Congenital seminal vesicle cysts associated with ipsilateral renal agenesis mimicking bladder outlet obstruction: A case report and review of the literature

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Seminal vesicle cysts combined with genitourinary anomalies are uncommon. We present a 43-year-old married man who suffered from difficulty in urination and irritating voiding symptoms for 3 years. The symptoms worsened in the last 6 months. Digital rectal examination revealed a palpable large soft mass behind the prostate. Diagnostic imaging showed a left seminal vesicle cyst with an intravesical protrusion. The ipsilateral kidney and ureter were absent. Transrectal aspiration of the cyst was performed, which improved the clinical genitourinary symptoms. The maximal and mean urinary flow rates increased from 18 to 37 mL/s and from 6 to 16 mL/s, respectively.

Key Words: renal agenesis, seminal vesicle cyst, uroflowmetry

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Congenital seminal vesicle cysts with ipsilateral renal agenesis are rare [1,2]. Small seminal vesicle cysts (<5 cm) are usually asymptomatic, whereas larger cysts lead to urinary obstructive symptoms [2]. Uroflowmetry can be used to quantify the clinical symptoms in young adult patients.

CASE PRESENTATION

In July 2008, a 43-year-old married, infertile man presented to our department with a 3-year history of difficulty in urination and irritating voiding symptoms. He initially paid little attention to these symptoms. However, his genitourinary discomfort had worsened over the preceding 6 months. His International Prostatic Symptom Score was 13. A physical examination showed normal external genitalia, but a digital rectal examination revealed a soft, large cystic mass in the prostatic region. All laboratory data were within normal ranges. Semen analysis revealed predominantly immotile spermatozoa (grade D, 59.5%). Intravenous pyelography could not depict the left kidney or ureter and showed a contrast-filling defect of the left pos-terolateral surface of the bladder (Figure 1). Computed tomography of the abdomen and pelvis confirmed left renal agenesis and the presence of a left seminal vesicle cyst (Figures 2A and 2B). Magnetic resonance imaging of the pelvis also demonstrated a seminal vesicle cyst, causing indentation of the bladder base (Figure 3). Pre-aspiration uroflowmetry studies revealed a maximal urinary flow rate of 18 mL/s and a mean urinary flow rate of 6 mL/s. The residual urine volume was 99 mL.
Severe bladder outlet obstruction was noted. Cystoscopy showed a normal right ureteral orifice and the left side of the protruding mass with normal bladder mucosa (Figure 4). The left ureteral orifice was not found. Transrectal aspiration of cyst fluid was performed successfully. The fluid was full of spermatozoa and was not an infection. No malignancy was found. Post-aspiration uroflowmetry studies showed a maximal urinary flow rate of 37 mL/s and a mean urinary flow rate of 16 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. Since discharge, the patient has regularly attended outpatient department follow-ups for 6 months and has experienced no further genitourinary discomfort.

**DISCUSSION**

An association between congenital seminal vesicle cysts and ipsilateral renal agenesis is not unusual because both organs originate from the mesonephric (Wolffian) duct during embryogenesis [1]. 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 [2].

Most seminal vesicle cysts are diagnosed in adults during the second to fifth decade of life [1,3–5]. They are usually found at the time of greatest sexual and reproductive activity. If there is insufficient drainage of the vas deferens, spermatozoa can accumulate in the seminal vesicles leading to cyst formation. Seminal vesicle cysts may be congenital or acquired [4]. Congenital cysts are usually unilateral with no predilection for either side [1]. Acquired cysts are often bilateral and are seen in older patients with a history of chronic prostatitis or prostate surgery [5]. In our case, there had been no surgical interventions. Seminal vesicle cysts smaller than 5 cm in diameter can remain asymptomatic and are usually discovered incidentally.
[5,6]. Besides, once seminal vesicle cysts exceed 5 cm, the clinical symptoms become obvious. These cysts can present with symptoms related to bladder irritation and obstruction [2,7]. The most commonly reported symptoms include abdominal, perineal and pelvic pain, ejaculatory pain, dysuria, increased urinary frequency, hematuria, urinary tract infection, and symptoms of epididymitis and prostatitis [1,2,6,7]. Other reported symptoms include infertility, hemospermia and rarely, enuresis [7]. In our case, the patient presented with symptoms mimicking bladder outlet obstruction without genitourinary tract infection.

The diagnostic workups include physical examination, transabdominal or transrectal ultrasonography, computed tomography, and magnetic resonance imaging. Additional studies include intravenous urography,
Seminal vesicle cyst with renal agenesis

Retrograde cystourethography, cystoscopic evaluation, and vesiculography [3,8]. In our patient, we performed uroflowmetry to measure the severity of outlet obstruction; it can also be a tool to identify recovery after surgical treatment. Patients without clinical symptoms should not be treated and they can be monitored by transrectal ultrasonography. Symptomatic seminal vesicle cysts often need surgical treatments. Surgical interventions include open exploration with vesiculectomy, transrectal or transperineal aspiration of the cyst, or transurethral unroofing of the cyst [1,3,8]. In this case, the obstructive symptoms were successfully relieved by transrectal aspiration of the seminal vesicle cyst fluid. The cyst fluid was full of sperms and it was sterile. After aspiration, the genitourinary symptoms was improved, the uroflowmetry showed a recovery of normal voiding and the patient has been symptom free for 6 months.

In conclusion, bladder outlet obstruction and renal agenesis can be diagnosed in young men using imaging studies. However, the development of a seminal vesicle cyst cannot be ruled out. Uroflowmetry can be used to quantify the extent of outlet obstruction and follow up recovery.

REFERENCES

先天性儲精囊囊腫合併同側腎臟發育不全以膀胱出口阻塞症狀表現：病例報告及文獻回顧

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儲精囊囊腫合併先天泌尿系統異常是不常見。我們報告一位 43 歲已婚、不孕男性遭受解尿困難及膀胱刺激症狀達 3 年之久，特別在近半年症狀加劇。肛門指診發現在攝護腺後面有一個大且質軟腫塊。影像診斷檢查指出一個向膀胱內突起的左側儲精囊囊腫，而且同側的腎臟與輸尿管消失不見。我們實行經直腸超音波儲精囊囊腫抽吸手術。術後，我們使用尿流速 (uroflowmetry) 紀錄泌尿道臨床症狀改善情況。最大尿流速及平均尿流速各自由 18 ml/s 細增加為 37 ml/s・6 ml/s 增加為 16 ml/s。

關鍵詞：腎臟發育不全，儲精囊囊腫，尿流速圖
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