CASE REPORT
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Infected Pelvic Cyst: A Postoperative Complication in a Patient with Zinner Syndrome: A Case Report

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Abstract

Zinner syndrome is a rare disorder characterized by congenital seminal vesicle cysts, multicystic dysplastic kidney, and ipsilateral upper urinary tract anomalies. Although at least 80% of patients are asymptomatic, they may suffer from dysuria, urinary tract infections, bladder dysfunction, and infertility. Excision of cysts may be considered as an option to relieve symptoms, but it carries risks and potential complications due to the deep localization of seminal vesicles. There is limited knowledge regarding postoperative complications.

In this case, an asymptomatic patient underwent surgery because of enlargement of the seminal vesicle cysts. However, an infected cyst was developed as a complication. Seminal vesicle cyst excision in asymptomatic patients with Zinner syndrome may result in postoperative complications, and the decision to have an operation should be made with great care and consideration.

Keywords: Zinner syndrome, seminal vesicle cyst, pelvic cyst, case report

Introduction

Zinner syndrome is a rare congenital disorder caused by a developmental anomaly of the mesonephric duct (1). It is characterized by unilateral renal agenesis, ipsilateral seminal vesicle cysts, and upper tract urinary anomalies (2-4). Although it is rarely diagnosed in pediatric populations (5), patients frequently remain asymptomatic; however, the most common symptoms include dysuria, frequent urination, perineal or scrotal pain, and painful ejaculation (5). Magnetic resonance imaging (MRI) serves as the gold standard for diagnosis. Treatment strategies range from conservative approaches to minimally invasive or surgical interventions, depending on the size of the cyst and the patient's symptoms.

To the best of our knowledge, this case represents the first report of a pelvic cyst subsequent to surgical excision of the seminal vesicle cyst in Zinner syndrome. We discuss the risks of surgery and the management of an infected pelvic cyst as a complication of surgical intervention.

Case Presentation

In October 2023, a 45-year-old male patient presented to our outpatient clinic, reporting persistent perineal pain for 1 year. The pain was further exacerbated during urination, defecation, and ejaculation. The patient's body mass index was measured as 23.9 kg/m^2, and besides lumbar scoliosis, no other chronic diseases were noted.

A comprehensive review of the patient's medical history was systematically analyzed. Five years ago, the patient had undergone surgical resection of an incidental right seminal vesicle cyst because of its progressive enlargement. There were no complaints before the operation. Preoperative contrast-enhanced computed tomography revealed the absence of the right kidney and identified a cystic lesion within the right seminal vesicle (Figure 1A, 1B). Although preoperative MRI was unavailable, documentation indicated an inferior positioning of the prostate relative to its typical location, along with the presence of a 4.5x2.8 cm cystic lesion within the seminal vesicle, extending toward the right posterolateral aspect of the bladder.

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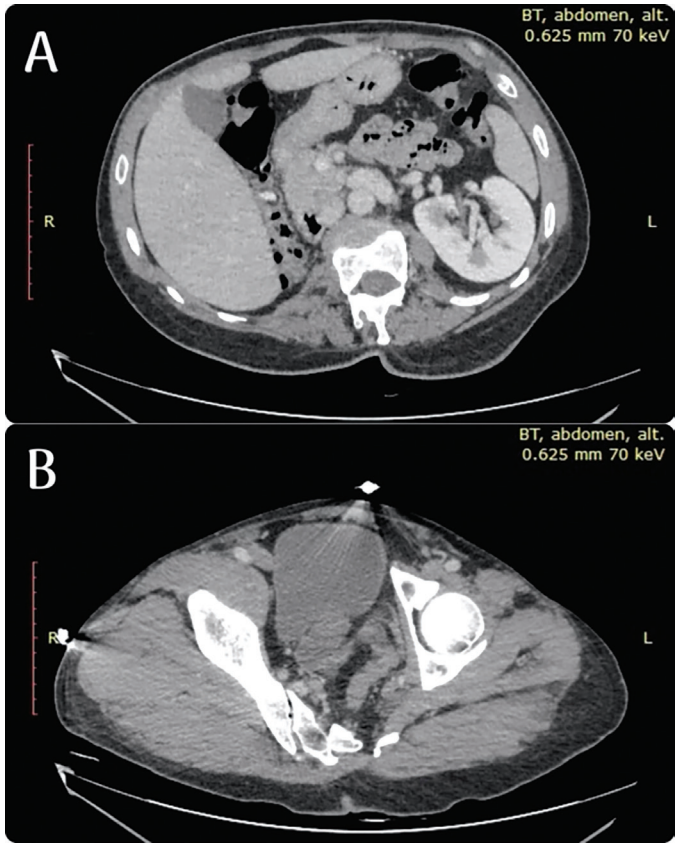

Figure 1. A. Preoperative post-contrast axial CT image of the right renal agenesis, B. Preoperative post-contrast axial CT image of the right seminal vesicle cyst

CT: Computed tomography

Preoperative cystoscopy revealed a slight elevation of the right hemitrigone and an absence of the right ureteral orifice. Histopathological examination of the excised tissue confirmed cystic structures consistent with a dilated ureter lined by urothelial epithelium (Figure 2).

During the physical examination, the prostate was palpated and characterized as a medium-sized adenoma, while examination of the testis, epididymis, and vas deferens revealed no anomalies. Biochemical, seminal, and urinalysis parameters were within the normal range. The uroflowmetry test showed an obstructive voiding pattern, a maximum flow rate (Q_{max}) of 11.1 mL/s, and a postvoiding residual urine volume of 35 mL. The ultrasound examination identified a cystic lesion measuring 66x23 mm in the posterior right-side of the bladder. Subsequent MRI revealed a 66x23 mm densely enhancing cyst localized at the level of the obturator muscle in the right posteroinferior aspect of the bladder (Figure 3). The cyst was considered as infected and postulated to have arisen as a consequence of prior surgical intervention, with the patient's symptoms attributed to this cystic lesion.

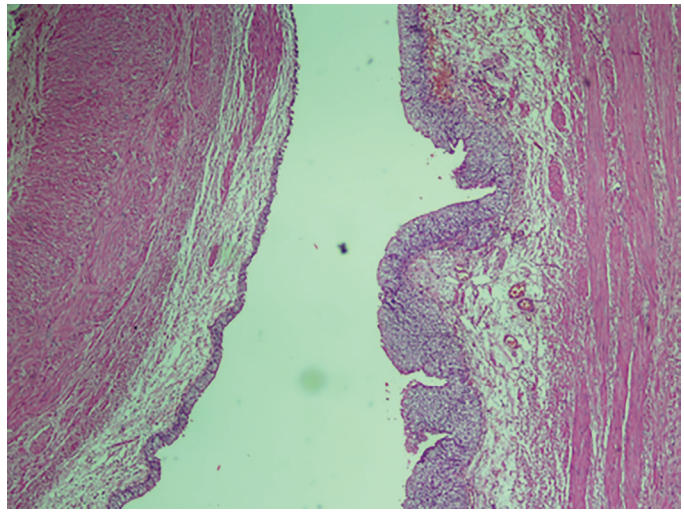

Figure 2. Seminal vesicle cyst lined with urothelium epithelium (hematoxylin-eosin, 40x)

Following comprehensive evaluation, the diagnosis of Zinner syndrome was established, and the patient subsequently underwent computed tomography-guided percutaneous drainage (Figure 4), which resulted in symptomatic relief. Written informed consent to participate and publish was obtained.

Discussion

Acquired seminal vesicle cysts are often unilateral and typically develop in adulthood because of inflammation and obstruction of the ejaculatory ducts (6). However, congenital genitourinary tract anomalies typically result from abnormal development of the ipsilateral mesonephric ducts, including the vas deferens, kidney, and ureter (7-10).

Cystoscopic findings in patients with Zinner syndrome may reveal the absence of hemitrigone or an ectopic ureter (11). Similarly, in this case, the absence of the right orifice was observed in the preoperative cystoscopy, and the pathological examination revealed an ectopic ureter opening into the seminal vesicle.

In asymptomatic patients, annual clinical examination and follow-up ultrasound are recommended. Surgical excision is an option in the management of symptomatic patients and those who have not responded to conservative treatment (12). In a systematic review by Liu et al. (4), of 193 patients with treatment details, 127 were treated surgically (open surgery, laparoscopic surgery, and robot-assisted laparoscopic surgery). Of the 127 patients, 39 were treated by open surgery. In this case, the patient underwent excision of the seminal cyst due to enlargement during follow-up, although he was asymptomatic.

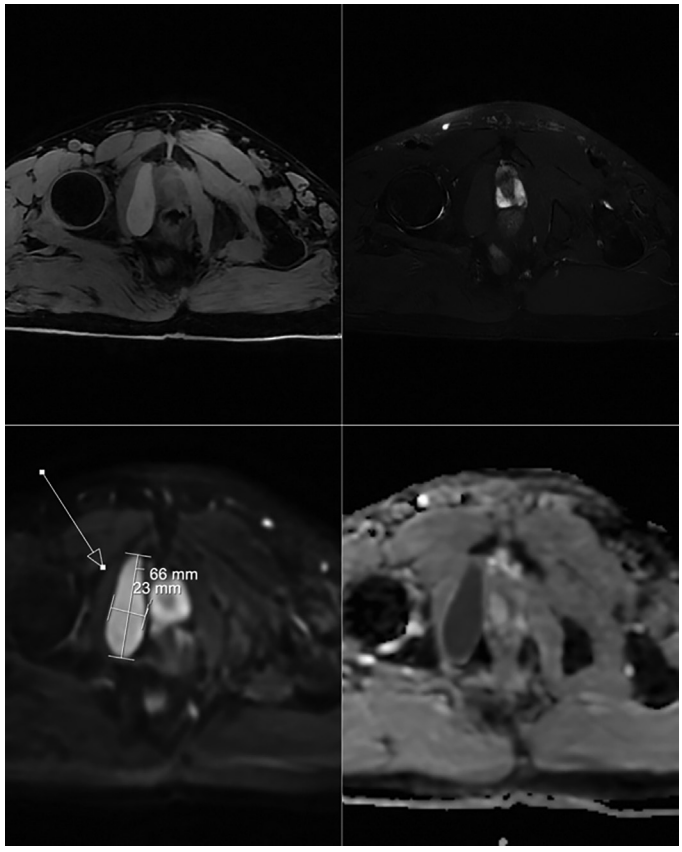

Figure 3. Axial T1 and T2 magnetic resonance imaging shows an infected cystic lesion 66x23mm with T1A hyperintense, T2A hypointense, diffusion restriction in the right posterolateral near the bladder at the level of the obturator

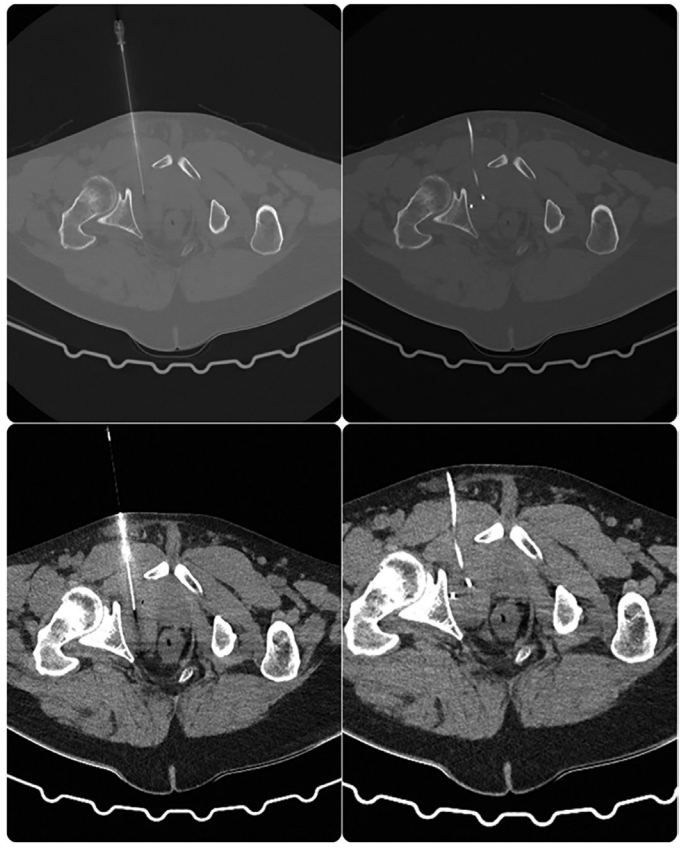

Figure 4. Aspiration of the infected cyst using a 6 Fr catheter under computed tomography guidance

Surgical intervention necessitates extensive dissection because of the deep location of the seminal vesicles within the pelvis, resulting in a high rate of morbidity. This morbidity includes risks such as injury to the erectile neurovascular bundle, rectal or bladder wall, ureter, or formation of a pelvic urinoma (11). Percutaneous drainage of the cyst, compared to surgical removal, is less invasive and can treat symptoms without causing new complications.

Conclusion

Zinner syndrome is a rare syndrome that should be considered in the presence of seminal vesicle cysts and renal abnormalities. It is important to note that excision of seminal vesicle cysts may result in postoperative complications. Therefore, the decision to undergo surgery should be made with great care and consideration.

Ethics

Informed Consent: Informed consent was obtained from the patient.

Footnotes

Authorship Contributions

Surgical and Medical Practices: E.O., Concept: H.U., Y.K., Design: E.O., B.S., E.D., Data Collection or Processing: Y.K., E.D., Analysis or Interpretation: Y.K., E.D., G.A., Literature Search: E.O., H.U., Writing: E.O.

Conflict of Interest: No conflict of interest was declared by the authors.

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