Sarcomatoid Variant of Urothelial Carcinoma Arising from a Bladder Diverticulum

Carcinoma Urotelial com Variante Sarcomatóide em Divertículo da Bexiga

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A 63-year old man with no relevant past medical history presented with frank hematuria. There were no abnormal findings on physical evaluation. Initial blood tests revealed a PSA of 0.65 ng/mL and urine analysis showed numerous red blood cells.

An ultrasound scan with a full bladder revealed a solid mass adjacent to the left posterior bladder wall measuring 36 x 37 mm. A hyperechoic fat plan could be seen between this structure and the bladder wall in almost all the interface between these two structures, only absent on its central part.

A pelvic magnetic resonance was performed revealing a solid lesion measuring 38 x 36 x 41 mm, with lobulated contours, with moderate T2 signal intensity, heterogeneous enhancement and restricted diffusion adjacent to the left bladder wall, protruding in the perivesical fat. A small indentation was depicted in the center of the lesion extending to the bladder lumen, but no fluid was seen inside this structure. In the delayed acquisition the contrasted urine was only seen in the bladder lumen.

There was no hydronephrosis. No enlarged lymph nodes were seen.

The diagnostic hypothesis included a solid tumor completely obliterating a former bladder diverticulum due to its exophytic morphology, however a pelvic mesenchymal tumor could not also be formally excluded.

The patient underwent cystoscopy under anesthesia. A bulging on the left lateral wall of the bladder was identified and a very tight diverticular neck was found. A biopsy was performed and the pathology revealed high grade papillary urothelial carcinoma with sarcomatoid component, no muscularis propria identified.

Bladder diverticulum is a herniation of the bladder mucosa through a weak point of the detrusor muscle, as so lacking a muscle layer itself. The incidence of intradiverticular tumors are reported to be between 0.8% and 10% in most studies.[1]

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The stasis of urine, due to impaired contractility leads to chronic irritation that may lead to mucosal dysplasia followed by tumor degeneration. The main clinical presentation is painless gross hematuria for diverticular tumor.

The most common histological subtype of diverticulum tumors is urothelial carcinoma.[2,3]

Sarcomatoid urothelial carcinoma is a rare form of biphasic bladder cancer, in which a variable component of the tumor exhibits mesenchymal differentiation.[4]

Pure mesenchymal neoplasms of the urinary bladder are exceedingly rare and display great diversity. Both benign and malignant tumors can demonstrate locally aggressive growth patterns involving multiple anatomic compartments. A mesenchymal tumor should be considered in the differential diagnosis of a solid pelvic mass that appears to originate outside the pelvic organs. However, as most of these tumors are rare, it is often a diagnosis made after exclusion of other more common entities.[5]

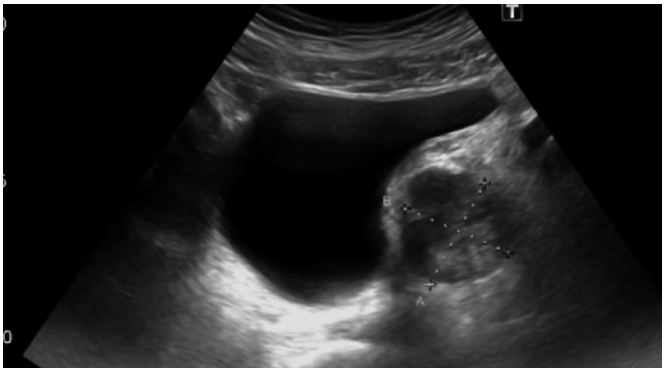

Figure 1. Pelvic ultrasound shows a solid mass adjacent to the bladder wall. An echogenic fat plane was seen between these two structures.

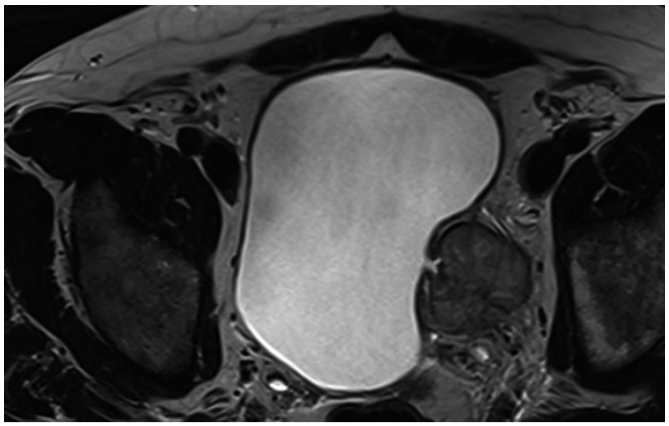

Figure 2. Axial T2-weighed magnetic imaging shows a solid lesion, with lobulated contour, intermediate T2 signal intensity and a small central indentation

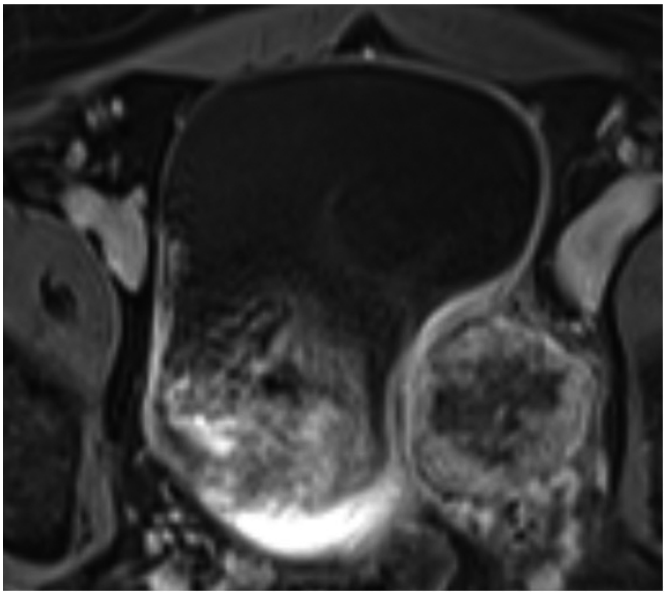

Figure 3. Axial contrast-enhanced, T1-weighted imaging shows a heterogeneous enhancing solid mass, with central hypoenhancement.

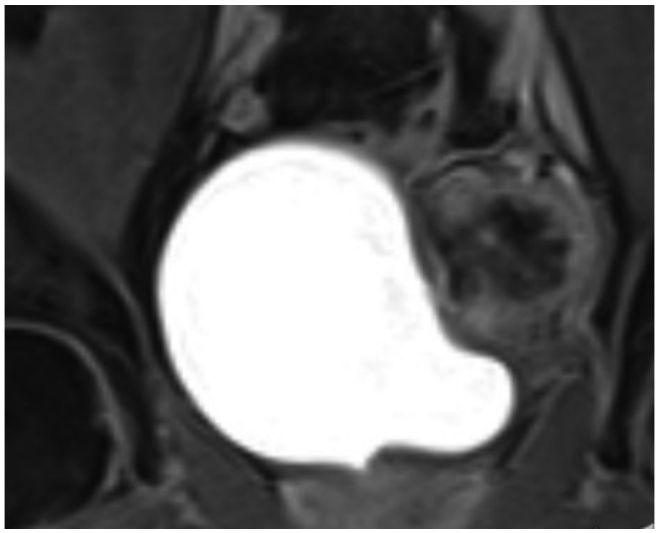

Figure 4. Delayed, contrast-enhanced, T1 weighted coronal imaging shows the bladder filled with contrasted urine without any passage to the lesion lumen or periphery.

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