



Paraurethral Leiomyoma Masquerading as a Periurethral Retention Cyst

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Paraurethral leiomyomas are rare benign tumours of the female genitourinary tract¹. 1:1000 women present with periurethral masses, of which 5% are leiomyomas². Only 85 cases have been reported in the literature from 2000 to 2019. They tend to occur in women of reproductive age, with a mean age of 40 (21-52) years old¹.

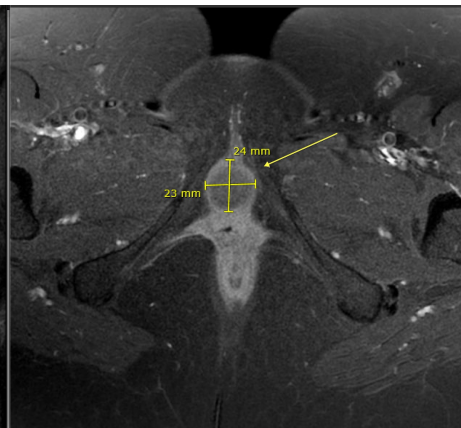
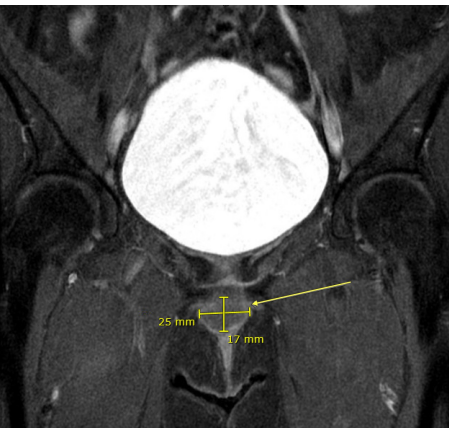
Case:

A 51-year-old woman was referred to our Urogynaecology outpatient clinic due to a vaginal lump, with associated pain, burning and itching.

She had been examined by her General Practitioner, who suspected a Bartholin's cyst. In the Urogynaecology clinic, examination demonstrated a 2cm mobile mass positioned anterolaterally to the right of the external urethral meatus. The mass was mildly tender to palpation, and was not associated with any urethral discharge. She was postmenopausal. Her BMI was 31.

A perineal ultrasound demonstrated a complex cystic structure just anterior to the urethra, with no communication to the urethra. A small fibroid uterus with two 2-3cm intramural fibroids was noted.

A contrast-enhanced MRI was performed and demonstrated a 2.5cm midline mass at the introitus anteriorly, showing peripheral enhancement post-contrast. The bladder and urethra were normal. There was no evidence of urethral diverticulum. The MRI concluded that the lesion represented a likely complex retention cyst (**Figure 1 Below**).



On MRI, a paraurethral leiomyoma is characterised by intermediate to low signal intensity of T2-weighted images, and low signal intensity with contrast enhancement on T1-weighted images⁷. MRI and Ultrasound are also used to determine proximity to surrounding structures, particularly urethra, and to assess alternative diagnoses.

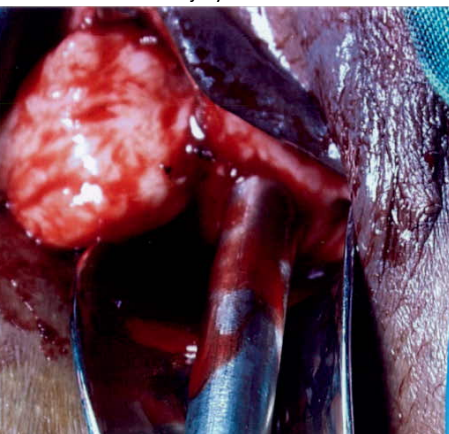
Differential diagnoses for paraurethral masses include urethral diverticulum, Skene's duct abscess, Gartner's duct cyst, vaginal wall inclusion cyst, and malignancy⁸. Diagnosis is histopathological, either by incisional biopsy or excision.

Treatment is by surgical excision, addressing symptoms by reducing the tumour's mass effect. 90% of cases are performed by vaginal approach¹. The proximity to urethra and bladder poses surgical challenges, and the surgeon should be prepared to repair the urethral mucosa if necessary. Recurrence is rare. However, stress urinary incontinence post-excision is a recognised complication, which is often managed with a midurethral sling⁹.

References

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The excision of the paraurethral mass was performed under General Anaesthetic. An initial cystourethroscopy was performed, demonstrating no evidence of urethral diverticulum and a normal bladder and urethral appearance. The mass was noted to be firm and mobile. It was pushed distally with labial pressure and an elliptical incision over the most dominant portion of the mass was performed. **Figure 2A** shows the mass being enucleated from the surrounding tissue, with a dilator used to identify the urethra visually and haptically due to its proximity. The resulting dead space and the incision were closed with 3-0 Vicryl (**Figure 2B Below Right**). A repeat cystourethroscopy confirmed no evidence of urethral or bladder injury.



The patient was discharged home that day, with an indwelling catheter and oral antibiotics. 7 days postoperatively she underwent a successful trial of void. 4 weeks later, her symptoms had resolved and examination was unremarkable (**Figure 3 Top Right**). She denied any urinary incontinence. The histopathology showed a benign leiomyoma. (**Figure 4 Bottom Right**)

Discussion:

Paraurethral leiomyomas are rare benign tumours of the female genitourinary tract. Some authors have hypothesised that they originate from residual embryonic smooth muscle fibres and vascular tissue¹. The highest incidence in women of reproductive age may reflect an oestrogen influence, consistent with paraurethral leiomyomas growing during pregnancy and regressing postpartum³. This hormonal influence has been further supported by a rare recurrence of paraurethral leiomyoma during pregnancy⁴, and cases demonstrating oestrogen-receptor positive specimens⁵.

However, others have questioned this hypothesis, noting cases in postmenopausal women⁶. In our case, the patient's recent menopause reduces the time for a drop in oestrogens to affect tumour size. Her BMI of 31 may also contribute to increased circulating oestrogens, due to adipose-related aromatase expression and peripheral oestrogen conversion. Therefore, her presentation with a postmenopausal paraurethral leiomyoma can be considered consistent with the oestrogen-dependent hypothesis.

