



## Cystadenoma of the Seminal Vesicle: A Case Report of Rare Seminal Vesical Tumor and Review of Literature

Mathin Jaffer, Suvradeep Mitra, Swarnendu Mandal, Manoj Das, Rjesh Mahlingam, and Prasant Nayak

Although the secondary involvement of the seminal vesicles by prostate cancer is relatively common, seminal vesicle as a primary site for neoplastic disease is uncommon.<sup>1</sup> There are a wide variety of tumors among primary seminal vesicle tumors that are derived from both the epithelium and stroma. Hence, they have been classified as mixed epithelial-stromal tumors. This report describes a 32-year-old man who presented with a retrovesical cystic mass that was initially thought to be a prostatic tumor but demonstrated pathologically to be a cystadenoma of the seminal vesicles. *UROLOGY* 123: e11–e14, 2019. © 2018 Elsevier Inc.

Primary tumors of the seminal vesicle are rare entities. The seminal vesicle is most commonly involved by the tumors of the adjacent organs secondarily spreading to and involving the seminal vesicle. The involvement of the seminal vesicle by prostatic adenocarcinoma is by far the commonest malignancy involving the seminal vesicle.<sup>2,3</sup> The reported examples of primary malignant tumors include adenocarcinoma, squamous cell carcinoma, and sarcoma. Benign primary tumors of seminal vesicle, such as cystadenoma, are even rarer than these malignant neoplasm with around 20 cases reported in the world literature.<sup>2</sup>

A 32-year-old patient presented at our center with recurrent episodes of acute urinary retention with mild obstructive voiding symptoms. The patient had no significant medical history of urinary tract infection, hematuria, or hematospermia. He did not have any known comorbidity. On deep abdominal palpation, an ill-defined, firm, painless mass was found approximately measuring 7 × 6 cm. It had smooth surface and was limited to the hypogastrium with extension deep into the pelvis. The lower margin of the mass could not be ascertained. Per rectal examination revealed a mass indistinguishable from prostate. The serum prostate specific antigen level was normal. Transabdominal ultrasonography showed an enlarged pelvic mass with heterogeneous echotexture and cystic areas (Fig. 1A). MRI showed a 12 cm well defined mass in the pelvis, posteroinferior to the urinary bladder, the prostate was not delineated, and the mass was predominantly cystic, with septations (Fig. 1B).

The patient underwent an exploratory laparotomy as the possibility of malignant tumor could not be ruled out.

The surgical exploration revealed a well-defined, retrovesical solid-cystic mass situated posteroinferior to the bladder and free from the bladder. The tumor was separated in toto from the anterior attachments to the bladder and posterior attachments to the rectum and was submitted for histopathology (Fig. 2A).

Grossly, the mass was encapsulated with bosselated external surface and measured 14 × 9 × 8 cm in its largest dimension and weighed 317 g. Cut surface showed numerous variable sized cysts ranging in size from pin-head to the largest measuring approximately 3.5 cm in diameter, with tan to beige colored scant to moderate amount of intervening stroma (Fig. 2B). The larger cysts contained grayish brown granular material. Microscopy (Fig. 3) showed a biphasic tumor with numerous cystically dilated spaces lined by double lining epithelium representing the epithelial component. The luminal cell layer was flattened to cuboidal and the abluminal cells showed basal cell morphology. Many of these cystic spaces contained inspissated deep eosinophilic secretion and cellular debris. The stroma showed haphazard arrays of smooth muscle fascicles and large lymphatics and was oedematous at places. No stromal or epithelial dysplasia was noted. Mitosis, atypia, or necrosis were absent from the epithelial or the stromal component. The epithelial lined cysts showed strong diffuse membranous immunopositivity for Pancytokeratin with focal luminal Alpha Methyl Acyl Coenzyme A Racemase (AMACR) positivity. Prostate specific antigen was repeated twice and was negative ruling out a prostatic origin. Cytokeratin 5/6 and p63 were performed to detect any invasive malignancy. However, both these immunomarkers highlighted the continuous basal layer around all the cystic glandular spaces. Smooth muscle antigen highlighted the stromal smooth muscle cells. Based on the gross and histomorphology

From the Department of Urology, AIIMS, Bhubaneswar, Odisha, India; and the Department of Pathology, AIIMS, Bhubaneswar, Odisha, India  
Address correspondence to: Swarnendu Mandal, MCh, Department of Urology, AIIMS, Bhubaneswar 751019, Odisha, India. E-mail: dr.swarnendu@gmail.com



**Figure 1.** (A) Transabdominal ultrasonography showed heterogenous echotexture and cystic areas. (B) MRI revealed large cystic mass with multiple septations originating postero-inferior to urinary bladder.

along with the immunohistochemistry, a diagnosis of mixed epithelial and stromal tumor (cystadenoma) of seminal vesicle origin was rendered. The postoperative period was uneventful. There was no evidence of recurrence in CT scan after 6 months during follow-up.

## DISCUSSION

Primary seminal vesicle cystadenoma (SVC) is a benign biphasic tumor of seminal vesicle originating from the embryological residues of the müllerian ducts.<sup>4</sup> It is a benign morphological variant of mixed epithelial and stromal tumor, fibroadenoma, and cystosarcoma being the other entities of the spectrum. The clinical features in patients with SVC are asymptomatic presentation, abdominal pain, hematuria, hemospermia, and lower urinary tract symptoms.<sup>5,6</sup> The wide variety of presenting features may result from the variations in the size and location of the mass.

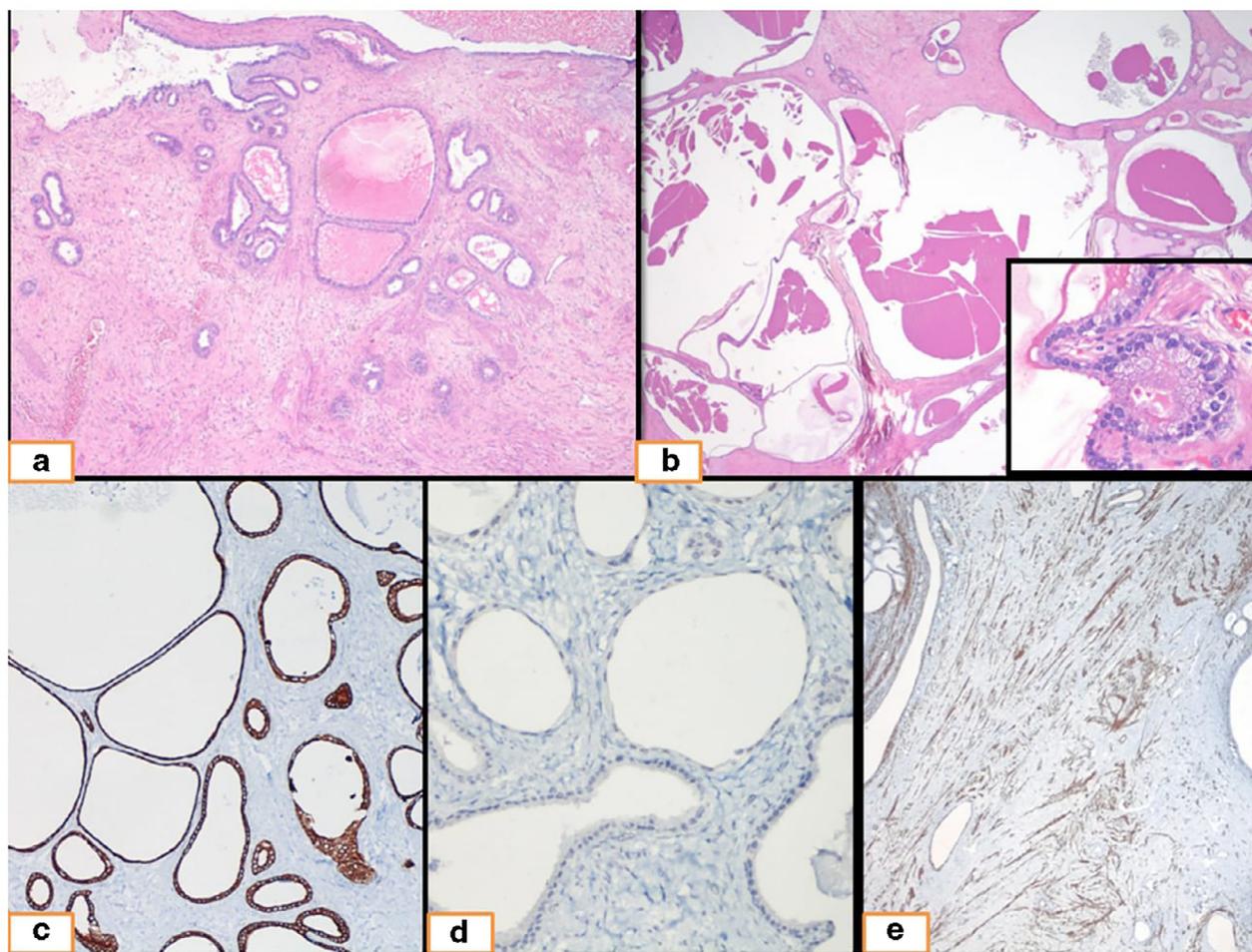
CT scan and MRI provide useful information in determining both the extent of the lesion and its invasiveness.

When imaging findings are nonspecific, the Ultrasound or CT-guided biopsy is crucial. Regardless, biopsies may be inconclusive, and exploratory laparotomy or laparoscopy is usually needed.<sup>1,4</sup>

There have been scattered reports of SVCs, since Soule and Dockerty<sup>7</sup> reported “cystadenoma of the seminal vesicle.” Overall, previous reports<sup>8-10</sup> reveal that the gross pathology of a neoplasm typically shows a multilobulated, cystic tumor containing cleft-like spaces filled with a brownish to yellow, viscous or soft gelatinous fluid. Microscopic examination has shown the cystic area to be lined with a single layer of columnar or cuboidal epithelium surrounded by a fibrous stroma.<sup>8,9</sup> The gross and histological findings mentioned in previous reports are similar to those in our case. A demonstration of cytokeratin might be helpful in showing the epithelial cell line. Stains for the prostate-specific antigen and prostatic acid phosphatase can help to distinguish the tumors of a prostatic origin from similar tumors of a seminal vesicular origin similar to our case. Mazur et al<sup>11</sup> reported fibroblastic, leiomyomatous, and transitional morphology of the stromal cells.



**Figure 2.** (A) Intraoperative finding of tumor situated postero-inferior to bladder. (B) Cut surface showing large cysts containing yellow grayish material.



**Figure 3.** (A) and (B): Low magnification photomicrograph showing a biphasic tumor with multiple epithelial-lined cystic spaces embedded in a nondescript stroma containing smooth muscle fascicles. Note the granular eosinophilic secretion inside the glands (B); The inset shows double-lined epithelium (hematoxylin and eosin; 40×; Inset 400×). (C-E): Immunostains showing strong pancytokeratin positivity (C) and PSA negativity in the epithelial component (D). SMA shows positive smooth muscle fibres in the stroma (E). PSA, prostate specific antigen; SMA, smooth muscle antigen.

The index case also showed haphazard arrays of smooth muscle cells in the stroma.

Various surgical approaches have been described in published studies for SVC. Owing to the anatomic location, surgical access to the SVC can be challenging, and the decision mainly relies on the expertise of the surgeon.<sup>12</sup> Most cases in the published literature were managed with an open technique using an anterior transvesical or retrovesical<sup>2</sup> approach. Radical cystoprostatectomy had also been performed.<sup>9</sup> After the first report of the use of a laparoscopic approach to SVC by Kavoussi and Costabile<sup>12</sup> in 1993, minimally invasive surgery has been increasingly performed to approach retrovesical structures such as tumors or cysts.<sup>13</sup> Transperitoneal laparoscopic vesiculectomy for SVC has recently been performed, achieving optimal oncologic outcomes and easy recovery after surgery.<sup>14,6</sup> In our case, we have gone through open approach and total excision of tumor.

## References

1. Gil AO, Yamakami LY, Genzini T. Cystadenoma of the seminal vesicle. *Int Braz J Urol.* 2003;29:434–436.
2. Lee CB, Choi HJ, Cho DH, Ha US. Cystadenoma of the seminal vesicle. *Int J urol.* 2006;13:1138–1140.
3. Lorber G, Pizov G, Gofrit ON, Pode D. Seminal vesicle cystadenoma: a rare clinical perspective. *Eur Urol.* 2011;60:388–391.
4. Lagalla R, Zappasodi F, Lo Casto A, Zenico T. Cystadenoma of the seminal vesicle: US and CT findings. *Abdom Imaging.* 1993;18:298–300.
5. Arora A, Sharma S, Seth A. Unusual retrovesical cystic mass in a male patient. *Urology.* 2013;81:e23–e24.
6. Zhu JG, Chen WH, Xu SX, Wang RP, Sun ZL. Cystadenoma in a seminal vesicle is cured by laparoscopic ablation. *Asian J Androl.* 2013;15:697–698.
7. Soule EH, Dockerty MB. Cystadenoma of the seminal vesicle, a pathologic curiosity. Report of a case and review of the literature concerning benign tumors of the seminal vesicle. *Mayo Clin Proc.* 1951;26:406–414.
8. Mazucchelli L, Studer UE, Zimmermann A. Cystadenoma of the seminal vesicle: case report and literature review. *J Urol.* 1992;147:1621–1624.

9. Baschinsky DY, Niemann TH, Maximo CB, Bahnson RR. Seminal vesicle cystadenoma: a case report and literature review. *Urology*. 1998;51:840–845.
10. Lundhus E, Bundgaard N, Sorensen FB. Cystadenoma of the seminal vesicle. A case report. *Scand J Urol Nephrol*. 1984;18:341–342.
11. Mazur MT, Myers JL, Maddox WA. Cystic epithelial-stromal tumor of the seminal vesicle. *Am J Surg Pathol*. 1987;11:210–217.
12. Kavoussi PK, Costabile RA. Surgery of the scrotum and seminal vesicles. In: Wein AJ, Kavoussi LR, Novick Partin AW, Peters CA, eds. *Campbell-Walsh Urology*. Philadelphia, PA: Elsevier Health Sciences; 2012:1012–1022.
13. Passerotti C, Cendron M, Gargollo P, et al. Minimally invasive surgical approaches to retrovesical structures. *Int J Med Robot*. 2007;3:307–311.
14. Zhang D-X, Li Y, Li X.-J., et al., et al. Transperitoneal laparoscopic excision of primary seminal vesicle benign tumors: surgical techniques and follow-up outcomes. *Urology*. 2013;82:237–241.