contrast enhancement of mass (yellow arrow), posterolateral to urethra (black arrow)

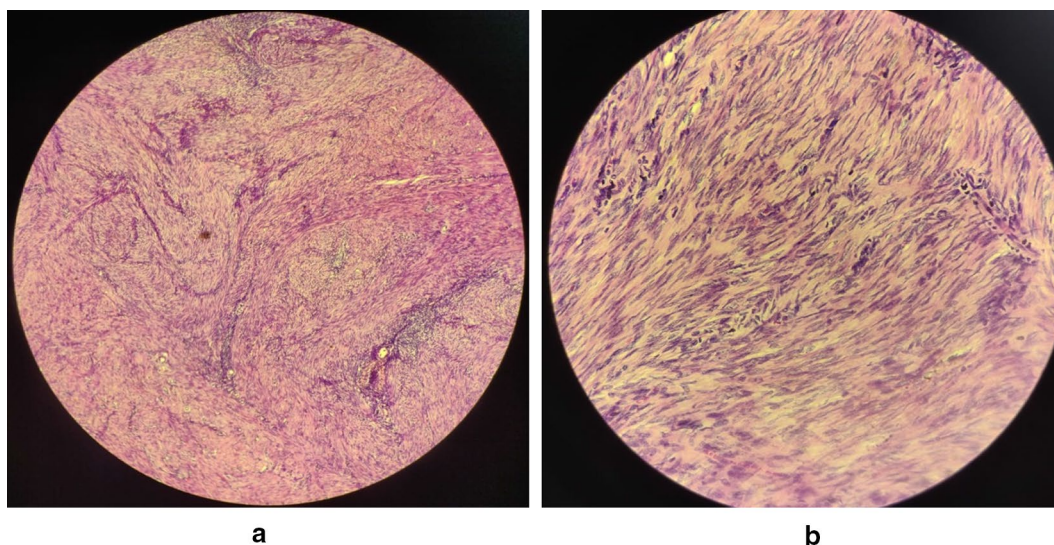


Fig. 3 Histopathology picture showing interlacing fascicles of spindle-shaped cells with oval nuclei and eosinophilic cytoplasm

transformation and very low risk of recurrence of this entity has been reported. To date, only four patients have developed recurrence [7]. Paraurethral leiomyomas are often mobile while urethral leiomyomas are fixed as seen in our case.

Detailed history and careful clinical examination are significant in diagnosis and evaluation of this case [6]. Radiological imaging techniques like USG, CT scan and pelvic MRI help in exact location and origin of mass and relationship with nearby structures which is essential for surgical planning. Transvaginal, transperineal, translabial USG has a role, which will show well-defined isoechoic or hypoechoic homogeneous mass and inner vascularity on color flow Doppler. MRI will show leiomyoma as homogeneous well-encapsulated mass appearing hypointense or isointense on T1-weighted images and intermediate signal on T2-weighted images [7].

Local surgical excision via transvaginal route has been recommended as the mode of management [4, 6, 8]. For larger paraurethral leiomyomas, abdominoperineal approach may be necessary. Histopathology is the gold standard for diagnosis which shows interlacing fascicles of spindle-shaped smooth muscle cells with oval nuclei and eosinophilic cytoplasm under hematoxylin and eosin stain [9]. Immunohistochemistry is positive for desmin and smooth muscle cell antigen [10].

The patient in our case presented at the age of 48 years with a palpable mass at the vaginal introitus and voiding difficulties which is similar to the symptoms reported in previous case reports [5, 6, 8]. After preoperative evaluation, the mass was surgically

excised through transvaginal route. Symptoms were resolved and postoperative recovery was uneventful.

4 Conclusion

Paraurethral leiomyoma is a rare benign tumor of female genitourinary tract. Its anatomical relation to bladder, urethra and vagina makes it an important differential diagnosis of paraurethral masses in women of reproductive age group. Radiological imaging techniques like USG and MRI play invaluable role in its diagnosis. Diagnosis is confirmed on histopathological examination which shows spindle-shaped cells arranged in whorls or fascicles. Surgical excision via vaginal route is the treatment of choice which should be done meticulously to avoid urethral injury. However, abdominal approach may be needed in some cases.

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Authors' contributions

FM and RS conceived the layout of case study and drafted the article. KAK and NP operated on the patient and made substantial contribution in critical revision of the article. NS contributed to clinical follow-up and collection of radiological imaging data. All authors read and approved the final version of manuscript.

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Availability of data and material

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Declarations

Ethics approval and consent to participate

Ethical clearance (Certificate number- Ref/Med/2021–72) was obtained from the Ethical Committee of Bokaro General Hospital.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Competing interests

The authors have no conflicts of interests to declare.

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