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Case Report

Hymeneal Imperforation with Significant Hydrocolpos at Birth: A Case Report

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Abstract

Background: Imperforate hymen is a rare congenital anomaly of the female genital tract. It is often diagnosed in adolescence due to symptoms related to hematocolpos. However, it can present in the neonatal period with significant hydrocolpos, which can lead to abdominal distension and other complications. *Case Presentation:* We report a case of a newborn female presenting with significant hydrocolpos due to an imperforate hymen. The infant was born at term through vaginal delivery with no complications during pregnancy. On physical examination shortly after birth, the infant exhibited marked abdominal distension. Ultrasound examination revealed a large cystic mass in the pelvic region consistent with hydrocolpos. *Diagnosis and Management:* The diagnosis of imperforate hymen was confirmed through a thorough physical examination. A small bulging membrane was observed at the introitus, and subsequent imaging supported the diagnosis. A hymenotomy was performed under general anesthesia, and approximately 50mL of milky fluid was drained from the vaginal canal. The infant's recovery was uneventful, and follow-up examinations showed no recurrence of symptoms. *Discussion:* This case underscores the importance of considering imperforate hymen in the differential diagnosis of a newborn with abdominal distension. Early recognition and prompt surgical intervention are crucial to prevent complications such as urinary obstruction, infection, and potential damage to the reproductive organs. Neonatal hydrocolpos due to imperforate hymen is rare but should be recognized as a possible etiology in similar presentations. *Conclusion:* Imperforate hymen with significant hydrocolpos can present in the neonatal period. Early diagnosis and surgical management are essential for a favorable outcome. This case highlights the need for awareness among clinicians regarding this rare but treatable condition.

Keywords

Hydrocolpos, Goma, DRC

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1. Introduction

Hydrocolpos is defined as the vaginal retention of cervical and vaginal secretions in newborns and infants, with the most common cause being imperforate hymen [1]. Imperforate hymen is considered a rare congenital anomaly of the female reproductive tract, with an approximate incidence of 0.05% to 0.1% [2, 3]. We report a case of significant hydrocolpos secondary to an imperforate hymen diagnosed at birth.

2. Observation

Patient Information: The patient was a female infant, born via natural delivery at a local health center, and referred to the Provincial Hospital of North Kivu in Goma, Democratic Republic of Congo, for better management of a vulvar mass. She was admitted to the pediatric neonatology unit. She was the sixth child in a family of six and the third daughter.

Clinical Findings: On interrogation, the mother did not report any specific complaints, nor was there a family history of imperforate hymen. Physical examination (conducted by a team of a pediatrician and an obstetrician-gynecologist) revealed a weight of 3100 grams, a length of 50 cm, and a head circumference of 35 cm. The abdomen was slightly distended but soft. The vulvo-perineal examination showed generalized vulvar edema and a bulging mass protruding at the vaginal orifice, marked with vascular streaks, and resistant to palpation. The urethral meatus was in place, and the anus was patent. Neurological examination was normal, and no other apparent congenital malformations were noted.

Diagnostic Approach: Pelvic ultrasound revealed an echogenic collection in the vagina with a dependent sediment situated between the bladder and the rectum. Cardiac and abdominal ultrasounds revealed no malformations.

Therapeutic Intervention and Follow-Up: With the parents' consent, a simple X-shaped hymenotomy under local anesthesia was performed the following day, draining approximately 50 milliliters of milky fluid (Figure 2). Postoperative recovery was satisfactory (Figures 3 and 4), and the patient was discharged after 48 hours of observation. A follow-up consultation one month later revealed good progress (Figure 4).

3. Discussion

Congenital hydrocolpos is a rare condition with a prevalence of 1 in 16,000 female births [4]. It typically results from fluid accumulation and vaginal obstruction due to the stimulation of secretory glands. With increased severity and vaginal outlet obstruction, hydrocolpos can present as a pelvic mass [5]. Sometimes, imperforate hymen is suggested by antenatal ultrasound showing hydrocolpos or hydrometrocolpos secondary to the accumulation of cervical and vaginal secretions in the fetus [4].

In our reported case, hydrocolpos was isolated, unlike the large hydrometrocolpos described by Shan NT et al [6, 7]. where multiple malformations were associated. Imperforate hymen results from the failure of spontaneous rupture of the hymenal membrane, which usually occurs around the eighth week of gestation [8]. It is mostly isolated but can occasionally be associated with other malformations such as polydactyly, uterine and clitoral anomalies (bifid clitoris), renal malformations (polycystic kidney disease), and imperforate anus [7, 8]. Malformations to be systematically searched for upon discovering an imperforate hymen include genital (uterovaginal duplication), nephro-urinary (urinary malformations, renal agenesis, dysplasia, or hypoplasia), and anorectal (anomalies) [9]. The prognosis for isolated imperforate hymen is good, with associated malformations determining the severity [10]. The 2 cases of newborns with congenital hydrocolpos reported by Murthy V. et al [5] had a prenatal ultrasound diagnosis of a low abdominal mass. The final diagnosis was hydrocolpos secondary to distal vaginal atresia for the first case and congenital urovaginal sinus for the second. Herlyn Werner Wunderlich syndrome with a blind hemi-vagina, uterine duplication and homolateral renal agenesis are rare [9].

Most literature reports that with both recessive and dominant transmission modes suggested. In our case, there was no reported imperforate hymen is sporadic [11]. However, a familial character, though rare, suggests a possible genetic predisposition familial history [12], Nevertheless, a case reported by Ramphul M et al [13] found a familial history of surgically treated imperforate hymen in the patient's older sister.

The majority of cases are reported in the literature as sporadic hymen imperforation [11]. Nevertheless, the familial character, although exceptional according to some authors [12], suggesting a possible genetic predisposition, with the two modes of transmission (recessive and dominant) suggested [11], has not been reported for our case. However, the case reported by Ramphul M et al [13], had found in the family history a case of imperforate hymen surgically treated at 5 months of birth in the patient's older sister.

Regardless of the timing of diagnosis, treatment of imperforate hymen is surgical hymenotomy. Spontaneous rupture of the hymenal membrane is possible but very rare [14]. Systematic screening at birth and early treatment are the best guarantees for preventing complications [15]. Early diagnosis significantly benefits the prognosis and management of isolated imperforate hymen, differing greatly from vaginal atresia, vaginal septum, or urogenital sinus [16]. Treatment is exclusively surgical and usually straightforward, leading to definitive healing [15].

4. Conclusion

Imperforate hymen is a congenital pathology rarely diag-

nosed at birth, often discovered at puberty due to hematocolpos. In newborns, hydrocolpos bulging through the vaginal orifice also requires surgical management via hymenotomy to prevent complications mainly due to mechanical compression of adjacent organs.

Consent for publication

Written informed consent was obtained from the caretaker of the patient for publication and accompanying images.

Declaration of competing interest

The authors declare that there is no conflict of interest in this article.

Acknowledgments

The authors are grateful to all healthcare workers who participated in the management of this patient.

Figures

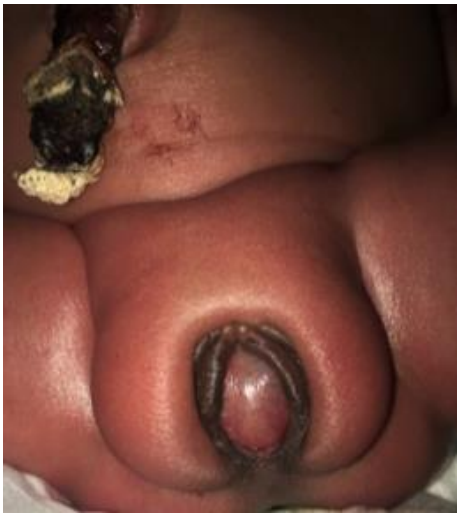

Figure 1. *Preoperative appearance of imperforate hymen and vulvar edema (Preoperative aspect).*

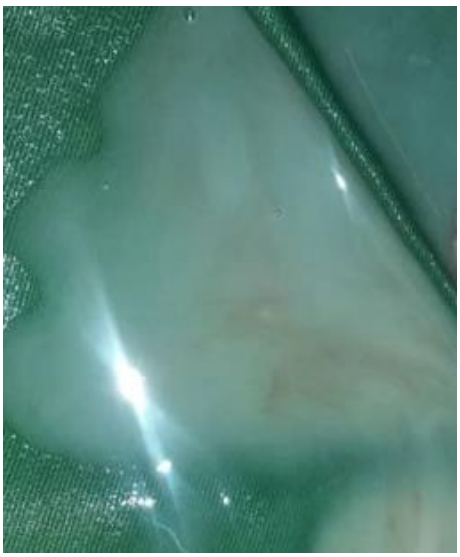

Figure 2. *Drained fluid with a milky appearance (per operative appearance).*

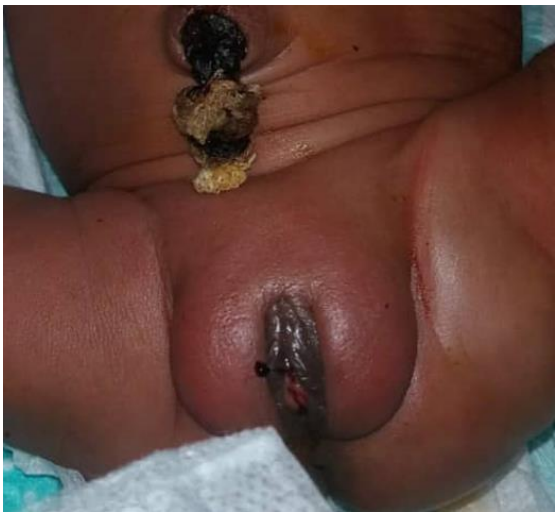

Figure 3. *Vulva after hymenotomy and drainage (Immediate post-operative appearance).*

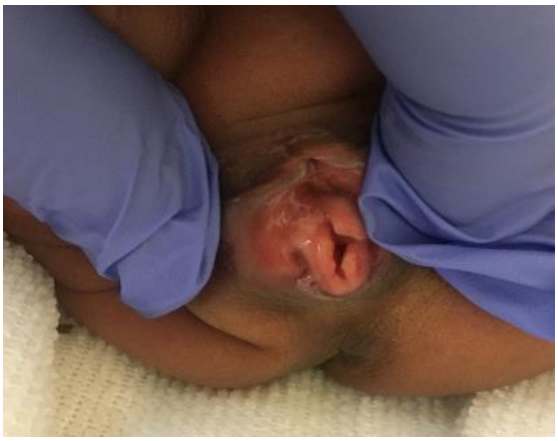

Figure 4. *Vaginal orifice one-month post-operation.*

Abbreviations

CIMAK	Clinique Internationale de Médecine Avancée au Kivu
DRC	Democratic Republic of Congo

Conflicts of Interest

The authors declare no conflicts of interest.

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