International Surgery Journal
Sabberwal A et al. Int Surg J. 2026 Feb;13(2):307-309
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20260147

Case Report

A large acquired seminal vesicle cyst presenting with urinary symptoms: a case report

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Received: 08 December 2025
Accepted: 12 January 2026

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ABSTRACT

Seminal vesicle cysts are infrequent urogenital lesions, typically classified as congenital or acquired. Acquired cysts usually develop due to chronic obstruction, inflammation, or infection. This report describes the clinical course, evaluation, and surgical management of a large acquired seminal vesicle cyst in a 55-year-old man who presented with lower abdominal discomfort, urinary difficulty, and intermittent hematuria. Cross-sectional imaging revealed a sizable cystic lesion arising from the left seminal vesicle, and definitive treatment was achieved through open surgical excision after failed laparoscopic dissection. The patient recovered well and remained symptom-free postoperatively.

Keywords: Seminal vesicle cyst, Zinner syndrome, Renal agenesis, Management, Lower urinary tract symptoms, Infertility, Case report

INTRODUCTION

Seminal vesicle cysts are rare lesions, with an estimated incidence of fewer than 0.005% in the general population.[1] Because their clinical features often overlap with other lower urinary tract disorders, many cases remain undetected until the cyst enlarges significantly or causes compressive symptoms. Congenital cysts usually arise from developmental anomalies such as ejaculatory duct atresia or Wolffian duct malformations, while acquired cysts more commonly develop secondary to chronic infection, inflammation, or obstructive changes within the ejaculatory pathway.[2,3]

As these cysts increase in size, they may exert pressure on surrounding pelvic structures, resulting in urinary difficulty, ejaculatory discomfort, pelvic pain, or, in some instances, recurrent urinary infections.[4] Cross-sectional imaging plays a crucial role in establishing the diagnosis. Computed tomography (CT) and magnetic resonance imaging (MRI) help distinguish seminal vesicle cysts from other retrovesical masses—including Müllerian duct cysts, prostatic utricle cysts, and bladder diverticula—which may appear similar on physical examination or ultrasonography.[5] Despite their rarity, early identification is essential to prevent progressive enlargement and complications.

The rationale for presenting this case stems from the uncommon occurrence of large acquired seminal vesicle cysts in older adults and the diagnostic uncertainty they may create. Additionally, the requirement to convert from a planned laparoscopic excision to an open procedure due to dense adhesions offers valuable insight into operative challenges. By documenting this case, we aim to underscore the importance of considering seminal vesicle pathology in men with persistent pelvic or urinary symptoms and highlight the significance of detailed imaging and tailored surgical planning for optimal clinical outcomes.[6]

CASE REPORT

A 55-year-old male presented with six months of persistent lower abdominal pain, intermittent difficulty in urination, and episodes of hematuria. The symptoms gradually

increased in frequency, prompting evaluation. He denied fever, weight loss, previous pelvic trauma, or any surgical history. There was no known familial history of urogenital abnormalities. The patient reported no issues related to fertility or prior sexually transmitted infections.

Clinical findings

Physical examination identified a firm, poorly defined, non-mobile lump in the lower abdomen. The mass could not be clearly delineated from surrounding structures. Digital rectal examination revealed normal sphincter tone, a prostate of regular size and consistency, and no palpable pelvic masses. These findings pointed toward a deep pelvic origin rather than a primary prostatic lesion.

Diagnostic assessment

Routine blood investigations were unremarkable. A contrast-enhanced computed tomography (CT) scan of the abdomen and pelvis revealed a well-circumscribed cystic lesion measuring roughly 9×8×8 cm situated in the left hemipelvis. The cyst displayed loss of fat planes with the prostate and left seminal vesicle superiorly and medially, and with the anterior rectal wall inferiorly. These radiologic relationships strongly indicated a seminal vesicle origin. The large size and close proximity to the rectum, prostate, and adjacent vasculature made surgical planning essential (Figure 1).

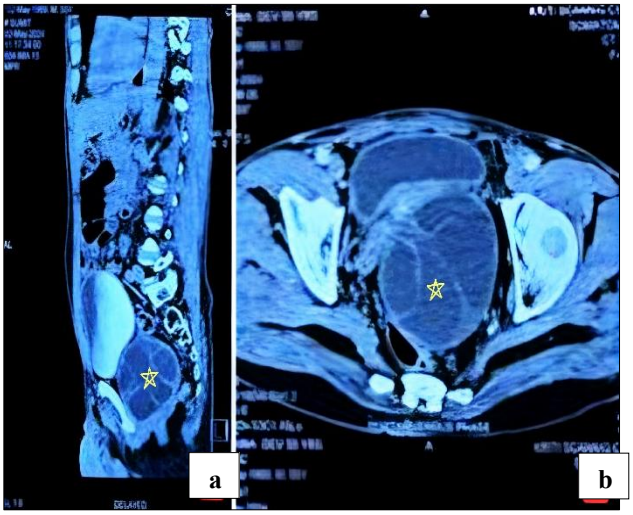

Figure 1: Computed tomography (CT) images demonstrating a large, multiloculated seminal vesicle cyst (yellow asterisk), (a) sagittal plane view showing the superior-inferior extent of the cystic mass, and (b) axial plane view highlighting the multiloculation and displacement of adjacent structures.

Management and therapeutic intervention

A laparoscopic approach was initially planned due to its minimally invasive advantages. During laparoscopy, however, the cyst wall was noted to be densely adherent to surrounding tissues, making safe dissection impossible. To avoid injury to the rectum or pelvic vessels, the surgical team converted to an open laparotomy. Through careful dissection, the entire cyst was excised successfully. Intraoperative inspection revealed a thick-walled cyst filled with mucinous material (Figure 2).

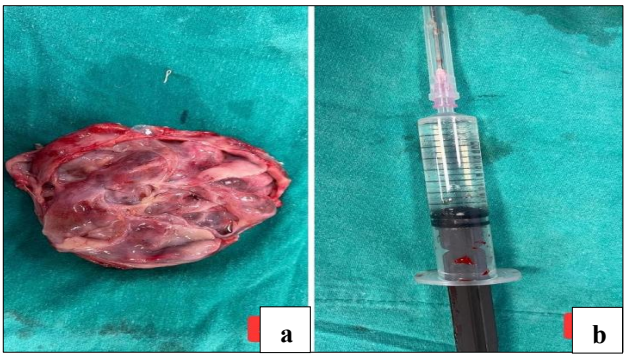

Figure 2: Gross pathology and aspiration findings of the multiloculated cyst, (a) surgical specimen demonstrating the multiloculated cystic mass with prominent septations, and (b) aspiration of the cyst revealing clear, serous fluid collected within a syringe.

Postoperative laboratory evaluation of the cyst fluid showed Micrococcus species on culture, indicating a low-grade chronic infection. Cytological examination revealed a low cell count with predominantly leukocytic presence. Biochemical analysis of the cyst contents was within normal range. Histopathology confirmed a mucinous seminal vesicle cyst without any features suggestive of malignancy.

Follow-up and outcome

The patient recovered without complications. He resumed oral intake promptly and mobilized early in the postoperative period. He was discharged on the fourth postoperative day and reported significant improvement in urinary symptoms at follow-up. There were no recurrence-related complaints or new urinary disturbances during subsequent evaluations.

DISCUSSION

Seminal vesicle cysts are unusual pelvic lesions, and their presentation can vary depending on whether they are congenital or acquired. Congenital cysts generally arise from developmental defects of the ejaculatory duct system, often linked with Wolffian duct anomalies or renal agenesis.[1] In contrast, acquired cysts evolve later in life and are most often associated with chronic obstruction, inflammation, prostatitis, or structural distortion following pelvic procedures.[3]

Many cysts remain silent for years, but when they increase in size, they may compress nearby organs, leading to urinary complaints, pelvic discomfort, painful ejaculation,

recurrent infections, or occasionally infertility.[4] The symptoms in this patient—difficulty in urination and intermittent hematuria—are consistent with those described in large seminal vesicle cysts.

Accurate diagnosis relies heavily on imaging. While ultrasonography may detect a retrovesical cystic lesion initially, it often lacks the detail required for definitive characterization. CT and magnetic resonance imaging (MRI) provide far better delineation of cyst size, location, internal architecture, and relationship to adjacent organs.[5] In this case, CT imaging clearly demonstrated the mass encroaching upon the prostate and rectum. Such detailed mapping was essential not only for diagnosis but also for planning an appropriate surgical approach.

Surgical management remains the cornerstone for symptomatic or enlarging cysts. Minimally invasive excision is generally preferred due to its reduced morbidity and faster recovery. However, severe adhesion to surrounding structures, as encountered here, may force conversion to an open procedure to prevent injury to the rectum or pelvic vessels.[7] Histopathological analysis confirming a mucinous seminal vesicle cyst further supported the clinical and radiological impression.

Overall, this case illustrates the importance of considering seminal vesicle pathology when evaluating persistent pelvic or urinary symptoms. Early identification, careful imaging assessment, and individualized operative planning are key to achieving a favorable outcome.[6]

CONCLUSION

This case underscores the significance of considering seminal vesicle cysts in the differential diagnosis of male patients presenting with persistent pelvic or urinary symptoms. Large cysts may cause considerable discomfort and require detailed imaging for accurate diagnosis and surgical planning. Open excision remains a safe and definitive treatment when minimally invasive options are not possible. Early recognition and appropriate management can effectively restore patient comfort and prevent long-term complications.

ACKNOWLEDGEMENTS

Authors would like to thank the Department of Urology for operative assistance and the patient's family for their cooperation.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Sabberwal A, Kumar A, Katiyar R, Chaurasia DK. A large acquired seminal vesicle cyst presenting with urinary symptoms: a case report. Int Surg J 2026;13:307-9.