Laparoscopic robot-assisted excision of a large periprostatic mass: A rare case and a challenging differential diagnosis


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Introduction & Objectives: Abdominopelvic soft tissue masses are quite uncommon findings, usually large and asymptomatic. Differential diagnosis may be challenging, since most of them lacks peculiar imaging characteristics. Surgical excision currently remains the only diagnostic and therapeutic strategy. No strong recommendations exist on the best surgical management and, in the latest years, laparoscopic Robot-assisted surgery is gaining popularity to approach pelvic diseases. In this video we report a case of robot-assisted laparoscopic excision of a large periprostatic mass of unknown origin.

Materials & Methods: A 52-year-old male underwent an abdominopelvic CT scan after acute diverticulitis and proctorrhagia in October 2020. Unexpectedly, two soft-tissue masses of 4 and 3 cm each, with mild enhancement were detected in close relationship with the left prostatic lobe and the ipsilateral seminal vesicle. Baseline PSA was 0.26 ng/mL. Pelvic MRI showed a left bilobed periprostatic mass, T2 hyperintense, with early contrast enhancement. After initial conservative approach, an MRI was repeated at 4 months and showed constant increase in size of both the lesions (61x32x88 mm and 39x25x60 mm, respectively). The prostate gland was regular (PIRADS 2). Differential diagnosis included nerve sheath tumor originating from the left prostatic bundle, pelvic mesenchymal tumor, gastrointestinal stromal tumor (GIST) of the rectum, mucinous adenocarcinoma of the prostate and female pelvic organs. A 18F-FDG PET/CT showed a moderate metabolic activity. A Transrectal biopsy of the mass resulted inconclusive. Laparoscopic robot-assisted excision of the pelvic mass was planned. This video was recorded in March 2021. In supine position, 4 robotic and 2 assistant transperitoneal trocars were placed. Using sharp and blunt dissection, firstly the anterior lobe of the bilobed left mass was dissected circumferentially and detached from the pelvic wall, the bladder, and the left prostatic lobe. A pedicle apparently arising from the pelvic wall was clipped and sectioned. The anterior lobe was then separated from the posterior mass. The same procedure was repeated for the posterior lobe.

Results: The post-operative course was uneventful. The Foley catheter was removed on post-operative day (POD) 1. The abdominal drain was removed on POD 2. The patient was discharged on POD 3. Erectile function was preserved. The histopathological examination revealed a benign fibroblastic neoplasia, with negative margin of resection.

Conclusions: Soft tissue mesenchymal tumors are rare, and the diagnosis may be challenging. The laparoscopic robot-assisted excision may be the ideal surgical approach to pelvic soft tissue mesenchymal tumors due to the minimally invasive impact and to the precision of the dissection related to reduced blood loss and optimal tissue visualization.