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BLADDER LEIOMYOMA: CASE REPORT

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Summary.- **OBJECTIVE:** Leiomyoma is a benign lesion which represents 0,04-0,5% of bladder tumors. It is more common in females and its peak incidence is between 4th and 5th decades. Surgery is the treatment of choice and adequate results have been previously reported.

METHODS: 38 years old male patient who consulted for chronic pelvic pain syndrome. CT scan showed a 2cm diameter exophytic lesion at the anterior left lateral bladder wall, which protruded into the perivesical fat. We performed a laparoscopic partial cystectomy locating the tumor and resecting it with simultaneous cystoscopic control, obtaining negative margins. The opera-

tive time was 70 minutes with an intraoperative blood loss of 50 ml. Postoperative period was uneventful. Final pathology reported: Bladder wall leiomyoma, without mitosis or atypia. Immunohistochemistry was positive for Actine and Vimentine establishing diagnosis. Cd 117 (c-kit) was negative and ruled out a Gastrointestinal Stromal Tumor.

CONCLUSIONS: Leiomyoma is bladder's most common benign non epithelial tumor. It represents 35-46% of these lesions with a 2:5 male/female ratio. It originates from the smooth muscle bundles and at the urinary tract the most common localizations are kidney and bladder. Clinical presentation depends on tumor size and localization. Ultrasound is the most useful diagnostic tool and the pathological diagnosis is mandatory. Surgery is the treatment of choice and technique depends on tumor size and localization. The laparoscopic approach seems to be an effective alternative in this group of tumors. Prognosis is good and recurrence is rare.

Keywords: Laparoscopy. Bladder leiomyoma. Partial cystectomy.

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Resumen.- **OBJETIVO:** El leiomioma es una lesión benigna que representa entre el 0,04-0,5% de los tumores vesicales no editoriales. Es más frecuente en mujeres y su pico de incidencia está entre la 4ª y 5ª décadas. La cirugía es el tratamiento de elección, habiéndose comunicado previamente resultados adecuados.

MÉTODOS: Paciente varón de 38 años de edad que consultó por síndrome de dolor pélvico crónico. La tomografía axial computarizada mostraba una lesión exofítica de 2 cm. de diámetro en la parte anterior de

la pared vesical lateral izquierda, que protruía en la grasa perivesical. Realizamos una cistectomía parcial laparoscópica con localización y resección del tumor bajo control con cistoscopia, obteniendo márgenes negativos. El tiempo operatorio fue de 70 minutos con un sangrado estimado de 50 ml. El postoperatorio curso sin complicaciones. El estudio anatomopatológico final informó: leiomioma de la pared vesical sin mitosis ni atipias. El estudio inmunohistoquímico fue positivo para actina y vimentina, estableciendo el diagnóstico. El Cd 117(cKit) fue negativo y descartó un tumor estromal gastrointestinal.

CONCLUSIONES: El leiomioma es el tumor benigno no epitelial más frecuente en la vejiga. Representa entre 35-46% de estas lesiones con una revelación hombre/mujer de 2:5. Se origina a partir de los fascículos de músculo liso y en el aparato urinario las localizaciones más frecuentes son riñón y vejiga. La presentación clínica depende del tamaño y la localización del tumor. La ecografía es la prueba diagnóstica más útil y el diagnóstico anatomopatológico es obligatorio. La cirugía es el tratamiento de elección, dependiendo la técnica del tamaño y la localización del tumor. El abordaje laparoscópico parece ser una alternativa eficaz en este grupo de tumores. El pronóstico es bueno y la recidiva rara.

Palabras clave: Laparoscopia. Leiomioma vesical. Cistectomía parcial.

INTRODUCTION

Leiomyoma is a benign non epithelial lesion which represents 0,04-0,5% of bladder tumors. It is more common in females and its peak incidence is between the 4th and 5th decades of life. It originates from the smooth muscle bundles and therefore it can be found at any organ with this kind of tissue. In the urinary tract the most frequent localizations are kidney and bladder. In the latter, these lesions could be located at any level intramurally. Surgery is the standard treatment and the surgical approach depends on tumor size and localization at the bladder wall. Prognosis is good due to the benign behavior of these lesions. We present the case of a subserosal bladder leiomyoma surgically treated by a combined laparoscopic transperitoneal approach with simultaneous cystoscopic control.

CASE REPORT

Previously healthy 38 years old male patient, who consulted for a chronic pelvic pain syndrome. CT Scan showed a 2 cm diameter xophitic lesion at the

left anterolateral bladder wall, which protruded to the perivesical fat. (Figure 1).

We decided to perform a laparoscopic partial cystectomy. Using the modified lithotomy position and after the creation of pneumoperitoneum with the Veress needle we proceeded with trocar positioning. Using a 10mm port at the umbilicus level for the endocamera another 10 mm in the left lower quadrant and two 5 mm, one in the right lower quadrant and one at the umbilicus level in a pararectal position (Figure 2), we proceeded to dissect the Retzius space to free the bladder with the Harmonic scalpel®. Once located the lesion protruding from the left anterolateral wall, we proceeded to the resection with aid of simultaneous cystoscopic view, obtaining a wide macroscopic negative margin. Specimen retrieval was accomplished with an Endobag® device and sent to frozen section, which concluded the presence of a benign fusocellular tumor. Bladder closure was done with intracorporeal suture in a two layer fashion with a running 3-0 and 0 vicryl suture. An Hemovac drainage device and a 20 fr urethral catheter were placed at the end of the surgery. The operative room time was 70 minutes with intraoperative blood loss of 50 ml.

Postoperative period was uneventful, retrieving the urethral catheter at the 5th postoperative day. Final pathological report concluded: Bladder wall leiomyoma, without mitosis or atypia. Immunohistochemistry was positive for Actine and Vimentine establishing diagnosis. Cd 117 (c-kit) was negative and ruled out a Gastrointestinal Stromal Tumor (Figure 3).



FIGURE 1. Computed tomography showed a 2 cm diameter exofitotic pediculated lesion at the left anterolateral bladder wall, which protruded to the perivesical fat.

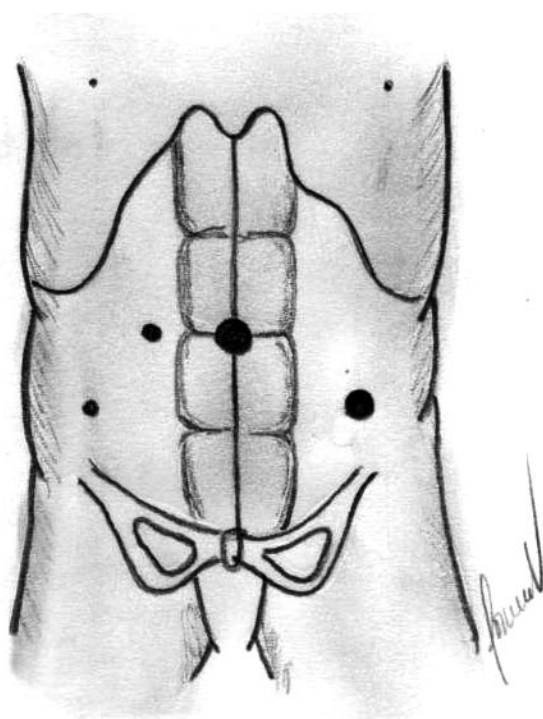


FIGURE 2. Port positioning: A 10 mm port at the umbilicus level for the endocamera. 10 mm port in the left lower quadrant and two 5 mm ports, one in the right lower quadrant and one at the umbilicus level in a pararectal position

DISCUSSION

Benign non epithelial lesions represent 1-5% of bladder tumors and Leiomyoma is the most common (1 - 3). It represents 35-46% of this type of neoplasms and corresponds to 0,04-0,5% of the bladder lesions in general, with no more than 300 cases reported in the literature (2 - 5). Leiomyoma has its origin from the smooth muscle bundles and contains connective tissue surrounding it. Therefore it can arise in any organ which contains this tissue being the most common localizations skin, womb, retroperitoneum, genitourinary and gastrointestinal tract (1, 4, 6). In the genitourinary tract it is most frequent in the kidney and bladder, specially at the trigone and bladder neck (4, 6, 7). It is most common in females in the fertile age, with a female/male ratio 5/2 and its peak incidence between 4th and 5th decades of life (1, 4 - 6).

The genesis of this lesion remains a mystery; however, there are a bunch of theories that try to explain this question (4, 8):



FIGURE 3. Macroscopic appearance of the surgical specimen.

- Blum's irritative-inflammatory theory, which suggests the presence of a chronic inflammatory stimulus over the smooth muscle.
- Piegel's dysontogenic theory which suggests its origin from embryonic rests of Muller and Wolff ducts.
- Vascular-irritative theory
- Lipschutz's theory, which suggests its origin secondary to an endocrine disorder with estrogens and progesterone having a primary role. This theory supports its base in the peak incidence in females in the fertile period and the presence of steroidal ovarian receptors on the tumor (9).

Macroscopically these are round or oval tumors with an elastic consistency and irregular surface. The size is variable with reports of tumors as big as 30cm, specially in the extravesical localization (6, 7).

In bladder lesions, the localization is submucosal in 63%, and at cystoscopy we can see a sessile or pediculated lesion covered by normal mucosa. The submucosal localization represents 11-30% of the cases, having a characteristic pedicle that bounds it with the bladder. The intramural localization is the less frequent and represents 7-17% of the cases, founding a well encapsulated tumor in the bladder wall (2, 3, 6) (Table I).

Leiomyomas can remain asymptomatic for many years, reaching considerable size, unless they affect the normal function of the lower urinary tract, (6). Symptoms depend on tumor size and lo-

TABLE I. LOCALIZATION AT THE BLADDER WALL.

	Silva-Ramos y cols. (1)	Ojea Calvo y cols. (2)	Jiménez Aristu y cols. (6)	Golobuff et al. (3)
Submucosal	51,1%	63%	63%	66%
Intramural	30%	17%	7%	3%
Subserosal	16,7%	30%	30%	11%

calization (1, 7, 10). Endoluminal tumors are more symptomatic, presenting with urinary tract infections, hematuria, irritative symptoms, specially the ones at the bladder neck, or obstructive symptoms, causing even acute bladder outlet obstruction secondary to a valve effect (1 - 3, 6, 7) (Table II). Intramural and subserosal tumors are in general asymptomatic and the diagnosis is incidental. When the size is considerable it can appear as a pelvic mass or give symptoms secondary to the compression of adjacent structures (6, 7).

At cystoscopy submucosal tumors appear as a sessile or pediculated lesion covered by normal mucosa, but it could be normal if the tumor is intramural or subserosal. The same situation can occur in the Intravenous Pielography (IVP), showing a filling defect in the bladder wall if the lesion is submucosal. Ultrasound (US) allows to define the solid or cystic nature of the lesion, showing in these cases a solid smooth wall lesion with homogeneous echoes. Also allows to define the limits between the tumor and adjacent structures, showing us its localization in the bladder

TABLE II. PRESENTATION SYMPTOMS.

	Silva-Ramos y cols. (1)	Golobuff et al. (3)
Irritative symptoms	50%	38%
Obstructive symptoms	24,4%	49%
Hematuria	20%	11%
Palpable mass	20%	57%
Ureteral obstruction	6,7%	13,5%
Asymptomatic	26,7%	19%

wall. In the case of big tumors we also can see cystic degeneration process. Transvaginal US is an excellent option in female posterior bladder wall tumors in a subserosal localization (3 - 6).

Computed tomography gives us information about the size, position, and relationship between the tumor and bladder wall, but when comparing it with US and Magnetic Resonance Imaging (MRI) its accuracy to define the relationship between the tumor and the bladder wall is inferior (1, 7).

Therefore US is considered the most useful imaging diagnostic tool for diagnosis of these tumors (1, 4).

MRI shows leiomyoma with an intermediate signal on T1 weighted images, with good contrast between the tumor and the urine which has a low signal intensity. T2 weighted images shows high and low intensity focus with good contrast between these and the low intensity signals from the bladder wall muscle (3).

Nevertheless imaging tests add important data that suggest the benign nature of these tumors, like the presence of a well circumscribed lesion with homogeneous density, poor enhancement with contrast media and normal perivesical fat. There is no test that allows us to differentiate a leiomyoma from leiomyosarcoma, therefore pathologic diagnosis is mandatory (1, 8). Pathological analysis reveals proliferation of smooth muscle fibers with an eosinophilic cytoplasm with less than two mitotic figures per power field. They are surrounded by a variable amount of connective tissue and there is no necrosis or cellular atypia (3, 8). In a literature review by Silva-Ramos et al, 90 bladder leiomyomas were analyzed, 28 of which were biopsied before the definitive treatment. All samples obtained with a Tru-Cut needle and transurethral resection (TUR) were diagnostic, whereas the cold cup biopsy samples showed a 50% false negative. Fine needle aspiration biopsy was the less useful diagnostic tool (1).

The treatment choice depends on the tumor size and localization and relationship with the bladder wall (2, 10). Surgery is indicated because of the potential growing capacity of these tumors (6), however in cases confirmed by biopsy, conservative management is acceptable, keeping in mind that if the tumor increase in size, surgery is mandatory (3, 10).

Given the benign nature of these lesions, the surgery must be as conservative as possible. Submucosal tumors can be managed by trans urethral resection, being the size an important issue. Subserosal

and huge submucosal lesions can be managed by enucleation or with partial cystectomy. Enucleation via transvaginal approach is a good alternative in tumors close to the urethra, and palpable through the vagina, however the recurrence risk could be higher due to an incomplete resection secondary to the limitations of the operative field (1, 2, 10).

The laparoscopic approach is an excellent option for tumors located at the mobile wall of the bladder, allowing an easy and safe procedure. Bladder wall edges are simple to identify, specially if simultaneous cystoscopic control is used, which adds the option of resecting the tumor with the resectoscope (10).

Prognosis is good and recurrence is rare if the resection is adequate, therefore it seems not to be necessary to establish follow up protocols. However, Lake in 1981 described what is to date, the only case of a Leiomyoma with malignant degeneration (4, 8).

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(*of special interest, **of outstanding interest)

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