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Case Report

Idiopathic Neonatal Priapism - Case Report

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Received: June 10, 2024; **Published:** June 14, 2024

Abstract

Introduction: Priapism is a prolonged penile erection not associated with sexual stimulation, typically classified into ischemic and non-ischemic types. Neonatal priapism is characterized by its occurrence within the first 28 days of life. Current data support the hypothesis that neonatal priapism is a relatively benign form of non-ischemic priapism.

Case Presentation: We present a case of a full-term male newborn from healthy parents with a monitored pregnancy and normal prenatal ultrasounds. At 36 hours of life, he exhibited a semi-rigid, painless penile erection. Doppler ultrasonography indicated a normal penile structure, patent cavernous arteries with symmetric flow, and no signs of venous thrombosis. After excluding secondary causes, idiopathic neonatal priapism was established, and a conservative approach was adopted. A spontaneous and complete resolution was observed by 72h of life. During follow-up, the patient remained asymptomatic, with no recurrence or sequelae.

Discussion: Idiopathic neonatal priapism is a rare condition with no established treatment protocols. Unlike priapism in older children, where ischemic etiology demands prompt intervention, idiopathic neonatal priapism can be managed conservatively, with expectations of complete resolution without long-term issues.

Conclusion: This case presents an instance of idiopathic neonatal priapism with no underlying etiological cause identified after investigation. The expectant management approach was found to be therapeutically successful.

Keywords: *Priapism; Idiopathic Neonatal Priapism; Neonatal*

Introduction

Priapism is defined as a prolonged penile erection, complete or partial, lasting more than 4 hours and not associated with sexual stimulation [1]. According to typical findings on physical examination, penile Doppler ultrasound, and cavernous blood gas analysis, it classically divided into two categories: ischemic (low-flow, veno-occlusive) and non-ischemic (high-flow, arterial) [1,2]. The underlying etiology varies with age and population groups, including blood dyscrasias (e.g. polycythemia), neurological, traumatic, neoplastic, and pharmacological causes [2]. In pediatric cases, sickle cell disease is the most common cause of priapism [1,3]. The clinical approach should be directed at the underlying cause, with the primary goal being the prevention of complications such as penile deformity and erectile dysfunction [3].

In the particular case of neonatal priapism, the penile erection occurs in the first 28 days of life [1,4]. With few cases documented in the literature, the incidence is unknown [5]. Clinically, neonatal priapism, manifests as a semi-rigid and painless erection [6] that potentially can maintain for 2 to 12 days (median 5 days) [1,4]. As for the underlying mechanism, Meijer and Bakker [6] suggested that neonatal

priapism represents a form of non-ischemic priapism and Dust N., *et al*. [1], through a case of neonatal priapism with penile Doppler ultrasound showing normal arterial and venous flow and cavernous blood gas analysis, provided results consistent with non-ischemic etiology. These data support the hypothesis that priapism in the neonatal period is a relatively benign form of non-ischemic priapism, in favor of a conservative approach [1]. Even though follow-up data are limited, there are no reports of long-term complications such as erectile dysfunction resulting from non-ischemic priapism episodes [2].

Case Presentation

Full-term male newborn, from healthy parents, a monitored pregnancy with normal prenatal ultrasounds and maternal tobacco habits was eutocic delivered. APGAR 9 and 10 at the 1st and 5th minutes, no need for neonatal life support and objective examination without peculiarities.

At 36 hours of life, the newborn presented a persistent penile erection (Image 1). He appeared to be comfortable, without pain, with no discoloration of penis and scrotum, and testicles were palpable, with the left testicle on the inguinal canal. Clinical examination didn´t show other findings. A complete blood count was normal according the age and C-protein reaction was negative. In addition, a penile ultrasonography with a doppler was requested and revealed normal penile structure, patent cavernous arteries with symmetric flow, and no signs of thrombosis in veins (Image 2 and 3).

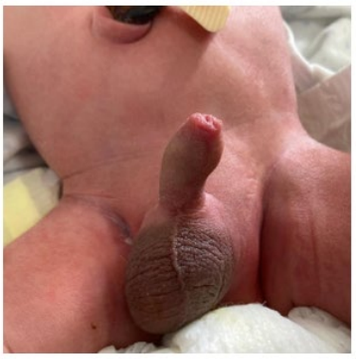

Image 1: *Persistent penile erection at 36h of life.*

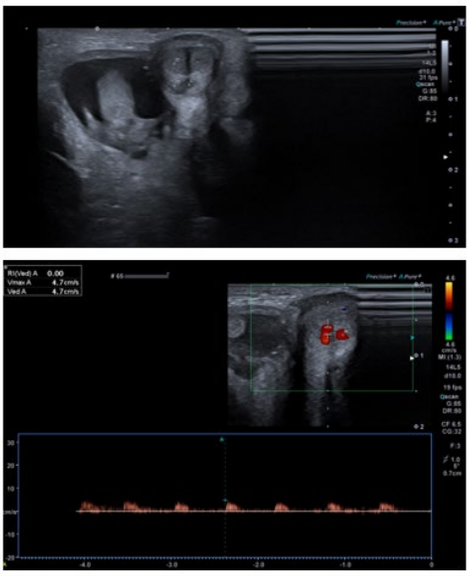

Image 2 and 3: *Transverse image of the middle third of the - probe on the dorsal side: 2) normal anatomy, with the dorsal corpora cavernosa and in the ventral midline, the corpus spongiosum surrounding the urethra; 3) color and spectral doppler, it reveals the patency of the cavernous arteries with normal systolic acceleration time.*

Taking into account the clinical presentation, physical examination, and supplementary evaluation, the diagnosis of idiopathic neonatal priapism was established. The watchful waiting approach was maintained. At 3rd day of life, a spontaneous and complete resolution was observed. On follow-up until six months of age, the patient maintained asymptomatic, without recurrence of penile erections and normal examination.

Discussion

Exceptionally, for one case associated with pyocavernositis, on physical examination, the penile erection is not associated with penile or scrotal discoloration and the newborns appear comfortable, with no signs of pain [2]. In our case, the newborn appeared comfortable, without pain, and exhibited no other local alterations aside from penile erection, consistent with the described cases of idiopathic neonatal priapism.

The assessment aims to exclude secondary causes and determine the necessity for targeted intervention. While a laboratory evaluation enables the exclusion of secondary causes, an urgent penile Doppler ultrasound is essential [1,3]. Nevertheless, cavernous blood gas analysis should be reserved for exceptional cases and conducted by an experienced Pediatric Urologist [1].

In the neonatal period, the possibility of minor trauma during passage through the birth canal or during instrumentation delivery is considered as a cause [3]. Although, as normal delivered, the possibility of minor trauma is unlikely. Other associations in this age group include polycythemia, infection (syphilis and pyocavernositis), respiratory insufficiency, umbilical catheterization, and drug-induced, which are less common, especially in newborns [3], which were excluded in this case.

Neonatal priapism remains a rare and underreported phenomenon and most described cases are idiopathic. From the presented case, following the exclusion of common etiological causes, it can be inferred that we are facing a situation of idiopathic neonatal priapism. According to cases described in the literature, conservative treatment was appropriate in most cases, with spontaneous and complete resolution observed without sequelae [1,7]. In cases where penile erection persists, a surgical approach should be considered due to the substantial increase in the long-term risk of complications. In the case described and faced a normal physical examination and normal penile ultrasonography with doppler, the medical team favored an expectant approach, which proved successful, avoiding more invasive interventions.

Long-term follow-up is recommended after clinical discharge. Although long-term follow-up data are limited, with a maximum follow-up period of 8 years in the cases described, complete functional recovery was observed, suggesting a benign and self-limiting condition [1,3].

Conclusion

Idiopathic neonatal priapism is a rare condition, not well-documented in the literature, with no established approach protocols. Unlike cases occurring in childhood, where the ischemic etiology, due to its frequency, demands a prompt and targeted approach for rapid resolution to preserve penile function, in the case of idiopathic neonatal priapism, a conservative approach has proven to be sufficient, with an expectation of complete resolution without any lingering issues.

Conflict of Interest

The authors declare that there were no conflicts of interest in conducting this work.

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Volume 13 Issue 7 July 2024