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Case Reports

Congenital Seminal Vesicle Cyst: A Specific Diagnosis by Computed Tomography

Leo Drolshagen, MD* and Michael A. Sandler, MD*

Computed tomography (CT) has been shown to be of great value in the assessment of the urinary tract. However, this modality has been primarily used in the evaluation of renal masses and the staging of urinary tract carcinomas. It may also be useful in less common abnormalities, such as mesonephric duct anomalies including congenital seminal vesicle cysts. These lesions are associated with renal agenesis and may produce urinary tract symptoms, or be discovered incidentally. We present a case of a congenital vesicle cyst associated with ipsilateral renal agenesis with characteristic CT findings allowing for a specific diagnosis.

Case Report

An 18-year-old man presented with a four-month history of lower back pain. The family history disclosed that a sister had been born with bilateral renal agenesis. Excretory urography of the patient revealed non-visualization of the left kidney. Trace albuminuria was present. Rectal examination revealed asymmetry of the prostate with the left lobe smaller than the right, but no other abnormalities. Cystoscopy demonstrated a solitary right ureteral orifice. The trigone faded on the left side without evidence of a left ureteral orifice. Meatal stenosis was present.

CT evaluation, using a Picker 1200 synerview with 3.4 second scan time, was performed during administration of intravenous contrast. A left kidney was not identified in the abdomen or pelvis, confirming the diagnosis of agenesis on the excretory urogram (Fig. 1). A 3.0 cm low density mass was present in the left aspect of the pelvis in the area of the left seminal vesicle. Both the appearance and the attenuation coefficient of 6 were consistent with a cystic structure. No left seminal vesicle could be identified, although a normal right one was seen. The cystic structure mildly elevated the left floor of the bladder (Fig. 2). The diagnosis of left seminal vesicle cyst associated with ipsilateral renal agenesis was made. Since the patient's complaints of back pain were felt to be unrelated to the genitourinary tract, no further evaluation was performed.

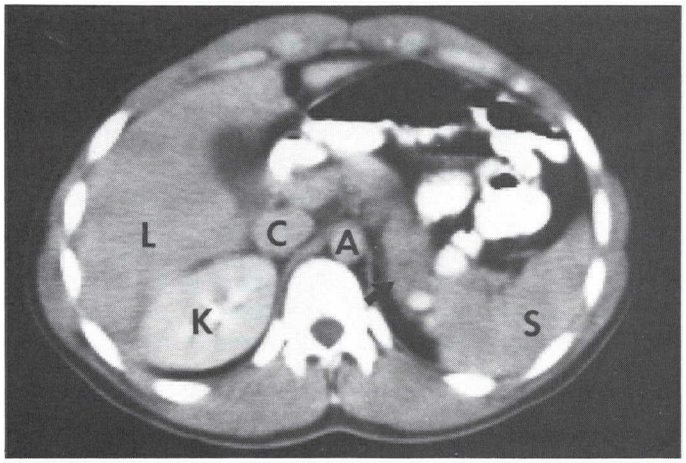

Fig. 1

Transverse CT of the abdomen shows normal right kidney (K) but no left kidney. The pancreatic tail (arrow) is seen in the bed of the left kidney, typical of renal agenesis. (S = spleen, L = liver, C = inferior vena cava, A = aorta).

Discussion

Seminal vesicle cysts associated with ipsilateral renal agenesis are rare congenital anomalies thought to be secondary to incomplete differentiation of the mesonephric duct (1,2). The seminal vesicle, vas deferens, ejaculatory duct, and ipsilateral kidney derive from the mesonephric duct on the same side. The ureteric bud derived from the mesonephric duct induces development of the kidney from the metanephric blastema on each side. Seminal vesicle cysts are probably secondary to discontinuity between the ejaculatory duct and seminal vesicle (2,3). Seminal vesicle atresia has also been associated with renal agenesis.

Seminal vesicle cysts are unilateral, with equal incidence on either side, and are generally unilocular although a multilocular cyst has been described (3). Not only are seminal vesicle cysts associated with renal

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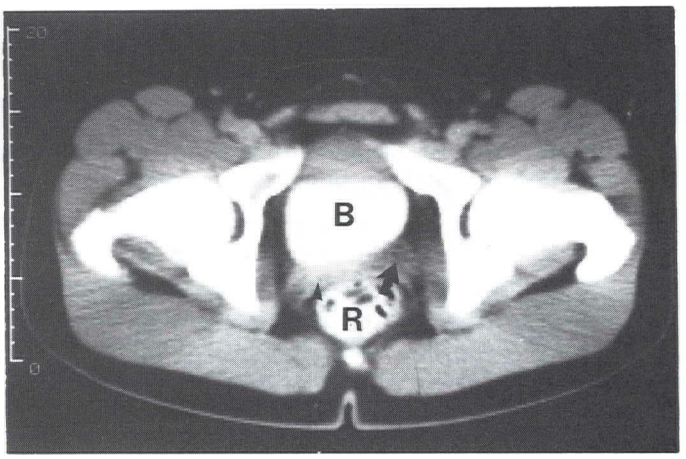

Fig. 2

Transverse CT of the pelvis shows low density area replacing left seminal vesicle (arrow), elevating the floor of the contrast filled urinary bladder (B). (R = rectum, arrowhead = right seminal vesicle)

agenesis but also with ureteral anomalies including ureteral atresia, a fibrous band replacing the ureter. Blind ending and ectopic ureters occur in patients with renal agenesis (1-5). A blind ending ureter entering into the seminal vesicle cyst instead of the bladder is a reported variant (1). Asymmetry or atresia of the ipsilateral vas deferens, prostatic lobe, or testes sometimes occurs (2).

Seminal vesicle cysts with renal agenesis are discovered most often in the third or fourth decade (2). Dysuria, perineal pain, frequency, urgency, painful ejaculation, infertility, and rarely hematospermia may be presenting symptoms if there is superimposed infection (3). Patients with an infected seminal vesicle cyst may be initially misdiagnosed as having epididymitis, prostatitis, or gonorrhea (1-5). However, uncomplicated seminal vesicle cysts usually are discovered incidentally in asymptomatic patients, as in our case.

In several cases of seminal vesicle cysts, infertility due to oligospermia has been noted, but the exact mechanism is unclear (6,7). Asymptomatic lesions do not require treatment, but infected cysts may be treated with conservative therapy, transurethral unroofing of the cyst, percutaneous aspiration, or surgical resection (8).

The seminal vesicle cyst may be palpated as a fluctuant mass between the rectum and bladder on rectal examination (3); this finding was not present in our case. Prostatic asymmetry occurs, as it did in our patient. Typically, CT or ultrasonography will identify a cystic structure in the region of the seminal vesicle posterolateral to the bladder along with ipsilateral renal agenesis (1). Seminal vesicle cysts are of water density if uncomplicated by hemorrhage or infection, but may be of higher density if complicated (2).

Lantz, et al (4) reported one case of seminal vesicle cyst demonstrated by CT, and Weyman and McClennan (1) reported two patients with a cystic mass indenting the posterolateral wall of the bladder, replacement of the normal seminal vesicle, and associated ipsilateral renal agenesis. All three cases were very similar to ours. Kenney and Leesen (2) reported two cases of congenital seminal vesicle cysts, one similar to ours, while the other one had a solid appearance due to hemorrhage (2).

Other cystic structures that may occur in the pelvis should be considered in the differential diagnosis. These include Mullerian duct cysts (which are generally midline), prostatic cysts, and utricle or ejaculatory duct cysts. Pelvic abscesses may also be predominantly cystic. However, in all these lesions both seminal vesicles and kidneys are present (2,3). Acquired seminal vesicle cysts may develop secondary to partial or complete obstruction of the ejaculatory duct, but in these circumstances both kidneys are present (2).

An excretory urogram with tomography will demonstrate the absence of the kidney and may show asymmetric bladder floor elevation. Before the advent of CT and ultrasound, vasovesiculography was used to visualize the cyst by injection of the vas deferens, ejaculatory duct, or by direct puncture of the seminal vesicle. Such procedures are no longer necessary since CT permits a specific diagnosis of uncomplicated seminal vesicle cyst. In complicated cases, such as superimposed infection or hemorrhage, the appearance of the lesion is more variable. However, in the absence of the ipsilateral kidney and seminal vesicle, the correct diagnosis should be possible.

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