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Case Report

Zinner syndrome diagnosed by magnetic resonance imaging and computed tomography: role of imaging to identify and evaluate the uncommon variation in development of the male genital tract

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ABSTRACT

Seminal vesicle cysts are a very rare condition and its often associated with ipsilateral renal agenesis. The diagnosis of seminal vesicle cysts may be delayed or missed because of the non-specific symptoms of this condition. This article reports a triad of right renal agenesis, ipsilateral seminal vesicle cyst, and ejaculatory duct obstruction (Zinner syndrome) in a 56 years old man.

A 56-year-old man was sent by his general practitioner to our department because of genitourinary discomfort history that began about a year ago but had worsened over the past 6 months.

His symptoms included perianal pain, dysuria, increased urinary frequency, ejaculation failure, therefore was initially diagnosed prostatitis.

Actually, the serum markers for prostate cancer, prostate-specific antigen and prostatic acid phosphatase, and carcinoembryonic antigen (CEA) were in the normal range, and, in addition, symptoms were not improved after antibiotic therapy.

His past medical history included situs viscerum inversus.

A few days before, the patient had performed ultrasonography (US) in another center (not available) that revealed the presence of a cystic mass localized in the pelvic region. A contrast-enhanced abdomen computed tomography (CT) was performed using a 64-row scanner (LightSpeed VCT, General Electric Medical System, Milwaukee, WI, USA) before and after the injection of iodinate contrast medium (Iomeron 350 mg/mL, Bracco Imaging, Milan, Italy).

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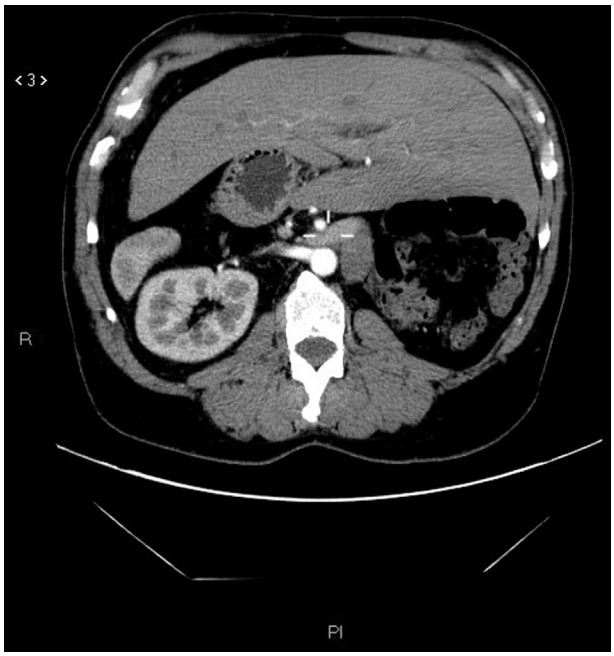

Fig. 1 – A 56-year-old man with a condition of situs viscerum inversus.

CT scan confirmed left kidney agenesis and the condition of situs viscerum inversus (Fig. 1).

In addition, CT demonstrated large lobulated multiloculated cystic lesion of left seminal vesicle with a saccular dilated enlarged ectopic ureter opening into the cystic left seminal vesicle (Fig. 2).

The lesion diameters were approximately 7.9 × 3.8 cm.

After injection of intravenous contrast material, the cystic lesion did not show enhancement (Figs. 3 and 4).

Pelvic MRI was performed with a 1.5-T scanner (Achieva, Philips medical systems, BEST, Netherlands) using a pelvic phased-array coil.

The imaging protocol included a T1-weighted (W) turbo spin-echo (TSE), a T2-W TSE, a T1-W TSE fat-saturation, performed in the transverse and coronal plane.

No intravenous contrast medium was administered.

MRI showed laterally located cystic lesion in region of left seminal vesicle.

On T1-weighted images, the multiloculated seminal vesicle cyst appeared hypointense. The cystic lesion appeared bright on T2-weighted images (Fig. 5).

The coronal T1-weighted image showed a dilated and ectopic ureter draining into the left seminal vesicle with a length of 10 cm (Fig. 6).

There was also a significant compression over the right ejaculatory duct.

Moreover, the distal part of vas deferens was compressed.

The patient was sent to a specialized urology center for correct planning treatment.

Discussion

Etiology and demographics

Renal agenesis associated with ipsilateral seminal vesicle cysts and obstruction of the ejaculatory duct is a triad of Wolffian duct anomalies and is known as the Zinner syndrome.

This syndrome is frequently associated with other anomalies such as ectopic ureter and megaureter as in our case [1,2].

Malformations of seminal vesicles and particularly seminal vesicles cysts are often associated with other abnormalities of the urogenital system development, such as unilateral renal agenesis.

In fact, both derive from mesonephric duct that form during the fourth week of gestation.

A defect of induction of ureteric bud from the metanephric blastema, often due to a deficiency of the bud development, can lead to lack or to a defect of the kidney formation.

Moreover, male people may have an atresia of the ejaculatory duct, due to a developmental abnormality of the distal part of Wolffian ducts.

Atresia of the ejaculatory duct leads over time to a collection of secretions in the seminal vesicle resulting in the formation of a cyst.

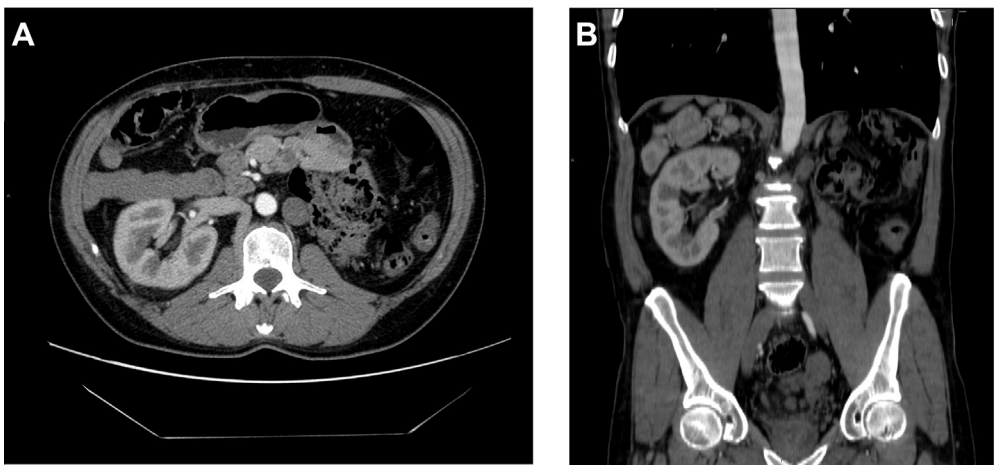

Fig. 2 – Contrast-enhanced axial CT of the abdomen (A) with coronal (B) reconstructions shows a left kidney agenesis.