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CASE REPORT

ECTOPIC URETER OPENING INTO THE SEMINAL VESICAL: A RARE CASE REPORT

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ABSTRACT

Ureteric abnormaliities are rare. Ectopic insertion of the ureter is defined as abnormal insertion of the ureter, usually distal to the trigone into the urethra in male in approximately 50% of cases. Other sites include the seminal vesicle (approximately one-third), vas deferens, bladder neck, prostate and epididymis, while the urethra and vagina are commonly affected in females. Ectopic insertion of the ureter in the genital tract is a rare anomaly. Its incidence is about 1:130000. In contrast to females who come with urinary incontinence, ureteral ectopia in males is often misdiagnosed because of its relatively covert manifestations. Most patients with this anomaly are asymptomatic until the third or fourth decade of life. We present here another case report of this unusual entity and review the clinical characteristics of such cases.

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INTRODUCTION

Ectopic insertion of the ureter is defined as abnormal insertion of the ureter, usually distal to the trigone into the urethra in male in approximately 50% of cases (Cooper and Snyder, 2002). Other sites include the seminal vesicle (approximately one-third), vas deferens, bladder neck, prostate and epididymis, while the urethra and vagina are commonly affected in females. Ectopic insertion of the ureter in the genital tract is a rare anomaly. Its incidence is about 1:130000. If an insult occurs at approximately 4 to 13 gestational week (Cooper and Snyder, 2002), embryogenesis of kidney, ureters, seminal vesicles and vas deferens can be altered. Approximately two thirds of them are associated with ipsilateral renal agenesis, because both the ureteral buds and seminal vesicles originate from the mesonephric (wolffian) duct (Denes *et al.,* 1986). In contrast to females who come with urinary incontinence, ureteral ectopia in males is often misdiagnosed because of its relatively covert manifestations. Most patients with this anomaly are asymptomatic until the third or fourth decade of life (Das and Amar, 1981). We present here another case report of this unusual entity and review the clinical characteristics of such cases.

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CASE REPORT

A 40yrs old male came with complaints of suprapubic pain, perineal discomfort, dysuria and increased frequency of micturation since last 15 years. Per abdominal examination suggested suprapubic tenderness and tender and indurated left spermatic cord. On per rectal examination there was prostatic tenderness with palpable and tender left side seminal vesicle. Routine blood and urine investigations were normal, semen culture was positive for which culture specific antibiotics were given.

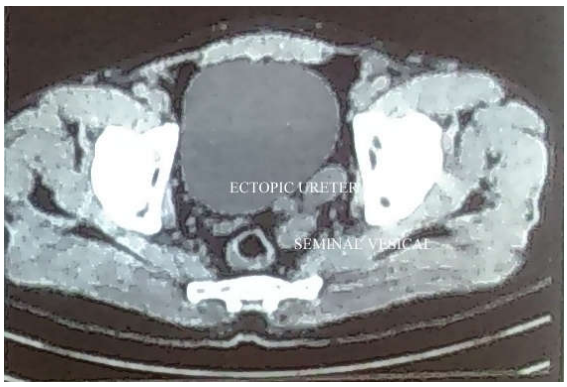

Figure 1. CT image showing close association of ectopic ureter and seminal vesical

USG suggested atrophic left kidney and hypertrophic right kidney with an ill-defined hypoechoic area in left antero-lateral portion of the prostate gland measuring 1.7x1.4 cm with internal tiny cystic spaces, the left ureter shows abrupt termination near the lesion.

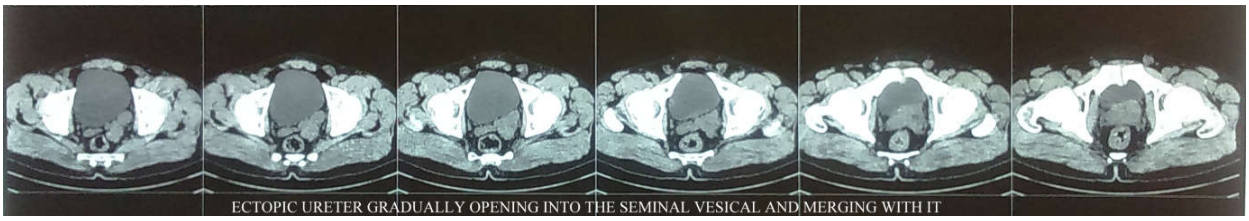

Figure 3. Reconstructed image showing relationship of ectopic ureter and seminal vesical

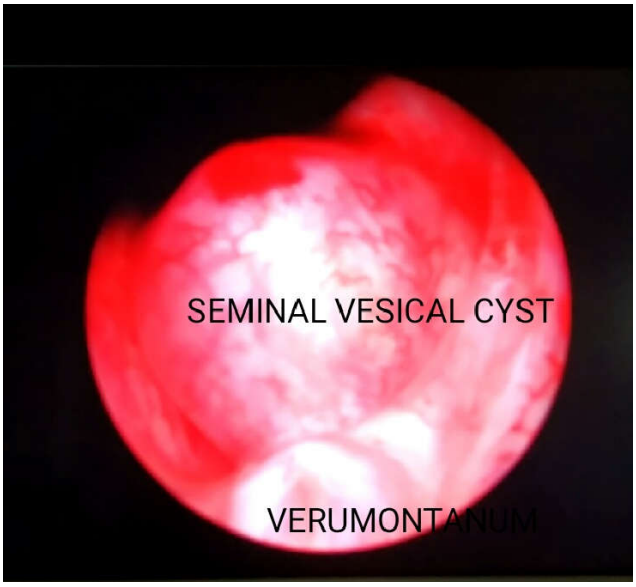

Figure 4. Cystoscopic view showing cystic formation of seminal vesical due to ectopic ureter

A CT scan showed left small kidney with compensatory enlargement of right kidney, dilated left ureter, left ureteric opening in seminal vesical with hypertrophy of the left seminal vesical (Fig 1,2,3.). DTPA scan showed non-functioning left kidney. Diagnostic cystoscopy showed seminal vesical cyst just proximal to verumontanum with hemitrigone with normal right ureteric opening (Fig 4). Laproscopic nephroureterectomy was done and the seminal vesical cyst was aspirated during cystoscopy. Histopathologic examination confirmed left dysplastic kidney.

DISCUSSION

The ureteral bud arises from the dorsal part of the distal mesonephric duct and extends dorso-cranially to meet and induce differentiation of the metanephric blastema, from which the kidney will develop. The mesonephric duct will differentiate to epididymis, ejaculatory duct, vas deferens, seminal vesicle, and hemitrigone. Complete failure of the mesonephric duct results in absence of ipsilateral kidney, ureter, hemitrigone, and seminal vesicle. Anomalous development of the distal mesonephric duct results in atresia of the ejaculatory ducts and abnormal ureteral budding; the former leads to obstruction and cystic dilatation of the seminal vesicles with development of seminal cysts, the latter leads to renal agenesis or dysplasia (Ghonge *et al.,* 2010; Livingston and Larsen, 2000; Carbone *et al.,* 2007). Ectopic ureter that opens into the seminal tract may remain undiagnosed in children because it does not become symptomatic until the onset of sexual activity. Literature reports a majority of cases becoming symptomatic around the third or fourth decade of life.

Symptoms of ectopic ureter that opens into the seminal tract are epididymitis, pain located in the perineum, dysuria, frequency, urgency, but they may not appear until sexual activity (Carbone *et al.,* 2007). Our patient also had similar symptoms. Inspite of a large seminal vesical cyst he had no infertility problem and he had three children. A physical examination may reveal an indurated, tender epididymis and ductus deferens, or a palpable cystic mass associated with seminal vesicle upon a digital rectal examination. However, the physical examination may exhibit normal findings (Cherullo *et al.,* 2002). Our case also had tender and indurated spermatic cord. Per rectal examination suggested prostatic tenderness with tender and palpable left seminal vesicle. Cystoscopy may reveal an absent ipsilateral hemitrigone, intravesical cyst protrusion and any other anatomical abnormality of the bladder (Hirano A Ogawa T). In our patient, the left hemitrigone was missing, with an existing seminal cyst (fig.4). Cystoscopy was also beneficial for ruling out any intravesical pathology. Various imaging modalities have been described for diagnosis of ectopic ureter. Excretory urography can show ipsilateral renal dysgenesis and an abnormal appearance of the collecting system (Kenney and Leeson, 1983). A large cyst may show an extrinsic smooth-walled filling defect in the bladder that is indicative of a seminal vesicle cyst. Ultrasonographic findings can show dysplastic or atrophic ipsilateral kidney, confirm the cystic nature of the pelvic masses, determine the relative size and

location, and define intraprostatic anatomic characteristics (King *et al.,* 1991). Findings on seminal vesiculography include dilatation, a mass effect with deformity of the seminal vesicle, ejaculatory duct stenosis, and reflux of contrast material in an ipsilateral ectopic ureter. Connections between malformations of the seminal and urinary tracts may also be shown. Computed tomography can accurately show renal anomalies and define pelvic anatomic characteristics. Also, it may show a cystic pelvic mass with a thick, irregular wall as a solid mass and apparent enlargement of the ipsilateral seminal vesicle (Trigaux *et al.,* 1991). Other findings could include a well-defined, low-attenuation retrovesicular mass arising from the seminal vesicle, cephalic to the prostate gland, with associated renal anomalies and a dilated ureter opening into the seminal vesical. The multiplanar ability of magnetic resonance imaging to show abdominal and pelvic anatomic structures and to differentiate cystic malformations of the pelvis makes it the ideal imaging study. In our case CT scan showed left small kidney with compensatory enlargement of right kidney, dilated left ureter, left ureter opening in the seminal vesical (Fig. 1, Fig. 2 & Fig. 3). If the symptoms are mild, conservative treatment with antibiotic or transurethral needle aspiration of cyst is suitable for the patients. For symptomatic patient, invasive treatments including exploration, laparoscopic and robotic nephroureterctomy with seminal vesiculectomy are suggested (Cooper *et al.,* 2002). However, complication such as impotence, urinoma and pelvic organ injury should be considerated. Therefore, minimal invasive surgery with laparoscopy and robotic surgery had been applied for removing the seminal vesicle cyst alongwith the ureter and the dysplastic kidney. Decrease of complication, blood loss and hospital day are the benefit of minimal invasive surgery (Pereira *et al.,* 2009).

Conclusion

Ectopic ureteric opening in seminal vesicle with ipsilateral renal agenesis is rare but this association is known. Ultrasound can show the atrophic kidney with ipsilateral dilated ureter with dilated seminal vesical as a cystic mass. CT and MRI can provide a more detailed analysis and accurate delineation of the ureteral insertion. Treatment is considered only for symptomatic patients and is surgical.

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