



Endourology

Robotic approach to Giant multiloculated cystadenoma of the prostate: Initial experience

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ABSTRACT

Giant multiloculated cystadenoma of the prostate (GMPC) is a rare, massive and benign tumor. Recurrence rates after resection are low but have been recorded. An open approach is most common, with few laparoscopic and no robotic cases reported. We report on a case of a 65-year-old man with a new presentation of a 400 cc cystic prostatic mass thought to be GMPC. This patient underwent what is, to our knowledge, the first reported case of RARP in the treatment of GMPC. A robotic approach to massive GMPC was safe and efficacious in our initial experience.

Introduction

GMPC is a rare, benign tumor. Fewer than 30 cases have been reported since it was originally described. Patient presentation is characterized by symptoms related to tumor mass effect on adjacent structures, most commonly obstructive urinary symptoms and less commonly constipation, abdominal distention and pain, or azoospermia.

The most common approach for GMPC is complete resection of the tumor with preservation of surrounding structures when possible, including the remaining prostatic tissue.¹ The large size of these tumors frequently necessitates an open procedure, with only two reported cases of successful laparoscopic resection and no reported robotic approaches.² Short term recurrence rates following successful complete resection are low, but patients have experienced recurrent GMPC on long term follow-up.²

We report on a patient who underwent radical prostatectomy and whose case we believe represents the first report of robotic approach to GMPC.

Case presentation

The patient is a 65-year-old man who presented originally 14 years ago because of elevated PSA. Prostate biopsy was negative for malignancy, but prostate volume was estimated at 150–170 cc. He was not

experiencing any lower urinary tract symptoms. He followed up 8 and 3 years ago and was experiencing nocturia, with very little bother. 1 year ago he presented for discussion of HoLEP because of more bothersome nocturia despite starting tamsulosin. His Qmax was 4.5 ml/sec, with 77 cc voided and PVR of 409 cc. A prostate MRI showed a massive, multicystic prostatic nodule over 400 cc in volume, pushing into the bladder and both ureters (Fig. 1a). Prostate biopsy was negative for malignancy. Cystadenomatous tissue was also not identified. He agreed to proceed with robot assisted radical prostatectomy (RARP).

During the procedure, the mass was noted to be predominantly posterior and left sided, resulting in right displacement of local structures. The distance from the apex to the base anteriorly was only 4–5 cm and would likely not be noticed on cystoscopy. After bladder neck sparing dissection down to the anterior meeting point of the bladder and urethra, anterior-posterior division of the bladder neck was performed. The blood supply to the left side of the mass was controlled and ligated sequentially. The mass was bivalved, and the blood supply to the R side was controlled and ligated. The mass was then freed in an upgoing direction (from base to apex). Given the distance between the bladder (displaced posteriorly) and the apex, it was elected to leave the normal apical tissue intact. A 20f coude tip catheter and a JP drain were placed. The specimen was split evenly and removed through a 5cm midline incision.

The procedure was significantly more difficult than a typical RARP,

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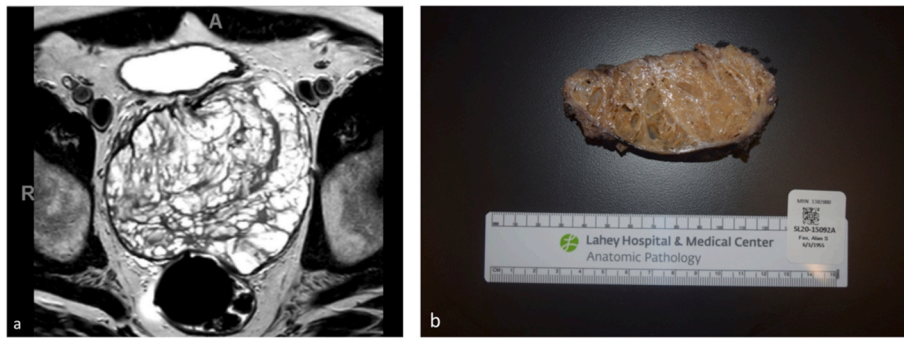


Fig. 1. a) T2 weighted prostate MRI and b) gross prostate pathology.

in large part due to the tedious process of separating the mass from the bladder, ureters and pelvic vascular structures. Additionally, the increased vascularity of the mass resulted in greater than average intraoperative bleeding. Ultimately, though, the procedure was very successful, and the specimen was retrieved in two bags through a 5cm midline incision. The final pathology report described a 450g mass with diffusely cystic parenchyma (Fig. 1b).

Discussion

Though diagnosis and management of GMPC has been more thoroughly explored since it was initially described in the early 1990s, there is still much room for development and consensus building in the treatment of this disease. In this case report we detail what is, to our knowledge, this first case of robotic prostatectomy for GMPC and one of the largest RARPs reported in the literature.

A diagnosis of GMPC is typically confirmed on final pathology, as was the case for our patient. Determining the nature of the mass prior to surgery biopsy is non-contributory, as was the case in our patient, can be difficult. There are, however, a number of radiographic features consistently attributed to cystadenoma on MRI. These include large size with mass effect on local structures, multilocular, cystic nature and hyperintensity on T2-weighting.³ All of these were present in this patient.

There is no consensus approach to surgical management of GMPC. Historically, most surgeons have opted for complete resection of the tumor with maximal preservation of local structures.¹ This, up until this case, has been our approach as well. There are substantial benefits to retaining a patient's native systems, including preservation of patient continence and sexual function. More aggressive treatment, like radical prostatectomy, cystoprostatectomy or pelvic exenteration, has sometimes been required because of the size of the tumor and adherence to surrounding viscera.¹ Providers must weigh the benefits of less aggressive treatment with the potential for recurrent disease.

It was another of our patients, that had recurrence at 9 and 17 years after a resection that left the normal tissue in place, that led us to take a more aggressive approach here. Robust data on recurrence rates in these tumors is lacking. Short term recurrence appears to be relatively rare for

patients who have undergone complete resection. Nakamura et al. collected 24 reported cases of GMPC for a case report and review. With 15 reporting long term follow-up. Only one patient was reported to have recurrent disease, three years after their initial treatment.¹ Data on long term recurrence is even more scarce, although our prior patient experience, and another reported case of recurrence 16 years after complete resection, suggest that it is a real possibility.²

The robotic approach to massive prostatectomy (>200g) has not been fully characterized in the literature. The largest robotic prostatectomy reported to date was 560g.⁴ To our knowledge this case (prostate size of 450g) represents the second largest reported robotic prostatectomy and the first in a patient with GMPC. In both cases the procedure was somewhat arduous, but patients recovered well without complication. With limited data, it appears that RARP is a feasible and safe option for massive prostates, and GMPC specifically. Further experiences will likely improve efficiency of these procedures and expand our understanding of potential utility and pitfalls.

Conclusion

Our understanding of the natural history of GMPC is still limited but there is a real risk of tumor recurrence, even many years after a successful complete resection. It is possible that more aggressive initial treatment may serve to lessen this risk, but more long-term follow-up data is needed to determine a true effect. RARP was a safe, feasible option for treatment of massive GMPC in our initial experience.

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