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Congenital Seminal Vesicle Cyst Associated with Ipsilateral Renal Agenesis and Cryptorchidism Causing Bladder Outlet Obstruction: A Case Report and Review of the Literature

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ABSTRACT

Seminal vesicle cysts combined with ipsilateral renal agenesis are a rare urological anomaly. We present a 24-year-old single man who suffered from difficulty urinating and irritative voiding symptoms for 4 years. The symptoms worsened in the last 6 months. A physical examination revealed right cryptorchidism with a pelvic mass. Digital rectal examination revealed a palpable large soft mass behind the prostate.

Diagnostic imaging (ultrasound, IV urography, computed tomography scan, and magnetic resonance imaging) showed a right seminal vesicle cyst. The ipsilateral kidney and ureter were absent. Open surgery cystectomy was performed, improving urinary symptoms.

INTRODUCTION

Seminal vesicle cyst (SVC) is an extremely rare disease, occurring in 0.005% of the population [1]. It is often associated with other anomalies. Zinner [2] reported the first case of SVC in combination with ipsilateral renal agenesis in 1914, and then associated anomalies have been reported in the literature [3-5]. Treatment of SVC depends on symptom existence.

Here we present a giant SVC with agenesis of the right kidney and ipsilateral cryptorchidism presented with lower urinary tract symptoms. A brief review concerning the symptoms, diagnostic procedures, and treatment options in literature are discussed.

CASE REPORT

A 24-year-old single man presented to our department with a 4-year history of lower urinary tract symptoms, constipation, and right lumbar pain. He initially paid little attention to these symptoms. However, his urinary discomfort had worsened over the preceding 6 months. His International Prostatic Symptom Score was 13.

He was obese (BMI: 34). On physical examination, his urinary bladder was palpable on the right side of the suprapubic region. External genitalia were normal, but the right testis was not palpable. The digital rectal examination revealed a soft, large, palpable cystic mass arising from the upper border of the prostate. Laboratory data were within normal ranges, especially urinalysis and creatinine. Semen analysis revealed predominantly immotile spermatozoa. Severe bladder outlet obstruction was noted. Preoperative uroflowmetry studies revealed a maximal urinary flow rate of 14 mL/s and a mean urinary flow rate of 7 mL/s. The residual urine volume was 29 mL.

Abdominal and pelvic ultrasonography could not find the right kidney, and it revealed the presence of a retrovesical hypoechoic mass measuring 18 cm. Intravenous urography could not depict the right kidney or right ureter, and it showed a contrast-filling defect of the right posterolateral surface of the bladder (Figure 1). Endorectal ultrasonography revealed a pelvic cystic mass. Computed tomography (CT) of the abdomen and pelvis confirmed right renal agenesis and the presence of a nonenhancing retrovesical cystic mass (Figure 2). Through these data we concluded an obstructive right SVC.

KEYWORDS: Renal agenesis, seminal vesicle cyst, cryptorchidism

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Figure 1. Intravenous urography showing the absence of the right kidney and compensatory enlargement of the left kidney. SVC is visible as a large impression in the bladder (arrow).

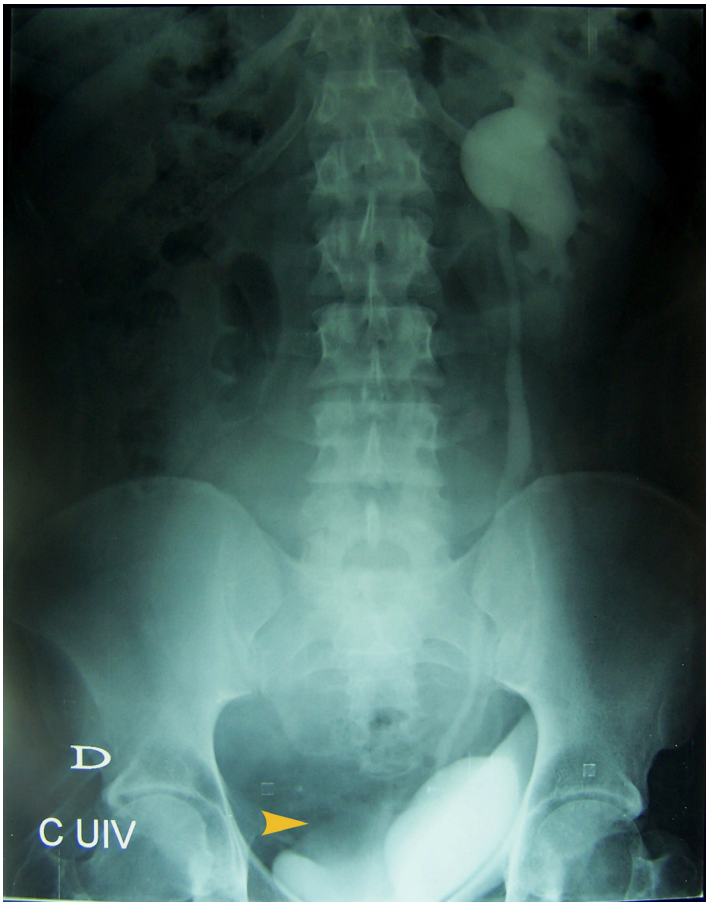
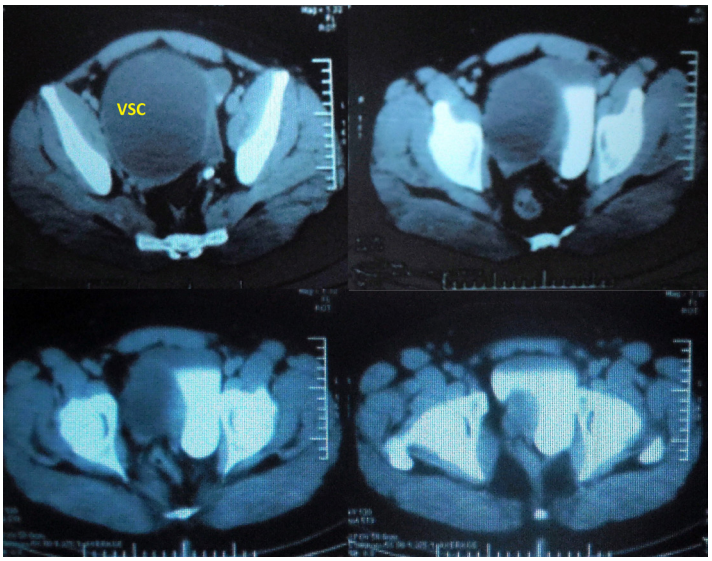


Figure 2. A CT scan of the pelvis with intravenous contrast injection: A 16.5 cm x 12.7 cm nonenhancing retrovesical mass (SVC) with no calcification, occupying mainly the right side of the pelvis, with extrinsic compression on the urinary bladder. Note that the right ureter is absent.



We decided to explore the pelvis and remove the presumed SVC. Through a standard midline suprapubic incision, the bladder was dissected medially to the left and the peritoneum was completely removed. We found a large pelvic cyst that depended on the right vesicle. The right vas deferens was traced into the wall of the mass, which was then freed. The right testis was ectopic and hypotrophic (Figure 3). This cyst contained 1 liter of brown liquid. A total cystectomy and right orchidectomy were performed. There were no operative complications or need for transfusion.

The pathological assessment of the specimens revealed benign SVC. The cystic walls were composed of fibrous connective tissue. Columnar and basal cells lined them with villous projections in hematoxylin and eosin stains (Figure 4). The cystic fluid was full of immotile spermatozoa and was not an infection. No malignancy was found.

The postoperative period was smooth, and the patient has experienced no further genitourinary discomfort. Postoperative uroflowmetry studies showed a maximal urinary flow rate of 27 mL/s and a mean urinary flow rate of 18.6 mL/s. There was no residual urine volume and the outlet obstruction had disappeared. The patient's International Prostatic Symptom Score had reduced to 4. A follow-up ultrasound at 25 months did not show any recurrence of the cyst.

DISCUSSION

Unilateral renal agenesis is present in 0.1% of newborns [6]. Genitourinary anomalies are found in 12% of men with unilateral renal agenesis [7]. SVC is associated with ipsilateral renal agenesis in 68% [7]. Kidneys with this anomaly were dysplastic or absent [8]. In the literature, this association is only reported in case reports; no series exists. Environmental and hereditary factors causing SVC are unknown [5].

SVC is diagnosed in adults during the second to fifth decade of life [5,9-11], as in our case. They are usually found at a time of greatest sexual and reproductive activity [12]. They may be congenital or acquired [12]. Congenital cysts are usually unilateral with no predilection for either side [9]. Acquired cysts are often bilateral and are seen in older patients with a history

Figure 3. A preoperative view of the pelvis.

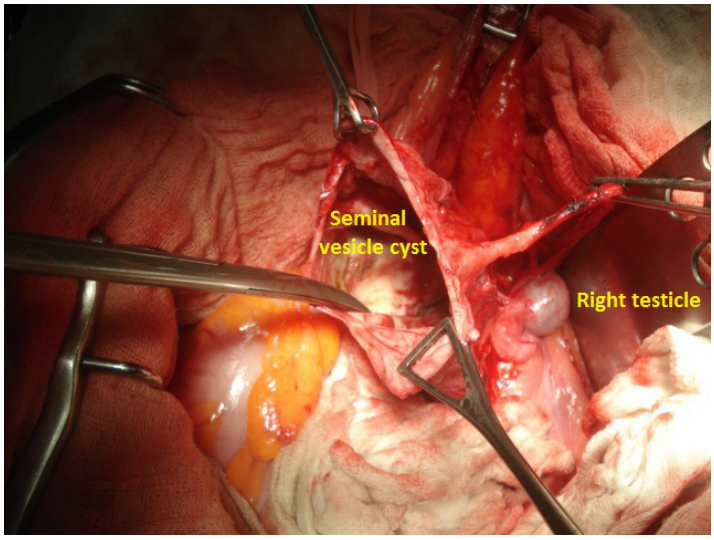
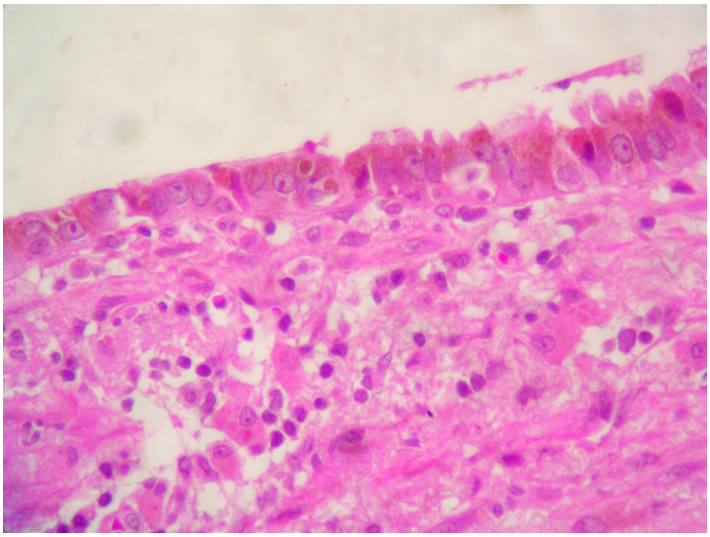


Figure 4. The histopathological view of SVC.



of chronic prostatitis or prostate surgery [11]. In our case, there had been no previous surgical interventions. An association between congenital SVC and ipsilateral renal agenesis is not unusual because both organs originate from the mesonephric (Wolffian) duct during embryogenesis [9]. Isolated failure of the development of the ureteral bud results in renal agenesis, but the remaining genital tract is unaffected. However, maldevelopment of the mesonephric duct in gestational week 12 affects the ipsilateral seminal vesicle and vas deferens, as well as the ureter and kidney [7].

SVC is usually asymptomatic [13]. Those smaller than 5 cm in diameter can remain asymptomatic and are usually discovered incidentally [11,14]. However, the cyst can grow and induce inflammation and stimulate surrounding viscera [13]. Once seminal vesicle cysts exceed 5 cm, the clinical symptoms become obvious [7]. These cysts can present with symptoms related to bladder irritation and obstruction [7,15]. The most commonly reported symptoms include abdominal, perineal, and pelvic pain; constipation; ejaculatory pain; dysuria; increased urinary frequency; hematuria; hematospermia; urinary tract infection; and symptoms of epididymitis and prostatitis [7,9,13-15]. Other reported symptoms include infertility and rarely enuresis [5,15]. In our case, the patient presented with symptoms mimicking bladder outlet obstruction without genitourinary tract infection.

SVC is usually diagnosed as incidental sonographic findings in patients with voiding complaints, or they are totally asymptomatic [16]. Diagnostic procedures include digital rectal examination, abdominal or transrectal ultrasonography (TRUS), abdominopelvic CT, and pelvic MRI [13]. Additional studies include intravenous urography, retrograde cystourethrography, cystoscopic evaluation, and vesiculography [5,10].

Roehrborn et al. [4] advocate the use of transabdominal ultrasonography as the first diagnostic procedure, because it is non-invasive, inexpensive, and brings no radiation exposure. Ultrasound showed cystic masses with heterogenous contents adjacent to the seminal vesicle [13]. Weyman and McClennan [17] and Bon et al. [18] underline the excellent diagnostic properties of ultrasonography and CT scanning, whereas Schwartz et al. [19] prefer CT scanning above ultrasonography because of the reduced chance of missing the diagnosis. Moreover, CT scan provided an excellent demonstration of associated anomalies [20]. In a series of 13 boys explored by MRI, Chen et al. found high signal intensity on T2-weighted images but variable signal intensity on T1-weighted images. They concluded that MRI is a powerful tool for detecting SVC and in delineating associated congenital anomalies of the urogenital tract [13,21]. A cystoscopy helps to confirm a hemitrigone, the absence of a ureteral orifice, and other anomalies in the bladder [14].

Patients without clinical symptoms (without pain or a functional deformity) should not be treated, and they can be monitored by TRUS [12]. They should be treated if a growth or symptoms occur [12,18]. Conventional treatment methods include open exploration with vesiculectomy, transrectal or transperitoneal aspiration of the cyst, or transurethral unroofing of the cyst [5,9,10,22]. Surgical excision of the SVC, as in our case, is the preferred definitive management because simple aspiration is often complicated by a recurrence of the cyst and infection of

the area [23]. However, conventional surgery is very invasive because of the deep location and dissection difficulty of the seminal vesicles in the retrovesical space [13].

Recently, the laparoscopic approach has been advocated as an optimal minimally invasive technique for the surgical treatment of seminal vesicle pathology. It provides excellent intraoperative access, a direct approach, magnification, good visualization with an easy approach, and minimal postoperative morbidity. Also, without damage to the bladder and rectum, the seminal vesicle can be dissected from the peritoneum that is covering the bladder and prostate. It is likely to become the treatment of choice for this rare developmental anomaly [13,24]. Seo et al. [13] have reported 4 cases of SVC with ipsilateral renal agenesis, which were successfully treated by laparoscopy (transperitoneal approach). A malignancy cannot be excluded, and histological examination of the cyst is necessary. Adenocarcinoma of the seminal vesicles has been reported [25]. Ultrasonography is used for follow-up in a patient with an asymptomatic SVC. The investigation is non-invasive, cheap, and can be performed by the urologist [5].

CONCLUSION

Congenital SVC associated with renal agenesis is a rare association and can cause lower urinary tract symptoms and infertility.

REFERENCES

1. Sheih, C. P., C. S. Hung, et al. (1990). "Cystic dilatations within the pelvis in patients with ipsilateral renal agenesis or dysplasia." *J Urol* 144(2 Pt 1): 324-327. PubMed

2. Zinner A. (1914). "Ein Fall von intravesikaler Samenblasenzyste." *Wein Med Wochenschr* 64: 605-609.

3. Donohue, R. E. and N. F. Greenslade (1973). "Seminal vesicle cyst and ipsilateral renal agenesis." *Urology* 2(1): 66-69. PubMed ; CrossRef

4. Roehrborn, C. G., H. J. Schneider, et al. (1986). "Embryological and diagnostic aspects of seminal vesicle cysts associated with upper urinary tract malformation." *J Urol* 135(5): 1029-1032. PubMed

5. van den Ouden, D., J. H. Blom, et al. (1998). "Diagnosis and management of seminal vesicle cysts associated with ipsilateral renal agenesis: a pooled analysis of 52 cases." *Eur Urol* 33(5): 433-440. PubMed ; CrossRef

6. (1980). "Case records of the Massachusetts General Hospital. Weekly clinicopathological exercises. Case 21-1980." *N Engl J Med* 302: 1246-1251. PubMed

7. Heaney, J. A., R. C. Pfister, et al. (1987). "Giant cyst of the seminal vesicle with renal agenesis." *AJR Am J Roentgenol* 149(1): 139-140. PubMed

8. Gordon, H. L. and R. Kessler (1972). "Ectopic ureter entering the seminal vesicle associated with renal dysplasia." *J Urol* 108(3): 389-391. PubMed

9. Rappe, B. J., E. J. Meuleman, et al. (1993). "Seminal vesicle cyst with ipsilateral renal agenesis." *Urol Int* 50(1): 54-56. PubMed ; CrossRef

10. Liatsikos, E. N., B. Lee, et al. (2004). "Congenital seminal vesicle cyst and coexisting renal agenesis: laparoscopic approach." *Urology* 63(3): 584-586. PubMed ; CrossRef

11. Livingston, L. and C. R. Larsen (2000). "Seminal vesicle cyst with ipsilateral renal agenesis." *AJR Am J Roentgenol* 175(1): 177-180. PubMed

12. Kao, C. C., C. J. Wu, et al. (2010). "Congenital seminal vesicle cyst associated with ipsilateral renal agenesis mimicking bladder outlet obstruction: a case report and review of the literature." *Kaohsiung J Med Sci* 26(1): 30-34. PubMed ; CrossRef

13. Seo, I. Y., H. S. Kim, et al. (2009). "Congenital seminal vesicle cyst associated with ipsilateral renal agenesis." *Yonsei Med J* 50(4): 560-563. CrossRef

14. Beeby, D. I. (1974). "Seminal vesicle cyst associated with ipsilateral renal agenesis: case report and review of literature." *J Urol* 112(1): 120-122. PubMed

15. Kenney, P. J. and M. D. Leeson (1983). "Congenital anomalies of the seminal vesicles: spectrum of computed tomographic findings." *Radiology* 149(1): 247-251. PubMed

16. Cihan, A., S. Cimen, et al. (2006). "Congenital seminal vesicle cyst accompanying ipsilateral renal agenesis and rudimentary ureter." *Int Urol Nephrol* 38(1): 133-135. PubMed ; CrossRef

17. Weyman, P. J. and B. L. McClennan (1979). "Computed tomography and ultrasonography in the evaluation of mesonephric duct anomalies." *Urol Radiol* 1(1): 29-37. PubMed ; CrossRef

18. Bon, D., M. Marroncle, et al. (1993). "[Ectopic ureteral orifice into the seminal duct with homolateral renal agenesis: contribution of ultrasonography]." *Prog Urol* 3(3): 469-473. PubMed

19. Schwartz, M. L., P. J. Kenney, et al. (1988). "Computed tomographic diagnosis of ectopic ureter with seminal vesicle cyst." *Urology* 31(1): 55-56. PubMed ; CrossRef

20. Suarez Aliago, B. and I. Rodriguez Jimenez (2007). "[Seminal vesicle cyst with renal agenesis associated with vascular anomalies. Case report]." *Arch Esp Urol* 60(9): 1 134-136. PubMed

21. Chen, H. W., S. C. Huang, et al. (2006). "Magnetic resonance imaging of seminal vesicle cyst associated with ipsilateral urinary anomalies." *J Formos Med Assoc* 105(2): 125-131. PubMed ; CrossRef

22. Dassouli, B., R. Rabii, et al. (2001). "[Seminal vesicle cyst associated with ipsilateral renal agenesis]." *Prog Urol* 11(4): 685-689. PubMed

23. Adeyoju, A. B., P. Taylor, et al. (2001). "Congenital seminal vesicle cysts: an unusual but treatable cause of lower urinary tract/genital symptoms." *BJU Int* 87(9): 901-902. PubMed ; CrossRef

24. Cherullo, E. E., A. M. Meraney, et al. (2002). "Laparoscopic management of congenital seminal vesicle cysts associated with ipsilateral renal agenesis." *J Urol* 167(3): 1263-1267. PubMed ; CrossRef

25. Lee, B. H., J. W. Seo, et al. (2007). "Primary mucinous adenocarcinoma of a seminal vesicle cyst associated with ectopic ureter and ipsilateral renal agenesis: a case report." *Korean J Radiol* 8(3): 258-261. PubMed ; CrossRef