

« Case Report »

## A case report on neonatal epididymo-orchitis

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### Abstract

Epididymo-orchitis is rare in neonatal period and is caused by bacterial organism after bacteremia or retrograde reflux due to genitourinary abnormality. The most common bacterial organism is *Escherichia coli* (*E. coli*). We reported a neonate with epididymo-orchitis due to *E. coli*. There was no urinary tract abnormality. Blood, urine and cerebrospinal fluid culture were negative.

**Keywords:** urinary tract infection, ultrasonography, *Escherichia coli*

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## Introduction

Acute scrotum is rare in newborns; however, it is an urgent case in neonatology. Three main causes of acute scrotum in neonates are neonatal testicular torsion and its appendix, the inguinal herniation, and epididymo-orchitis (1). Testicular torsion and inguinal hernia are surgical urgency, although appropriate antibiotic therapy is treatment of choice for epididymo-orchitis (2, 3).

## Case report

A 12-day-old baby normally born to a 21 year old mother with good Apgar score, was referred with complaints of swelling, scrotal redness and severe restlessness to Ahvaz Imam Khomeini Hospital. On physical examination, the infant had restlessness with an axillary temperature of 37.5 °C. Both sides of the scrotum were swollen, edematous, erythematous, tender and warm with normal cremasteric reflex and negative transillumination.

### Patients' sonographic examination results:

Kidneys, urinary tract and bladder were normal

### Laboratory Results

WBC	20000/ $\mu$ l (Poly (70%), Lymph 30%)
Hgb	9.7 g/dl CRP: +++
Urinalysis	35 - 40 RBC, 2-3 WBC, and Hemoglobin: ++
Urine C	Negative
Lumbar Puncture	Negative
Blood culture	Negative

### Real-time and Doppler sonography of the scrotum

The scrotum was swollen, right and left testicles' sizes were 12  $\times$  5 mm and 13  $\times$  6 mm respectively, the parenchymal echo of both testicles were increased and the epididymes were thick in both sides. In the vicinity of both testicles area there was an internal heterogeneous hypoecho, suggesting accumulated fluid along with increased testicles and epididymal vascular blood flow. From accumulated fluid in the testicles 2 ml of turbid fluid was aspirated under ultrasound guide. Laboratory results showed; protein 53 mg/dl and glucose 10 mg/dl. White blood cells differentiation showed 95% neutrophils and 5% lymphocytes. Culture of aspirated fluid was positive for *E. coli* and was sensitive to ampicillin, gentamicin, amikacin, imipinem and cefotaxim.

### Radiological examination

Voiding cystourethrogram (VCUG) and intravenous pyelogram (IVP) were normal.





### Discussion

Epididymo-orchitis is a very rare disease in the neonatal period (3). Differentiating this condition from testicular torsion and inguinal hernia is highly significant because emergency surgical intervention is the treatment of the latter two conditions; however, for epididymo-orchitis conservative therapy and appropriate antibiotic coverage is the remedy (1-3). Gram-negative bacteria in epididymo-orchitis are common especially *E. coli* (1,4). Nevertheless, *Pseudomonas aeruginosa* have also been reported in hospitalized patients (3). The pathologic organisms are transmitted to epididymes and testicles through blood circulation or following urethral reflux to vesicoureteral or ectopic vesicoureter to vasodeferens (1-4). Kabiri *et al.* reported the improper connection between the ureter and vasodeferens; however, there was no same situation in Chang as well as present case admitted to Imam Khomeini Hospital. In Kabiri's patient the connection of urinary tract and vasodeferens was the reason of epididymo-orchitis (3); however, in Chang *et al.* (4) and our case no abnormalities of the urinary system were observed.

In admitted patient in this study the treatment was complete followed by the laboratory findings, Doppler ultrasound as well as results obtained from cultured aspirated liquid. In addition, the concluding diagnosis of epididymo-orchitis was confirmed subsequent to the late bloodstream infections. In order to reduce pain and swelling, the testicles were situated in a position with less movement, slightly above the body surface. With the

above measures, the patient's agitation was considerably reduced. Furthermore, the edema and swelling of the testicles were noticeably decreased. Antibiotic regimen was initiated with vancomycin and amikacin and then vancomycin was changed to ampicillin after obtaining the results of aspirated fluid culture and antibiotic sensitivity test. VCUg was performed when urine cultures had been negative and the result was normal. After ten days antibiotic therapy, the conventional and Doppler ultrasound became normal. IVP was normal 14 days after the completion of treatment and before the patient being discharged. The infant was discharged in good condition. Two weeks, one month and two months after discharge, the patient was again examined with absolutely normal condition.

The differentiation between epididymo-orchitis versus testicular torsion is important. Testicular torsion requires urgent surgery while, drug therapy are required for epididymo-orchitis. Physical examination, simple and Doppler ultrasound, cremasteric reflex and illumination of the scrotum help differentiate between epididymo-orchitis testicular torsion.

In Conclusion Epididymo-orchitis is a rare disease in infancy. The source of infection is via blood or aberrant urinary tract. This study has reported an epididymo-orchitis caused by *E. coli* confirmed by positive culture of aspirated scrotal collection. Cultures of blood, urine and cerebrospinal fluid were negative. Imaging studies of urinary tract were normal.

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