

# Fetal Ureterocele: Case Report

## FETAL ÜRETEROSEL

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### Abstract

Routine examination of 30-year-old primigravida at 22 weeks showed a small non-obstructive ureterocele. No associated anomalies were detected. Patient was followed up to 38 weeks at 2-3 weeks interval. No pejorative evolution occurred during the pregnancy. Postnatal ultrasonography examination showed normal kidneys, no pyelectasis but ureterocele at the lower portion of the bladder.

**Key Words:** Ureterocele; urogenital abnormalities

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### Özet

30 yaşında primigravid hastanın 22. haftada yapılan rutin ultrasonografi incelemesinde obstrüksiyona neden olmayan küçük bir üreterosel tespit edildi. Beraberinde başka bir anomali görülmedi. Olgu 38. haftaya kadar 2-3 hafta aralarla takip edildi. Gebelik süresince mevcut patolojide ilerleme olmadı. Postnatal ultrason incelemesinde mesane alt ucuna lokalize üreterosel izlendi. Böbrekler normaldi ve piyelektazi gözlenmedi.

**Anahtar Kelimeler:** Üreterosel; ürogenital anormallikler

**U**reterocele is herniation of the cystic end of a lower ureter, lying between the mucosa and the bladder muscle, ballooning inside the bladder. It is the most common cause of bladder outlet obstructions in infant girls.<sup>1</sup>

The common clinical presentations include urinary tract infections, pyelonephritis, urinary septicemia and urinary incontinence. Prolapse into the bladder outflow tract may result in obstruction, renal dysplasia, vesicoureteral reflux, inefficient voiding, diminished bladder storage capacity and decreased function.<sup>1,2</sup>

Prenatal diagnosis decreases morbidity and potential adverse outcomes related to infection. Prenatal diagnosis is also associated with a decreased rate of secondary procedures independent of the type of ureterocele.<sup>2</sup>

In this case report, an ureterocele that was diagnosed prenatally and managed conservatively was discussed.

### Case Report

A routine examination of 30-year-old primigravida at 13 weeks of gestation demonstrated a single intrauterine pregnancy without any abnormality. Nuchal translucency was measured as 2 mm. Ultrasound examination and triple test were done at 16 weeks and both of them were normal. Repeat examination at 22 weeks showed a small non-obstructive ureterocele with the size of 14 mm in a 30 mm diameter bladder. No pyelectasis or renal abnormality were seen. No associated anomalies were detected. All other laboratory tests including TOCRH were in normal limits. Control examination at 25 weeks revealed mild enlargement of ureterocele (16.8 mm) (Figure 1). Written informed consent was obtained.

Patient was followed up to 38 weeks at 2-3 weeks interval. No pejorative evolution occurred during the pregnancy. Uterine contractions were

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**Figure 1.** Ultrasound image of the case.

started spontaneously at 38 weeks. A 3300 g female infant was delivered by C-section due to breech presentation. Postnatal ultrasonography examination showed normal kidneys, no pyelectasis but ureterocele at the lower portion of the bladder.

### Discussion

The ureterocele is congenital cystiform dilatation of the terminal submucosal ureter. It is a sacular out-pouching of the distal ureter into the urinary bladder. The precise embryologic etiology of the ureterocele is not known. The most commonly accepted theory is the obstruction of the ureteral orifice during embryogenesis, with incomplete dissolution of the Chwalla membrane (The Chwalla membrane is a primitive thin membrane that separates the ureteral bud from the developing urogenital sinus). Failure of this membrane to completely perforate during development of the ureteral orifice is thought to explain the occurrence of a ureterocele.<sup>3</sup>

Ureteroceles occur in approximately 1 in every 4000 children. Females are affected 4-7 times more often than males. Few cases have been diagnosed prenatally.<sup>3,4</sup> They are more common on the left side, and 10-15% are bilateral.<sup>5</sup>

Ureteroceles are classified by whether they occur with single or duplicated systems (ureters) and by the location of ultimate drainage. Ectopic

(infantile) ureteroceles usually drain into the bladder neck or proximal urethra. They are more likely to be associated with duplicated systems. Studies of infants and children with duplex systems and hydronephrosis showed that roughly 50% had associated ureteroceles.<sup>3</sup> Other anomalies include crossed-fused ectopia, dysplastic kidneys, abnormal testes and cardiac abnormalities.<sup>5</sup>

Ureteroceles appear as echolucent thin-walled cyst-like structures within or about the bladder. A recent study showed that prenatal sonography identified only 30% of cases of duplex system with upper pole hydronephrosis and only 5% of ureteroceles. The authors describe difficulties including the ureterocele being mistaken for bladder if the bladder is empty and a full bladder effacing the ureterocele.<sup>3</sup>

Prolapse into the bladder outflow tract may result in obstruction, renal dysplasia, vesicoureteral reflux, inefficient voiding, diminished bladder storage capacity and decreased function. Severe, febrile urinary tract infection is the most common postnatal presentation of ureteroceles, but they may, rarely, prolapse and acutely obstruct the bladder outlet. Once an ureterocele is identified sonographically, a voiding cystourethrogram to detect vesicoureteral reflux (VUR) and a 99m-technetium dimercapto-succinic acid renal scan to evaluate the function of the different portions of the kidney are mandatory. VUR in the lower pole is observed in 50% of cases and in the contralateral kidney in 25%. Damage from obstruction is a progressive process, which may develop into bilateral renal dysfunction. As such it is important to perform serial ultrasonographic evaluations of fetal obstructive uropathies.<sup>6</sup>

The prenatal detection of ureterocele is associated with fewer urinary tract infection and early endoscopic management that may decrease the need for additional surgery. It allows administration of prophylactic antibiotics from birth until surgical correction.<sup>7</sup>

Some prenatally diagnosed ureteroceles have benign clinical course and don't require surgical intervention with available followup. Most pa-

tients with ureterocele are relieved of all symptoms by the definitive surgery, with long-term follow-up studies showing no evidence of obstruction, reflux, urinary tract infection or renal function deficit. These excellent results are not, however, universal and depend upon early diagnosis of ureterocele, antibiotic prevention/treatment of infections and appropriate choice of surgical procedure.<sup>8</sup>

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