

# Bladder leiomyoma mimicking cervical or vaginal myoma

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## Background

Uterine myomas are one of the commonest gynecological tumors [1]. Rarely, they arise from unusual locations like round ligament, vagina, vulva, and bladder. Myomas at these unusual locations can be challenging diagnostic problems. Since leiomyomas from the bladder are very close to the uterus, they can present as a gynecological problem. We are presenting a case of leiomyoma of bladder mimicking as cervical or vaginal myoma.

A 22-year-old unmarried sexually inactive girl presented with a history of dysuria and increased frequency of micturition for 3 months.

## Methods and findings

General physical examination was normal. Transabdominal sonography of the pelvis showed normal uterus and adnexa. A heterogeneous mass measuring 5.1 cm in diameter was noted adjacent to the urinary bladder suggesting a cervical myoma or anterior vaginal wall mass (Fig. 1). She was advised for a laparoscopic myomectomy. Laparoscopy showed normal uterus and adnexa, the uterovesical fold of

the peritoneum was opened and the bladder was dissected to explore the cervix for myoma. There was no evidence of cervical myoma. Hysteroscopy also showed a normal cervical canal and uterine cavity. Cystoscopy revealed a distorted bladder wall but intact mucosa. A decision for vaginal excision of the mass was taken. A transverse incision was made on the vagina and the mass was exposed. The mass was excised completely although enucleation was difficult (Fig. 2). Urinary catheter showed blood staining and bladder injury was suspected. Cystoscopy showed a bladder injury of 1 cm between the left ureteric orifice and the internal urethral sphincter. Both ureteric orifices showed clear urine reflux. Bladder defect was closed vaginally in two layers with 2-0 Vicryl. The patient was discharged after 48 h with Foley's catheter with antibiotics for 10 days. Foley's catheter was removed on the tenth post-operative day. She recovered completely and resumed normal activities. Grossly, the excised mass was 7×5.3×3 cm, white, and vaguely trabeculated on cut surface. Histopathology showed long interwoven fascicles of fairly uniform spindle-shaped cells with uniform nuclei (Fig. 3). No significant mitoses were seen. Immunohistochemistry was also suggestive of leiomyoma arising from the bladder wall.

## Discussion

Leiomyomas of the urinary bladder are rare mesenchymal tumors accounting for less than 0.04–1.5% of bladder tumors [2]. Approximately 200 cases have been described in the literature. Although bladder leiomyoma was believed to occur in all age groups and affect both sexes equally, recent literature suggested a predominance of women in the third through sixth decades of age [3]. Our patient was young compared to the above observation.

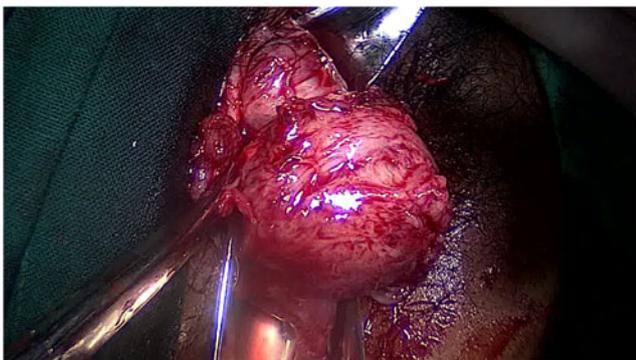
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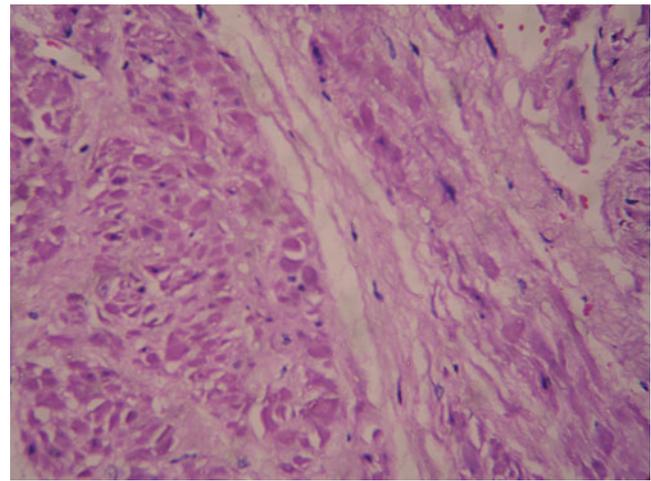
**Fig. 1** Transabdominal scan showing normal uterus with well-defined mass of 5.1 cm (arrow) close to cervix towards the anterior vaginal wall

In a review by Goluboff et al. of 37 collected cases in the English literature between 1970 and 1993, 49% of patients had obstructive symptoms, 38% irritative symptoms, 13% flank pain, and 11% hematuria. Approximately 19% of patients were asymptomatic on discovery of the leiomyoma. The site and dimensions of the tumor determine the symptoms, surgical approach, and prognosis. Common symptoms are related to voiding. These include dysuria, frequency, or hesitancy in urination, dribbling, and haematuria [4]. Cervical and vaginal myomas can also produce pressure symptoms on the bladder [5]. Although our patient presented with dysuria and urgency, we attributed this symptom to be a pressure effect of myoma rather than a bladder tumor.

The most common finding of a bladder leiomyoma is a pelvic mass on clinical examination. Ultrasonography may be one of the best imaging approaches in the diagnosis of bladder leiomyomas [6]. A smooth, homogeneous, solid mass is usually demonstrated, although partially cystic-appearing leiomyomas have been reported [7]. Radiological evaluation of bladder lesions has been nonspecific. Sonography, as



**Fig. 2** Vaginal excision of the mass



**Fig. 3** Hematoxylin–eosin stain showing spindle cell tumor of bladder

compared to computed tomography, was able to document the solid nature of the tumor and its submucosal location and determined the site of origin and exact relationship to adjacent organs [6]. On transabdominal sonography, although the pelvic mass was not arising from the uterus, we suspected it to be a myoma arising from the cervix or vagina.

Since the myoma was distorting the bladder and close to the cervix, we thought that laparoscopic approach would be more logical. Since laparoscopy/hysteroscopy could not identify the mass, a vaginal route was chosen. A Mayo clinic study of 23 patients with anterior wall vaginal masses had an abdominal approach in six patients and transvaginal excision was accomplished in ten of the 23 patients (45%) who underwent surgery [8]. A mass readily palpated through the vagina and resulting in symptoms from its subvesical and suburethral location should be surgically approached through the vagina [8]. Although cystoscopy showed distortion of the bladder with a normal intact mucosa which was suggestive of a bladder tumor, we could not diagnose it as the extravesical form may be more difficult to differentiate from an adnexal mass because the peritoneal separation may not be evident [9]. Bladder distortion also occurs with anterior vaginal wall leiomyomas. The bladder injury occurred during excision of the mass. It is not uncommon and planned partial cystectomy is done in similar situations [10]. The outcome will be similar if the bladder injury is diagnosed and repaired as it occurred in our case. Our case is an example for a diagnostic dilemma of masses arising between the anterior vaginal wall and posterior wall of the bladder. Many cases have been reported in literature of the presence of such masses, some either being vaginal wall leiomyomas or bladder leiomyomas [10]. Henceforth, a gynecologist needs to keep in mind the differential diagnosis of bladder tumor and plan the appropriate surgery.

## Conclusion

Due to the rarity, masses from the anterior vaginal wall and bladder are poorly understood. Leiomyomas of the bladder are rare tumors and symptoms can mimic as pressure symptom of cervical myoma or vaginal myoma and they can present to a gynecologist. Arriving at a proper evaluation and treatment is challenging as many of these masses have similar signs and symptoms as well as overlapping differential diagnosis. This case suggests that the gynecologist needs to be aware of the urological conditions when dealing with pelvic masses.

**Conflicts of interest** The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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