Bladder leiomyoma presenting as dyspareunia

Case report and literature review

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Abstract

Introduction: Leiomyoma of the bladder is a rare tumor arising from the submucosa. Most patients with bladder leiomyoma may present with urinary frequency or obstructive urinary symptoms. However, there are a few cases of bladder leiomyoma coexisting with uterine leiomyoma presenting as dyspareunia. We herein report an unusual case of coexisting bladder leiomyoma and uterine leiomyoma presenting as dyspareunia.

Case presentation: A 44-year-old Asian female presented to urologist and complained that she had experienced dyspareunia over the preceding several months. A pelvic ultrasonography revealed a mass lesion located in the trigone of urinary bladder. The mass lesion was confirmed on contrast-enhanced computed tomography (CT). The CT scan also revealed a lobulated and enlarged uterus consistent with uterine leiomyoma. Then, the biopsies were then taken with a transurethral resection (TUR) loop and these biopsies showed a benign proliferation of smooth muscle in a connective tissue stroma suggestive of bladder leiomyoma. An open local excision of bladder leiomyoma and hysteromyomectomy were performed successfully. Histological examination confirmed bladder leiomyoma coexisting with uterine leiomyoma.

Conclusion: This case highlights a rare presentation of bladder leiomyoma, dyspareunia, as the chief symptom in a patient who had coexisting uterine leiomyoma. Bladder leiomyomas coexisting with uterine leiomyomas are rare and can present with a wide spectrum of complaints including without symptoms, irritative symptoms, obstructive symptoms, or even dyspareunia.

Abbreviations:

CT = computed tomography, MRI = magnetic resonance imaging, TUR = transurethral resection.

Keywords: dyspareunia, leiomyoma, leiomyoma of the bladder, uterine leiomyoma

1. Introduction

Female dyspareunia, defined as persistent or recurrent pain associated with penile—vaginal intercourse, can occur for a variety of reasons—ranging from physiological problems to psychological factors.\(^1\) A medical evaluation for dyspareunia usually consists of a thorough medical history, a pelvic exam, or other tests such as pelvic ultrasonography. Leiomyoma is uncommon benign tumor of bladder.\(^2\) Although bladder tumors is one of the most common malignancies worldwide,\(^3\) leiomyoma accounts only for <1% of all the urinary bladder tumors.\(^4\) Leiomyoma of bladder usually presents with obstructive voiding symptoms or irritative urinary symptoms. However, to our knowledge only, several previous cases had involved dyspareunia symptoms.\(^5\)\(^6\) We herein report a rare case of both bladder leiomyoma and uterine leiomyoma coexisting in a female whose chief complaint was dyspareunia.

2. Case presentation

A 44-year-old Asian female, gravida 2, para 2, with no significant previous medical history, presented to urologist and complained that she had experienced dyspareunia over the preceding several months. The nature of the pain was a deep pain, which she experienced every time she attempted intercourse. She did not have vaginal discharge. No psychological factors can be found for her painful intercourse. She denied any episodes of gross hematuria, fever, chills, or irritative urinary symptoms. A pelvic bimanual examination was difficult to perform because of the patient’s discomfort. No significant findings were detected on physical examination. Urinary tract infection was excluded as results of urinalysis and urine cytology were normal. The
results of other laboratory tests including renal function, liver function, complete blood cell count, and coagulation function were also within the normal range.

A pelvic ultrasonography revealed a 6.6 × 5.8 cm² mass lesion located in the trigone of urinary bladder. The mass lesion was confirmed on contrast-enhanced CT to be an enhanced 7.2 × 6.1 cm² soft tissue mass in the right paravaginal area. CT scan also revealed a lobulated and enlarged uterus consistent with uterine leiomyoma (Fig. 1). There was no evidence of thickening of the urinary bladder wall and locoregional invasion. Flexible office cystoscopy was attempted and revealed a rounded, smooth, submucosal mass arising from the trigone of urinary bladder distorting the medial margin of both ureteric orifices. Double J stents could be passed with ease bilaterally. Retrograde pyelogram demonstrated no filling defects or dilation of the both ureters. The biopsies taken with a transurethral resection (TUR) loop showed a benign proliferation of smooth muscle in a connective tissue stroma suggestive of leiomyoma. After a careful discussion about the 2 options of further treatment, open surgical excision, and repeated TUR, the patient opted to receive open surgical excision. Then, an open local excision of this well-encapsulated tumor was performed, in which a 7.3 × 6.1 × 5.8 cm³ grayish-white tumor was removed (Fig. 2) and hysteromyoectomy was also performed at the same time. Histological examination revealed intersecting fascicles of smooth muscle (Figs 3, 4) without any evidence of malignant change and thus diagnosis of leiomyoma was confirmed. The postoperative period was uneventful, and the patient was discharged on postoperative day 10. The urinary catheter was removed after 2 weeks. Over an 8-month follow-up period, the patient made no complaint of dyspareunia and no bladder leiomyoma was detected by pelvic ultrasonography and cystoscopic examinations.

3. Discussion

Leiomyoma is a benign smooth muscle neoplasm or tumor that can occur in any organ, but it is most often seen in the uterus.\(^{[8,9]}\) However, leiomyomas of the bladder are rare benign tumors.\(^{[10-12]}\) The patient in this case had concomitant bladder leiomyoma and uterine leiomyoma which made the presentation even more uncommon. To our knowledge, only limited numbers of this kind of reports have been published.\(^{[13]}\) The coexistence of these tumors in our case may have been merely coincidental, as their etiologic relationship is uncertain. It has recently been reported that uterine leiomyoma may be the similar disease as...
endometriosis. Further studies are required to provide answers to etiologic relationship between bladder and uterine leiomyomas.

Leiomyoma of the bladder is the most common mesenchymal tumor in the bladder. It was first reported by Virchow in 1931. There are about 200 cases that have been reported in the medical literature. A study showed that leiomyoma of the bladder was female preponderance (76%), and median age was 44 in 37 patients. The precise etiology of this epidemiologic observation remains a mystery. However, it has been reported that estrogen may associate with the growth of leiomyomas. The immunohistochemical and pathologic findings of bladder leiomyomas are similar to uterine leiomyomas. It was suggested that estrogen may influence the development of bladder leiomyoma. In addition, estrogen receptors have been identified in urinary leiomyomas. In the present case, leiomyoma appeared in a premenopausal woman, which was consistent with what was reported in the prior clinical literature. It was suggested that estrogen may have a certain relationship with bladder leiomyomas. Further work is needed to clarify the concrete mechanism that can lead to the initiation of bladder leiomyoma.

There are similar morphopathological changes between bladder leiomyomas and uterine leiomyomas. Microscopically, bladder leiomyomas are composed of interlocking and whirling bundles of smooth muscle cells. The nuclei of smooth muscle cells are oval to cigar-shaped, blunt-ended, centrally located and showing no nuclear atypia or mitotic activity. Bladder leiomyoma usually have fewer than 2 mitotic figures per high power field. Grossly, bladder leiomyoma can be intravesical, intramural, or extravesical. Of these 3 types of bladder leiomyomas, the intravesical forms are most likely to cause irritation, obstruction, or bleeding symptoms because they protrude into the lumen of the bladder.

CT, MRI, and ultrasonography are regularly used to make the diagnosis of leiomyoma of the urinary bladder. Both CT and MRI can be used to assess the site, dimensions, and any extension of the tumor. Real-time imaging and transvaginal ultrasonography can give accurate information about localization of the mass and its relation to surrounding structures. However, none of them is a confirmatory method. The definitive diagnosis of leiomyoma of the urinary bladder and differentiation from leiomyosarcoma requires histopathological examination. Cystoscopy with biopsy of the mass will usually yield a definitive diagnosis.

Goluboff et al reviewed all related literature and indicated that the most common symptoms for urinary leiomyoma were obstructive voiding symptoms (49%). Of the remaining patients, 38% presented with irritative symptoms, 11% with hematuria, and 19% were asymptomatic. However, Knoll et al reviewed the literature and indicated that the most frequent clinical manifestations were irritative voiding symptoms. It was suggested that leiomyoma of the bladder are symptomatic for 2 reasons: anatomic location and size. Specifically, tumors that are present at ureteral openings or near the bladder neck tend to lead to obstructive symptoms, whereas larger tumors are more likely to cause irritative symptoms. In the present case, the tumors were located in the trigone of urinary bladder near the bladder neck and the chief complaint of our patient was dyspareunia. It was unusual and suggests that patients with dyspareunia may also require a careful urological evaluation.

Finally, urologist and pathologists should be aware of the possibility that dyspareunia of unknown etiology may be resulted from the coexisting bladder and uterine leiomyomas.

4. Conclusions

In summary, this case study describes an unusual presentation of bladder leiomyoma, dyspareunia, as the chief symptom in a patient who also had uterine leiomyoma. Traditionally, the etiology of dyspareunia may include physical causes and psychological issues. Sometimes, it can be difficult for us to tell whether psychological factors or organic factors are associated with dyspareunia. However, it is necessary to take into account the possibility that the coexisting bladder and uterine leiomyomas may have an unusual clinical manifestation such as dyspareunia.
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