

Bilateral Septic Neonatal Orchiepididymitis – Case Report

I Djordjevic, D Zivanovic, A Slavkovic, Z Marjanovic

ABSTRACT

Neonatal epididymo-orchitis is a rare condition, causing testicular pain in neonatal boys. It represents epididymo-testicular inflammation which commonly coexists with urinary tract infections and malformations. The idiopathic type is extremely rare. We present a case of a seven-day old male neonate with advanced septic form of idiopathic orchiepididymitis and no associated urinary tract anomalies. The boy was hospitalized with signs of sepsis, anterior abdominal wall phlegmona and bilateral acute scrotum. Colour Doppler echosonography indicated epididymo-testicular inflammation with increased vascular flow. The patient underwent surgical exploration of both scrota in order to evacuate purulent content and fibrin. Cultures of *Enterobacter* spp were detected in hemiscrotal pus. Prompt administration of antibiotics was done. The postoperative course was uneventful. We suggest that every male baby must be very meticulously examined by a neonatologist in the early postnatal period, in order to prevent infertility.

Keywords: Epididymo-orchitis, neonatal, sepsis

Orquiepididimitis Bilateral Séptica Neonatal: Reporte de Caso

I Djordjevic, D Zivanovic, A Slavkovic, Z Marjanovic

RESUMEN

La epidídimo-orquitis neonatal es una condición rara, que causa dolor testicular en niños recién nacidos. Se trata de una inflamación epidídimo-testicular que coexiste comúnmente con infecciones urinarias y malformaciones. El tipo idiopático es extremadamente raro. Presentamos el caso de un neonato de siete días de nacido con una forma séptica avanzada de orquiepididimitis idiopática, no asociadas a anomalías de las vías urinarias. El niño fue hospitalizado con signos de sepsis, flemones de la pared abdominal anterior, y escroto agudo bilateral. La ecosonografía Doppler a color indicó una inflamación epidídimo-testicular con aumento del flujo vascular. Al paciente se le realizó una exploración quirúrgica de ambos scrotos con el propósito de evacuar fibrina y contenido purulento. Se detectaron cultivos de *Enterobacter* spp en el pus hemiescrotal. Se administraron antibióticos inmediatamente. El período postoperatorio transcurrió sin incidentes. Sugerimos que cada bebé varón sea examinado minuciosamente por un neonatólogo en el período postnatal temprano para prevenir infertilidad.

Palabras claves: Epidídimo-orquitis, neonatal, sepsis

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INTRODUCTION

Neonatal epididymo-orchitis is a rare condition, causing testicular pain in neonatal boys, with an incidence of approximately 2–7% (1). It represents epididymo-testicular inflammation which commonly coexists with urinary tract infections, vesicourethral reflux and neonatal sepsis in advanced cases. It is always difficult to make a differential diagnosis between neonatal testicular torsion and orchiepididymitis.

From: Clinic for Paediatric Surgery, Niš, Serbia.

Correspondence: Dr I Djordjevic, Knjaza Miloša 63, 18220 Aleksinac, Serbia. E-mail: ivonadj74@gmail.com

CASE REPORT

A male infant in the seventh day of life was admitted to hospital in a critical condition with fever, infraumbilical phlegmona and rectal temperature more than 39 °C. Both hemiscrota were extremely erythematous, swollen and painful (Fig. 1 A–B).

Initial blood test revealed white blood cell (WBC) count of $33.0 \times 10^9/L$ and low level of platelets ($90 \times 10^9/L$) with C-reactive protein of 312 mg/L. Erythrocyte sedimentation rate was 80 in the first hour. Blood culture was positive for *Enterobacter* spp. The paediatrician suggested lumbar puncture due to high fever and septic signs (tachycardia up to 220 per

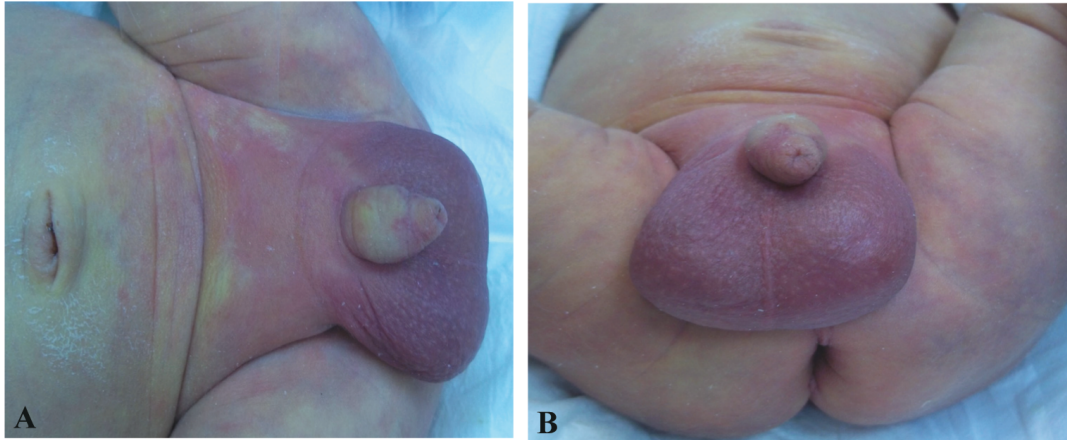


Fig. 1A–B: Patient with severe scrotal hyperaemic groins. The inner sides of both femoral regions, perirectal space and whole infraumbilical region are phlegmonous.

minute, fever up to 39.5 °C and high inflammatory parameters) in order to exclude meningitis. No pathogenic cultures were found in the cerebrospinal fluid. Chest radiography and plain radiograph of the abdomen in the upright position revealed no pneumonia or pneumoperitoneum.

Echsonography revealed a significant amount of free fluid and fibrin in the caudal parts of the abdomen and pelvis and bilaterally in the scrotum. The testicles and epididymis were non-homogeneous with impeded epididymo-testicular differentiation. Colour Doppler echosonography revealed swollen testicles with increased arterial and venous flow.

The patient underwent surgical exploration of both hemiscrota. The testicles and epididymis were very swollen and erythematous, covered with fibrin and with a lot of pus in the hemiscrotum (Fig. 2).



Fig. 2: Hyperaemic testis and epididymis covered by layers of fibrin, with very thick scrotal skin.

Purulent content and fibrin deposits were evacuated and drains were placed, over four days, because of the abundant secretion. Cultures of *Enterobacter* spp were isolated in scrotal pus. The patient was on dual antibiotic therapy for seven days (meronem 30 mg/kg/day and amikacin 15 mg/kg/day). The postoperative course was satisfactory, fever disappeared completely and the patient became asymptomatic.

Repeat echosonography examinations of the urogenital tract and testicles were performed during hospitalization and then six months after surgery, but there were no urological anomalies. Repeat urine culture was sterile.

DISCUSSION

Bilateral orchiepididymitis occurs predominantly in puberty. It is extremely rare in the neonatal period (incidence 2–7%) and its appearance in that period is associated with a high risk of developing septic complications due to the low immune response of neonates. Acute neonatal epididymitis (ANOE) should be distinguished from testicular torsion. Testicular scintigraphy (2) is capable of distinguishing testicular torsion from ANOE but Doppler ultrasonography is highly recommended for prompt diagnosis without risk of radiation.

Acute neonatal epididymitis can be associated with predisposing anatomical abnormality.

Routine ultrasound examination of the urinary tract, abdomen and pelvis is required to diagnose coexisting anatomical abnormalities (3, 4) *eg* vesicoureteral reflux, ureteral duplication and ectopia, and bladder diverticulum that are noted in patients with ANOE with an incidence of up to 50% (5, 6). Isolated ANOE is a consequence of systemic viral and bacterial infections, or perinatal injury. In the index case, abdominal and pelvic echosonography excluded urogenital anomalies and systemic neonatal infection was highly suspected to be the cause of ANOE development.

Enterobacter species are Gram-negative coliform bacteria, causing opportunistic infections in the cases of transient or permanent host immunodeficiency. In recent years, *Enterobacter* has become the most important cause of nosocomial and urinary tract infections especially in immunocompromised and septic patients (7), as it was documented in the index case.

Due to the retrograde passage of pus from scrotal spaces to the abdominal cavity through patent peritoneal processus vaginalis, surgical intervention was necessary in order to drain the pus. Administration of antibiotics is the treatment of choice in patients with ANOE, with no need for surgery. However, in advanced cases, surgical exploration is necessary for evacuation of the purulent contents. We considered that failure to do so could jeopardize the patient's future fertility. Taking samples of the pus and urine is mandatory for microbial culture. This is why all patients with ANOE must undergo routine ultrasound examination of the abdomen and urinary tract. Excluding testicular torsion by colour Doppler echosonography is mandatory.

CONCLUSION

Although rare, bilateral orchiepididymitis is potentially a very dangerous condition that progresses rapidly and often leads to sepsis and future infertility. Due to a patent peritoneal proces-

sus vaginalis, inflammation can spread very quickly from scrotum to peritoneal cavity and the anterior abdominal wall. In each male newborn, testicles should be very meticulously examined by a neonatologist in the early postpartal period. In all cases of doubt, a paediatric surgeon should be consulted.

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