Journal of african clinical cases and reviews / Journal africain des cas cliniques et revues

www.jaccrafrica.com ISSN 2712-6412 Open access

Case report

Severe Neonatal Phimosis with Complete Imperforation of the Preputial Ring: A Rare Urogenital Malformation. A Case Report and Review of the Literature

Phimosis néonatal serré avec imperforation de l'anneau prépucial : une malformation urogénitale rare. À propos d'un cas et revue de la littérature

D Bayane[1]*, A-K Pare[2], H Sawadogo[3], A Millogo[4], D Ye[5], A Bako[2], JS Ramde[5], M Simpore[5], A Ouattara[5]

Résumé

Le phimosis est physiologique chez le nouveau-né, mais l'imperforation complète de l'anneau prépucial avec rétention urinaire est exceptionnelle. Nous rapportons le cas d'un nouveau-né reçu à 18 heures de vie pour absence de miction et volumineux ballonnement du prépuce. L'examen objectivait une poche sous-prépuciale contenant des urines, sans communication avec l'extérieur. Une circoncision en urgence sous bloc pénien a permis l'évacuation de 40 mL d'urine. Les suites opératoires ont été simples, avec reprise immédiate d'une miction spontanée et échographie ultérieure normale des voies urinaires. L'imperforation de l'anneau prépucial peut entraîner une rétention urinaire et menacer le haut appareil. Contrairement au phimosis physiologique, elle constitue une urgence urologique nécessitant la levée rapide de l'obstruction.

Mots-clés : nouveau-né ; phimosis ; imperforation prépuciale ; rétention urinaire ; circoncision.

Abstract

Physiologic phimosis is normal in newborns, whereas complete imperforation of the preputial ring causing urinary retention is exceptional. We report a male newborn admitted at 18 hours of life for failure to void and marked ballooning of the prepuce. Examination showed a urine-filled subpreputial sac with no communication to the exterior. Emergency circumcision under a penile block evacuated 40 mL

of urine. Recovery was uncomplicated, spontaneous urination resumed immediately, and subsequent urinary tract ultrasonography was normal. Complete imperforation of the preputial ring may cause urinary retention and threaten the upper urinary tract. Unlike physiologic neonatal phimosis, it is a urologic emergency requiring prompt relief of obstruction.

Keywords: newborn; phimosis; preputial imperforation; urinary retention; circumcision.

Introduction

Congenital anomalies of the kidney and urinary tract involve the kidneys, collecting system, or lower urinary tract and are a major cause of morbidity in children [1]. Reported pediatric prevalence varies widely, from 3.5% to 43%, depending on the population and diagnostic method [2]. Male genital anomalies are frequent reasons for pediatric surgical consultation and range from simple preputial adhesions to less common conditions such as hypospadias, epispadias, and pathologic phimosis [3]. We report a rare case of complete imperforation of the preputial ring causing urinary retention in a newborn.

Clinical case

A male newborn was admitted at 18 hours of life after referral from a peripheral health center for persistent crying, failure to void, and an apparent genital abnormality. The pregnancy had reportedly progressed normally to term and had been monitored through two antenatal visits; no prenatal imaging had been performed. Delivery was uncomplicated. Birth weight was 3,000 g, length 51 cm, head circumference 32 cm, and chest circumference 33 cm. Apgar scores at 1, 5, and 10 minutes were 8, 10, and 10, respectively. The newborn was in good general condition. There was no suprapubic distension. The penis appeared normally formed but showed a firm, fluctuant, reddish globular swelling measuring approximately 7 × 5 cm. The swelling was consistent with a urine-filled subpreputial chamber without an external opening (Figure 1). Both testes were normally descended. The anus was normally positioned and patent, and no other apparent malformation was detected.

A diagnosis of severe phimosis with urinary retention caused by complete imperforation of the preputial ring was made. Emergency ultrasonography was unavailable to evaluate possible upper urinary tract consequences. Because urine could not drain externally, circumcision was performed urgently under local anesthesia with a penile block (Figure 2). Approximately 40 mL of urine was evacuated from the preputial sac, and a strong urinary stream was observed intraoperatively.

The postoperative course was uncomplicated (Figures 3–5), and spontaneous urination resumed. A postoperative ultrasound examination of the urinary tract showed no abnormality (Figure 6).

Figure 1. Marked ballooning of the urine-filled prepuce.

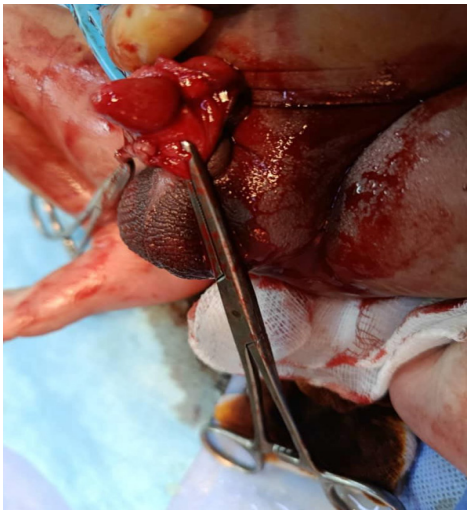

Figure 2. Intraoperative view during emergency circumcision.

Figure 3. Immediate postoperative appearance after circumcision.

Figure 4. Urination after healing.

Figure 5. Appearance after complete healing.

Figure 6. Normal postoperative ultrasonographic appearance of the urinary tract.

Discussion

The prepuce is an anatomic structure of the external genitalia of male and female primates. It has a mixed embryologic origin involving ectoderm, neuroectoderm, and mesenchyme [4]. The prepuce, glans, and balanopreputial sulcus share a common developmental relationship, which explains the mucosal continuity between these structures.

At birth, the prepuce is normally long, thick, relatively

noncompliant, and has an apparently narrow opening, constituting physiologic phimosis [5]. Fusion of the opposing mucosal surfaces is almost constant and prevents spontaneous retraction. Hormonal and growth factors, penile growth, glans development, and erections progressively separate these mucosal planes and release balanopreputial adhesions. Together with gradual softening of the preputial ring, this process permits spontaneous retraction in more than 80% of boys older than five years [6].

Our patient had a rare form of severe phimosis with complete imperforation of the preputial ring and urinary retention during the neonatal period. The penis was normally formed and there was no palpable bladder. Other authors have described preputial voiding or ballooning in which the penis appears normal between voids and the prepuce expands during urination because of narrowing of the preputial opening.

In ordinary physiologic ballooning, urine is transiently retained under the prepuce because of a narrow but patent ring. This phenomenon generally disappears as preputial elasticity increases and does not itself produce high pressure in the lower or upper urinary tract [7]. Our patient differed because the ring was completely imperforate. Urine accumulated continuously in the subpreputial sac, which may explain the absence of a palpable bladder despite urinary retention.

The lack of emergency imaging at our center limited the initial morphologic assessment and prevented immediate evaluation for upper urinary tract dilatation such as ureterohydronephrosis. Similar cases of subpreputial urinary retention have been reported in association with a buried penis and severe phimosis, in which the distended inner preputial layer is both a consequence and a contributor to urine accumulation [8,9].

Phimosis in newborns is usually physiologic and does not justify routine circumcision. Most cases resolve progressively and should be managed expectantly with local hygiene and avoidance of forced retraction. Conservative management is appropriate when there are no complications.

The approach changes when severe obstruction or complications are present. Acute urinary retention, major preputial distension during voiding, local infection, or preputial injury requires prompt urinary drainage and, when necessary, surgical relief of the obstruction. In our patient, complete imperforation left no alternative drainage route; emergency circumcision was therefore indicated, consistent with the surgical approach reported for complicated phimosis [8–11].

Circumcision was performed under a penile block. This regional technique is relatively easy to learn and has a reported success rate above 80% [12]. The postoperative course was satisfactory, and spontaneous voiding resumed without complication.

Reported complication rates after circumcision vary. Meatal stenosis has been a leading delayed complication in some series and may appear years after the procedure, at a mean age of 8.7 years [13]. Long-term follow-up should therefore include assessment of urinary stream quality and inspection of the urethral meatus.

Conclusion

Penile anomalies in children span a broad anatomic, etiologic, and clinical spectrum. Neonatal phimosis is physiologic in the absence of complications, but complete imperforation of the preputial ring with urinary retention is a urologic emergency. Prompt circumcision relieved the obstruction and produced a favorable outcome in this patient.

***Correspondence :**

Dramane BAYANE

bayanedramane@yahoo.fr

Available online : September 3, 2026

1 : Medical Center with Surgical Unit, Dô, Bobo-Dioulasso, Burkina Faso.
2 : Pala University Hospital, Bobo-Dioulasso, Burkina Faso.
3 : Dédougou Regional Hospital, Burkina Faso.
4 : Banfora Regional Hospital, Burkina Faso.
5 : Sourou Sanou University Hospital, Bobo-Dioulasso, Burkina Faso.

© Journal of african clinical cases and reviews 2026

Conflict of interest : None

References

[1] Kahloul N, Charfeddine L, Fatnassi R, Amri F. Les uropathies malformatives chez l'enfant: à propos de 71 cas. J Pédiatr Puéricult. 2010;23:131-137.

[2] Bouah-Kanon E, Ehile-Kacou MS, Diarrassouba G, Kassi FE, Eboua T, Lasme-Guillao E. Uropathies malformatives de l'enfant: profil épidémio-clinique, thérapeutique et évolutif en milieu hospitalier ivoirien. Néphrol Ther. 2024;20(4):260-268.

[3] Peycelon M, Parmentier B, Raquillet C, Boubnova J, Chouikh T. Anomalies du pénis chez l'enfant. Arch Pediatr. 2012;19:1347-1353.

[4] Bréaud J, Guys JM. Décalottage ou circoncision: quelle indication dans le phimosis? Arch Pediatr. 2005;12:1424-1432.

[5] Mollard P. Précis d'urologie de l'enfant. Paris: Masson; 1984. p. 330-331.

[6] Barreto J, Caballero C, Cubilla A. Penis. In: Sternberg SS, editor. Histopathology for Pathologists. New York: Raven Press; 1997. p. 1043-1044.

[7] Babu R, Harrison SK, Hutton KA. Ballooning in the foreskin and physiological phimosis: is there any objective evidence of obstructed voiding? BJU Int. 2004;94:384-387.

[8] Boillot B, Teklali Y, Moog R, Droupy S. Les malformations congénitales du pénis. Prog Urol. 2013;23:664-673.

[9] Liard A, Mitrofanoff P. La verge enfouie, une entité souvent mal connue. Arch Pediatr. 2002;9:1288-1290.

[10] Gnassingbé K, Akakpo-Numado KG, Anoukoum T, Kanassoua K, Kokoroko E, Tékou H. La circoncision: pourquoi et comment est-elle pratiquée chez le nouveau-né et le nourrisson au CHU de Lomé? Prog Urol. 2009;19:572-575.

[11] Told S, Finlay C, Jefferies L. La circoncision néonatale. Paediatr Child Health. 2015;20(6):316-320.

[12] Jöhr M, Berger TM. Bloc pénien chez l'enfant. Prat Anesth Réanim. 2006;10(1):52-55.

[13] Rimtebaye K, Sillong FD, Tashkand AZ, Kaboro M, Angwafo III F. Caractéristiques épidémiologiques, anatomocliniques et thérapeutiques des complications de la circoncision. Rev Afr Urol Androl. 2016;1(5):218-224.

To cite this article

D Bayane, A-K Pare, H Sawadogo, A Millogo, D Ye, A Bako et al. Severe Neonatal Phimosis with Complete Imperforation of the Preputial Ring: A Rare Urogenital Malformation. A Case Report and Review of the Literature. Jaccr Case Reports 2026; 1(2): 28-32

https://doi.org/10.70065/2612.jaccrCasereports.002L010309