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Oncology

Robotic Assisted Laparoscopic Partial Cystectomy as Treatment for Pseudosarcomatous Fibromyxoid Tumor of the Bladder

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ABSTRACT

This case is of a 26 year old female evaluated for gross hematuria and suprapubic pain found to have a large bladder tumor. She subsequently underwent successful robotic assisted laparoscopic partial cystectomy. Pathology revealed pseudosarcomatous fibromyxoid tumor, an uncommon lesion that occurs most frequently among young females and must be distinguished from other malignant lesions, as treatment may differ. Partial cystectomy via robotic approach has never been described in the literature as a treatment option for this type of bladder lesion. In this case, the patient did exceptionally well upon follow-up. As such, robotic assisted laparoscopic partial cystectomy is presented a viable option for treatment of select patients with pseudosarcomatous fibromyxoid tumor.

Introduction

Pseudosarcomatous fibromyxoid tumors (PFT) are uncommon lesions that are composed of atypical myofibroblastic cells mixed within a myxoid stroma with some inflammatory cells. Typically, they most often occur in young females and must be distinguished from malignant lesions. Partial cystectomy via robotic approach has never been described in the literature as a treatment option for PFT of the bladder. We present a case of PFT located in the anterior bladder wall that was resected via robotic assisted laparoscopic partial cystectomy.

Case report

The patient is a 26 year old female who presented to the ED for persistent hematuria and suprapubic pain. Ultrasound at the time demonstrated a 2.8 cm × 3.5 cm × 3 cm round, heterogeneous, hypoechoic lesion arising from the upper anterior bladder wall and extending into the bladder lumen. Cystoscopic evaluation revealed a 3 cm pedunculated mass at the anterior bladder wall. MRI revealed a 3 cm soft tissue mass in the anterior bladder wall with no evidence of extravesical involvement or metastasis. Due to risks of incomplete resection and possible perforation based on tumor size and location, she declined a transurethral resection of the mass and elected for robotic assisted partial cystectomy.

Intraoperatively, a mass was appreciated extending anteriorly from the bladder dome. Upon entry into the bladder, the intravesical portion of the tumor was appreciated (Fig. 1). No other abnormalities were identified within the bladder. The tumor was then carefully excised in a circumferential manner with a 1 cm margin of normal bladder tissue. Patient did well post-operatively and was discharged home on post-operative day 1 with a Foley catheter in place which was removed at her 2 week follow-up following a negative cystogram.

Gross exam revealed a well-defined, polypoid, yellow, focally myxoid and hemorrhagic, submucosal nodule (2.8 × 2.5 × 2.2 cm). Microscopic evaluation, seen in Fig. 2, revealed a cellular lesion composed of spindled and plump, stellate myofibroblastic cells arranged in haphazard fascicles distributed in a myxoid stroma. On immunohistochemical stains, the tumor cells were strongly positive for pan-keratin (keratin AE1/AE3), keratin Cam 5.2, vimentin, and ALK-1. Desmin and smooth muscle actin (SMA) demonstrated focal positivity. Both the histologic and immunohistochemical findings were consistent with pseudosarcomatous fibromyxoid tumor (Fig. 3).

Discussion

Pseudosarcomatous fibromyxoid tumors (PFT), also known as inflammatory myofibroblastic tumor or pseudosarcomatous myofibroblastic proliferation, are uncommon lesions that can be

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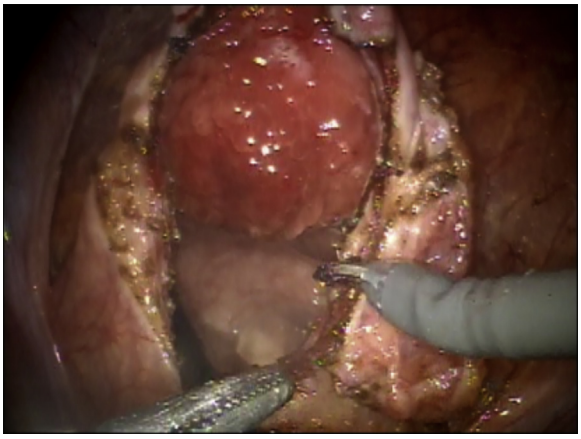

Figure 1. Full appreciation of intravesical portion of the tumor.

encountered in the bladder. First described in the bladder by Roth,[1] they have been documented in multiple other organs, such as the prostate, urethra, and ureter.[2,3] According to previous case reports, these lesions appear to be more common in young females[2–4] and may be located at the anterior bladder/dome,[2,5] both of which are true in this case report. It has been suggested that the development of PFT may be associated with pregnancy and subclinical trauma to the bladder, however this has never been proven.[3] The most common clinical presentation is gross, painless hematuria and occasional suprapubic pain.[2,3,5]

Histological characteristics of PFT show proliferation of myofibroblastic cells with focal atypia and features mimicking nodular fasciitis with no atypical mitoses. They frequently contain large atypical nuclei with the myofibroblastic cells mixed with lymphocytic inflammatory cells and positive staining for cytokeratin.[3–5] These lesions have an excellent prognosis with no incidences of metastasis.[3]

A histologically similar lesion to PFT is the post-operative spindle cell nodule that occurs most commonly after a TURBT.[2,3,5] They are visualized cystoscopically as nodular mucosal protrusions at the location of previous resection. Post-operative spindle cell nodules often contain foreign body giant cell granulomas and eosinophils, both of which are absent in pseudosarcomatous fibromyxoid tumor. A retrospective review by Spiess et al revealed that all patients with post-operative spindle cell nodules had prior urological instrumentation and history of previous bladder cancer whereas patient with PFT did not.[3] It has been suggested that since the clinicopathologic features of these two lesions are similar, that the term pseudosarcomatous myofibroblastic proliferation be used to describe such growths.[4]

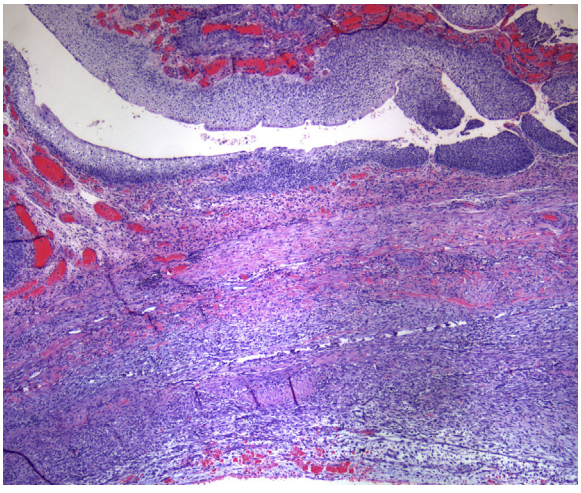

Figure 2. Pseudosarcomatous fibromyxoid tumor seen on H&E at 4× magnification.

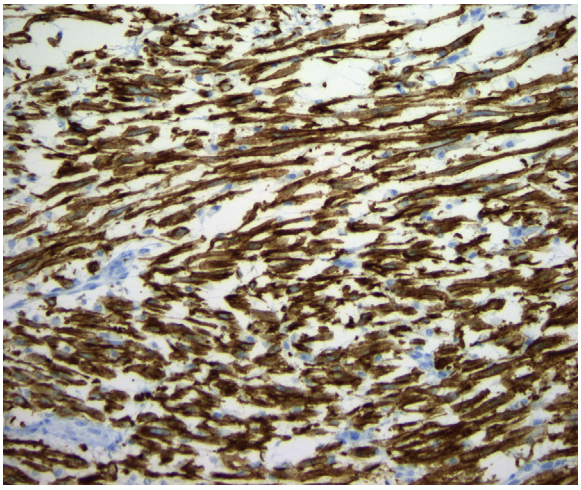

Figure 3. Pseudosarcomatous fibromyxoid tumor seen with Vimentin stain at 20× magnification.

This is in contrast to sarcomas and sarcomatoid carcinoma, which portend a poor prognosis and have cellular atypia, high mitotic activity, atypical mitosis and evidence of necrosis.[3,4] It is necessary to differentiate pseudosarcomatous fibromyxoid tumors from sarcomas, as the latter require aggressive surgery with high risk of recurrence.[2]

Utilization of transurethral resection as well as open partial cystectomy in the treatment of pseudosarcomatous fibromyxoid tumor has been documented in the literature. To our knowledge, treatment of PFT via robotic assisted laparoscopic partial cystectomy, as documented here, has never been previously described. The robotic approach provides exceptional visualization via the magnified camera as well as excellent cosmetic results. This minimally invasive technique also allows for a shorter hospital stay and quicker recovery as seen here. Tumor size and location must also be taken into consideration when choosing a robotic approach. In this case, the anterior/dome of the bladder was involved with tumor, allowing for quick identification and easy access to the lesion. The experience gained from this case demonstrates the practicality of utilizing the robot to achieve satisfactory surgical and cosmetic results in the treatment of pseudosarcomatous fibromyxoid tumor in young adult females.

Conclusion

It is important to differentiate between PFT and other sarcomas, as the treatment for the latter is invasive and associated with significant morbidity. It is important for the urology team to be in open communication with the reviewing pathology team to reach an accurate diagnosis in a timely manner. In this case report, a young female with PFT was successfully treated with robotic assisted laparoscopic partial cystectomy with complete excision of the lesion and excellent post-operative results. Therefore, robotic partial cystectomy for PFT is a feasible option and may be considered for patients with bladder lesions located in the dome of the bladder or the anterior bladder wall.

Conflicts of interest

None to report.

References

1. Roth JA. Reactive pseudosarcomatous response in urinary bladder. *Urology*. 1980;16:635–637.
2. Karem JA, Kabbani W, Sagalowsky A. Pseudosarcomatous fibromyxoid tumor of the bladder. *Urol Oncol*. 2008 May–Jun;26(3):291–294.
3. Spiess PE, Tuziak T, Tibbs RF, et al. Pseudosarcomatous and sarcomatous proliferations of the bladder. *Hum Pathol*. 2007 May;38(5):753–761.
4. Iczkowski KA, Shanks JH, Gadaleanu V, et al. Inflammatory pseudotumor and sarcoma of urinary bladder: differential diagnosis and outcome in thirty-eight spindle cell neoplasms. *Mod Pathol*. 2001;14:1043–1051.
5. Harik LR, Merino C, Coindre JM, et al. Pseudosarcomatous myofibroblastic proliferations of the bladder: a clinicopathologic study of 42 cases. *Am J Surg Pathol*. 2006 Jul;30(7):787–794.