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LEIOMYOMA OF THE URINARY BLADDER: CASE REPORT

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SUMMARY

A case of leiomyoma of urinary bladder, a rare benign tumour, is presented. The patient was a 42 year old female who presented with dysuria and frequency of micturition. The radiological features, diagnosis and management are discussed and the literature on this subject is briefly reviewed.

INTRODUCTION

Leiomyomas of the urinary bladder are rare tumours that can occur in all age groups and appear to affect females more than males. They may or may not be symptomatic. We report a symptomatic case and briefly review the literature.

CASE REPORT

A 42-year-old woman presented with a history of progressive difficulty in passing urine and frequency of micturition for three months. She denied a history of haematuria. General physical examination was essentially normal. Her urine culture was sterile. Complete blood count and blood chemistry were within normal limits. Ultrasonograpy (US) of KUB and pelvis showed a well defined solid and echogenic intraluminal mass 4.5 x 5cm arising from the base of the bladder (Figure 1). Intravenous urography revealed fullness of the pelvicaliceal systems, a dilated left ureter and a rounded filling defect in the urinary bladder (Figure 2). Computed Tomography (CT) confirmed the urographic and sonographic findings and showed normal pelvic fat planes and no lymphadenopathy (Figure 3).

Figure 1

Pelvic sonography: The leiomyoma appears solid, echogenic, well defined with a short pedicle attached to the bladder base

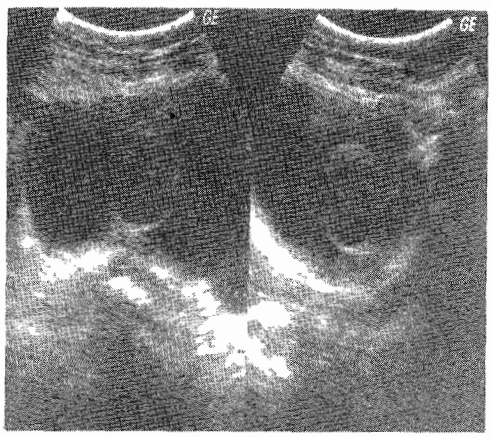


Figure 2

30 minutes film of an intravenous urogram showing a leiomyoma as a well-defined filling defect in the urinary bladder. The calyces show fullness and the ureters are diluted

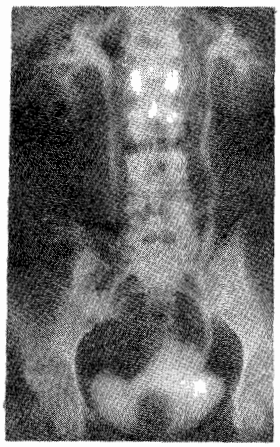
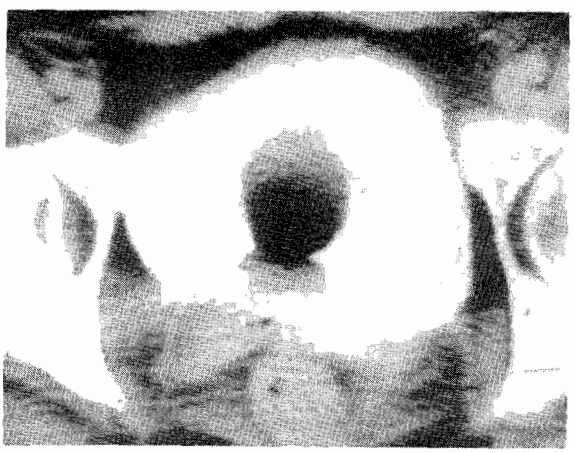


Figure 3

CT Pelvis. Plain axial image at the level of the hip joints. The tumour is shown as an intraluminal hypodense filling defect



Bimanual examination under-general anaesthesia revealed a palpable mass inside the bladder without induration or hardness in the bladder. Cystoscopy showed a pedunculated mass arising from the trigone in the midline and encroaching on the posterior aspect of the bladder neck. The mass was covered with intact healthy mucosa. The mass was resected transurethrally . A Foley's catheter was kept in the bladder for three days and the patient was discharged on the fourth postoperative day. Histopathological examination of the resected specimen revealed leiomyoma. There was no evidence of bladder wall invasion. She remains well with no sign of recurrence 18 months after the mass was resected.

DISCUSSION

Leiomyomas of the urinary bladder are rare benign mesenchymal tumours accounting for less than 0.04-0.5% of all bladder tumours(1-4). In a series of 262 urinary bladder tumours reported by Scholl at the Mayo Clinic(5), there was only one leiomyoma. Scott and Mackay(6) found no leiomyomas in their series of 622 bladder neoplasms and Blasco *et. al.* reported only three in their series of 700 bladder tumours(4).

Leiomyomas of the bladder have been reported in all age groups(1) but there has been controversy about its sex incidence. Initial reports suggested an equal incidence in males and females(1). In 37 patients reviewed by Goluboff *et. al.*(7), 26 were female and nine were male. The cause of these rare vesical tumours is speculative. Causative theories suggested include inflammatory, endocrine, the result of perivascular metaplasia, or metaplasia of embryonic remnants(8). Leiomyomas of the bladder are pathologically similar to uterine leiomyomas with fascicles of smooth muscle fibers separated by connective tissue, and they may coexist in the same patient. Cornella *et. al.*(9) found concomitant uterine leiomyomas in 39% of 23 patients with bladder leiomyoma. Our patient had no associated uterine leiomyoma. Bladder leiomyomas may be endovesical (63%) as in our case, extravesical (30%) or intramural (7%)(1,10). The anatomic difference between an extravesical bladder leiomyoma and a urethral leiomyoma may be indistinct and not pathologically separable(9). Although frequently asymptomatic(11), they may give rise to obstructive, voiding and irritative symptoms depending on their location, size and mobility(7,12), or to haematuria(7). There has been an isolated case report of a bladder leiomyoma causing obstructive renal failure(13). Bladder leiomyomas vary in size from a few millimeters to as much as 30 cm in diameter(9,14,15) and range from a few grams in weight to as much 9 kg (9,16). All reported cases of bladder leiomyomas have followed a benign pathological course(1,3,11). Recurrence, treated by re-excision has been reported only once(9,17).

Diagnosis of leiomyoma of the bladder is based on the clinical history and physical, imaging, cystoscopic and histopathological findings. In a review of 37 collected cases in the English literature between 1970-1973 by Goluboff *et. al.*(7), 49% of patients had obstructive symptoms, 38% irritative symptoms, 13% flank pain and 11 % haematuria. Fifty seven percent had a mass on bimanual examination. As in our case, the tumour appears as a well defined filling defect in the urinary bladder on urography(7,9). Cases with obstructive voiding symptoms may show dilated pelvicaliceal systems and ureters. Pelvic US is superior to IVU and CT in the diagnosis of these tumours. It demonstrates the solid nature of the tumour, its site, its relationship to adjacent structures and its mobility(12,17,18).

On CT, leiomyomas appear as solid filling defect. Their location (endovesical, intramural or extravesical) can be determined and invasion or adenopathy excluded(7). MRI was thought to be superior to other imaging modalities in two patients(19,20). It usually shows the tumour to be of intermediate signal intensity on T1 sequence, and of mixed high and low signal intensities on T2 weighted sequences(7,20). Enhancement with gadolinium has been reported(21). Extravesical involvement is easily determined by MRI(7).

After preoperative evaluation based on careful physical and radiological investigations, symptomatic bladder leiomyomas are treated by excision, either by transurethral or by open resection. In our case, the tumour was successfully removed transurethrally with complete relief of the patient's symptoms. Although the literature advices that leiomyomas should be routinely removed, Cornella *et. al.*(9) are of the opinion, as in cases of uterine leiomyomas which are not removed in asymptomatic patients, that it may be in the patients' best interest to excise only those non-incidental leiomyomas that are symptomatic or result in urinary obstruction. In this way, the morbidity and complications may be decreased or avoided. A follow up of the patients is however advised.

In conclusion leiomyomas of the urinary bladder are rare benign mesenchymal tumours that may or may not be symptomatic. US, CT and MRI play a significant role in their diagnosis and in determining their size, position and relationship to the bladder wall and adjacent organs. Symptomatic tumours like the one described in this case report, are treated by transurethral or open resection. Prognosis is excellent.

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