CLINICAL CASE

Bladder leiomyoma: a case report


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Abstract Through the report of the following clinical case of bladder leiomyoma and the literature review, we were able to broaden our knowledge in relation to the diagnosis and treatment of this pathology: it is an infrequent disease, representing less than 1% of bladder neoplasias, with a greater incidence in women in their fifth decade of life. It is most commonly intravesical and its etiology and pathogenesis are still uncertain. It can clinically manifest with irritative urinary symptomatology, but the majority of cases are asymptomatic and thus diagnosed incidentally. Histopathologic and immunohistochemistry studies are essential for making the definitive diagnosis.

A 34-year-old woman had a histopathologic diagnosis of urothelial carcinoma in situ and came to our center for a second medical opinion. A discrepancy was observed between the imaging studies and the histopathologic report, and after reviewing the slides, bladder leiomyoma was determined.

This case underlines the utmost importance of the correlation between the definitive histopathologic diagnosis and the imaging studies for offering the patient the best therapeutic option. Due to the extremely rare presentation of bladder leiomyoma, its clinical suspicion and diagnosis continue to be a challenge for both the urologist and the pathologist.

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Leiomioma vesical. Reporte de un caso

Resumen Se realiza la siguiente revisión de caso clínico de leiomioma vesical y literatura reportada, de manera que logremos ampliar nuestro conocimiento sobre diagnóstico y tratamiento,
Bladder leiomyoma. A case report

Promoción de la salud

Introduction

Among the benign neoplasias of the bladder, leiomyoma, despite its rarity, is considered the most common. It represents less than 1% of all bladder neoplasias, and unlike the epithelial origin of the majority of the bladder tumors, it has a mesenchymal origin (smooth muscle), with important vascularization, similar to uterine leiomyomas. A greater incidence has been observed in women between the third and sixth decades of life, with a mean age of 44 years. Its location can be intravesical, extravesical, or intramural, and the most common is intravesical. An effort has been made to describe its clinical symptoms and treatment in relation to its location, and from this perspective, intravesical leiomyoma presents more frequently, accompanied by irritative symptomatology, whereas intramural leiomyoma tends to be asymptomatic and is diagnosed incidentally.

Its etiology and pathogenesis are still uncertain, but different hypotheses include: chromosomal abnormalities, infection of the bladder smooth muscle, perivascular inflammation, and hormonal influence based on case reports during pregnancy, as well as the presence of estrogen receptors demonstrated through immunohistochemistry. The majority of cases are diagnosed incidentally and treatment, especially for symptomatic leiomyomas, is surgical resection.

Case presentation

A 34-year-old woman came to our center for a second medical opinion in relation to a bladder polyp reported in a control ultrasound during pregnancy (fig. 1). Once her pregnancy was concluded (cesarean section, March 22, 2014) a noncontrast and IV contrast abdominopelvic computed tomography scan had been ordered (figs. 2 and 3) that revealed a polypoid tumor with a wide base measuring 2 cm in diameter and a well-defined contour, dependent on the bladder roof, to the left of the midline.

Transurethral resection (TUR) of the tumor was carried out June 4, 2014 and the histopathologic study of the tissue reported urothelial carcinoma in situ. Immunohistochemistry tests were not performed and the continuation of intravesical BCG management was proposed.

At the time of our first examination of the patient, 2 weeks after TUR, she was asymptomatic, stating no pre-existing symptoms during her routine gynecologic and obstetric check-ups or at the time of bladder tumor diagnosis. She had previously received hormonal replacement therapy as infertility treatment, resulting in this last pregnancy. We began to review the computed tomography images and the pathology report, keeping in mind the patient’s symptom presentation (asymptomatic, no hematuria or pain). We found that the tomographic image did not correspond to an in situ stage of urothelial carcinoma, but we observed a well-delineated, polypoid tumor (figs. 1-3). We requested a review of the slides by the Pathology Department, which reported compact nodular fascicular proliferation of the smooth muscle with no atypia or mitotic activity, suggestive of a benign smooth muscle.
tumor. Biopsy of the bladder dome reported flat urothelial hyperplasia. The urothelium was composed of 7 to 9 layers of cells, with no atypia, and superficial “umbrella” cells. This was done through immunohistochemistry with CK-Z0, which only marks superficial cells. It was striking that under the hyperplastic urothelium there was fascicular and nodular proliferation and smooth muscle cells that expressed both actin and desmin, with low Ki67 expression, suggestive of leiomyoma (fig. 4 a-d).

Finally, given that the tumor had already been resected endoscopically, only trimestral surveillance was proposed.

Figure 2 Noncontrast abdominopelvic tomography scan: polypoid lesion at the bladder roof 2 cm in diameter with no thickening of the bladder wall.

Figure 3 Intravenous contrast abdominopelvic tomography scan showing the bladder filling defect.

Figure 4 a) Intramural bladder leiomyoma. Panoramic view (hematoxylin-eosin, x40). b) Urothelial mucosa and submucosa with no alterations (hematoxylin-eosin, x100). c) Smooth muscle segments with characteristic aspect (hematoxylin-eosin, x200). d) Greater magnification showing scant hyperchromatic nuclei with no evidence of hypercellularity, mitosis, necrosis, or nuclear pleomorphism (hematoxylin-eosin, x400).
Discussion

Even though bladder leiomyoma is considered the most frequent benign neoplasia in this organ, it is an extremely rare entity. Therefore, its diagnosis and its intentional search are still a challenge for the urologist and the pathologist. There are currently about 250 case reports in the literature, having first been described in 1870 by Jackson.5

This neoplasia has been shown to have a certain predilection for the female sex, associated with the presence of estrogen receptors demonstrated through immunohistochemistry.3-4

The present clinical case reflects the lack of familiarity with the images viewed under the microscope, which unquestionably corresponded to bladder leiomyoma and not urothelial carcinoma; the urothelial mucosa had normal characteristics with no presence of necrosis, polymorphism, or mitosis.

Diagnosis is usually incidental through computed axial tomography, showing a solid homogeneous image with well-defined margins, just as was observed in the present case. Magnetic resonance is more useful because it can identify the submucosal origin and the preserved muscle layer.6 Nevertheless, definitive diagnosis continues to be made through histopathologic study7-11 and positive immunohistochemistry for muscle tissue (desmin, actin, act HHF-35).

The approach is based on tumor size, location, and the involvement of anatomic structures such as the sphincter or ureteral meatuses.12 Transurethral resection or electrofulguration have been considered treatments of choice in small leiomyomas and even though active surveillance has also been proposed, surgical resection is preferred. Partial resection is reserved for larger tumors, whether through laparoscopic, robotic-assisted, or open procedures.7,13

Conclusions

Bladder leiomyoma is an uncommon, benign neoplasia. There are different theories explaining its etiology, but it is still an uncertain area. Definitive diagnosis is made through histopathologic study and management can be conservative through surveillance; endoscopic resection is carried out in symptomatic patients and partial resection in cases of larger tumors.

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Conflict of interest

The authors declare that there is no conflict of interest.

References