Case Reports

BLADDER LEIOMYOSARCOMA. PARTIAL CYSTECTOMY AND ADJUVANT TREATMENT.

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Summary.- OBJECTIVE: We report a new case of bladder leiomyosarcoma in an old patient.

METHODS: We present the case of a 75-year-old man with bladder leiomyosarcoma treated by partial surgery followed by adjuvant treatment.

RESULTS: Partial surgery of the primary tumor followed by concomitant chemoradiotherapy was the approach for
this patient. Nowadays, patient is free of tumor and living without any problems.

CONCLUSIONS: Bladder leiomyosarcoma is an uncommon tumor (only about 1% of all bladder cancers) treated basically with radical surgery. Nowadays, partial surgery is a usual approach in other tumors and there is a trend toward less aggressive surgery with preservation of function (such as head and neck cancer, bladder cancer).

**Keywords:** Bladder leiomyosarcoma. Partial cystectomy. Adjuvant radiotherapy.

### CASE REPORT

A 75-year-old male presented with a history of moderate chronic obstructive pulmonary disease and no other medical antecedents of interest. He was an ex-smoker of 20 packs of cigarettes/year. There were no references to alcohol abuse, environmental risk factors or familial antecedents.

The patient reported to the emergency Service with urethral bleeding and urinary retention. Since urethral catheterization did not prove possible, a suprapubic catheter was placed, followed by evaluation of the case. Ultrasound revealed a large distended bladder with an apparent single diverticulum of a size similar to that of the bladder itself (over 13 cm in maximum diameter), with several wall polypoid images measuring under 2-3 cm in size both in the bladder and in the diverticulum, suggestive of a bladder neoplastic process.

In view of the ultrasound findings and urethral stenosis, an ureterotomy was performed with cystoscopy which revealed a solid calcified tumor measuring almost 7 cm in size, located on the lateral wall. Transurethral resection was performed in the same surgical intervention, leaving residual tumor.

The histopathological findings proved inconclusive; however, immunohistochemical analysis of the sample revealed epithelial marker negativity and fibroblastic marker positivity (vimentin and actin), compatible with a reactive fibroblastic proliferation or solitary fibrous tumor.

Based on these results, the decision was taken to complete surgery, opting for partial cystectomy and diverticulectomy, with the following histological findings: low-grade leiomyosarcoma (3 mitotic figures per 10 high-magnification fields), with marked cellular pleomorphism. Focal intratumor necrosis was noted, along with multiple images of isolated cell necrosis. Extensive areas with myxoid changes were observed, with intense intra- and peritumor inflammation. The full thickness of the diverticular wall was infiltrated to the peridiverticular adipose tissue, inducing a peritumor fibrous reaction. The surgical margins were disease-free.

Immunohistochemistry: The tumor cells proved positive for muscle differentiation markers (vimentin and actin), and were negative for desmin and epithelial markers (EMA and high molecular weight cytokeratins).

With the diagnosis of low-grade leiomyosarcoma with invasion of all the layers, the case was evaluated by the clinical committee, which decided to provide adjuvant therapy in view of the high risk condition of the patient. The study of disease spread was moreover completed with a chest and abdominal CAT scan, bone gammagraphy and pelvic MRI, which showed no distant spread.

### INTRODUCTION

Non-urothelial neoplasms account for less than 5% of all bladder tumors. Bladder leiomyosarcoma is an infrequent malignancy, representing less than 1% of all bladder neoplasms. Nevertheless, among the range of mesenchymal tumors, leiomyosarcoma is the most common lesion found in the bladder. The characteristics of this tumor were first described in 1950 (1). It is generally an aggressive lesion, and the literature points to radical surgery as the management of choice. The growing tendency to choose conservative surgical procedures with a view to preserving bladder function; the few data found in the literature; and the lack of large patient series make it difficult to draw firm conclusions regarding the treatment of bladder leiomyosarcoma. A review of the literature on the subject has therefore been made, particularly as refers to surgical and other alternative treatments, and a new case corresponding to an elderly patient is presented.

**Keywords:** Bladder leiomyosarcoma. Partial cystectomy. Adjuvant radiotherapy.
Locoregional radiotherapy (dosage 57 Gy) and complementary chemotherapy were provided. Chemotherapy consisted of a combination of ifosfamide and adriamycin at the usual doses, in the form of three treatment cycles. Following treatment, the patient was subjected to strict follow-up with periodic cystoscopy, urinary cytology and chest-abdominal-pelvic CAT scans. After a period of 22 months, he remains free of disease, asymptomatic, and with excellent quality of life.

**DISCUSSION**

Bladder leiomyosarcoma is an infrequent mesenchymal malignancy that is difficult to characterize. In such tumors the histological and immunohistochemical findings are important, since the literature has often reported similarities between leiomyosarcoma and an inflammatory pseudotumor – both conditions showing a similar and infiltrating growth pattern. The existence of intratumor necrosis and mitoses support the diagnosis of low-grade leiomyosarcoma. In the case of doubt between the two diagnoses, tranurethral resection is recommended, and if pathological confirmation is not obtained, more extensive resection or a partial cystectomy is advised (2). In our case the presence of intratumor necrosis and mitotic figures, together with a typical immunohistochemical pattern involving the expression of vimentin (expressed by neoplasms with a sarcomatous component) and actin (3), suggested a mesenchymal tumor. In our case desmin proved negative, in coincidence with other reports found in the literature.

Desmin expression is variable in such tumors, in the same way as in rhabdomyosarcoma, and muscle-specific actin and NSE expression is likewise variable, as reported by Perret et al. (4). The epithelial markers were found to be negative – thus supporting the diagnosis of leiomyosarcoma. Immunohistochemical study is therefore seen to be essential for diagnosing these tumors.

The management of leiomyosarcoma may differ considerably, though radical resection of the lesion is undoubtedly the treatment of reference (5). Spiess et al. (6) published a review of cases treated in their center, in which surgery was the primary treatment choice. These authors underscored the importance of resection margin status as a determinant factor for patient survival. A range of approaches can be found in the literature, including neoadjuvant chemotherapy involving a variety of regimens – mainly active chemotherapy in soft tissue sarcomas with doxorubicin – ifosfamide, gemcitabine – docetaxel, for example (7,8). Sawhney et al. (9) reported the case of a patient who showed almost complete response with a “modern” regimen of docetaxel with gemcitabine, provided on a neoadjuvant basis, followed by radical surgery.

Other described options include neoadjuvant chemoradiotherapy. Different preoperative radiotherapy doses have been used (20-50 Gy) with or without chemotherapy (10). Garcia-Torrelles et al. (11) have reported a case in which neoadjuvant chemotherapy with adriamycin and ifosfamide was administered, with a partial tumor response, followed in a later stage by radical surgery. An alternative to radical resection is feasible, provided the patient accepts the need for strict monitoring, and on the condition that there is no residual disease. If such close follow-up is not possible, radical surgery with broad margins is the treatment of choice.

In addition to insisting on the need for radical surgery, Labanaris et al. (12) advocate strict adherence to standard surgical techniques, to reduce the percentage of diseased surgical margins and incidence of locoregional relapse.

The use of radiotherapy in tumors of this kind can be considered mainly in patients with large tumors (in a way similar to soft tissue sarcomas), and in patients subjected to conservative surgery, with a view to reducing the risk of local relapse. In addition, radiotherapy could be used in a way similar to other soft tissue sarcomas, i.e., in large tumors or with affected surgical margins (13,14).

The present case is an example of the integration of new management strategies based on a multidisciplinary approach, with satisfactory results, since 20 months after treatment the patient remains free of disease. This suggests the possibility that these tumors have a better prognosis than previously believed, since there are series in the literature that report disease-free survival rates after 5 years of 62-84% (15).

**CONCLUSION**

Bladder leiomyosarcoma is an infrequent tumor in which complete surgical resection remains the management option of choice.

Of note in the present case is the use of conservative surgery, which is regarded as feasible provided the entire neoplasm is removed.

The role of neoadjuvant chemotherapy with a view to facilitating resection or a partial cystectomy should be evaluated in tumors of this kind. Chemotherapy and radiotherapy after partial surgical resection appears to be acceptable in order to reduce the risk of relapse.
REFERENCES AND RECOMMENDED READINGS
(*of special interest, **of outstanding interest)