Hydrometrocolpos from a low vaginal atresia: An uncommon cause of neonatal intestinal and urinary obstruction

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ABSTRACT

Neonatal hydrometrocolpos is a rare condition that follows congenital vaginal obstruction. Association with urinary obstruction and upper tract dilatation has been reported in some cases. Obstruction of the gastrointestinal tract without a coexisting bowel anomaly can also occur, but this is very rare. In some cases, preoperative diagnosis may be difficult. We describe our experience with a rare case of huge hydrometrocolpos presenting as neonatal intestinal and urinary obstruction.

Key words: Hydrometrocolpos, intestinal obstruction, neonate, urinary obstruction, vaginal anomaly

INTRODUCTION

Obstruction of the vagina with accumulation of secretions and distention of the vagina was first reported in 1856.[1] When only the vagina is distended it is termed hydrocolpos, but if there is also associated uterine enlargement, the term hydrometrocolpos is applied. In the newborn, vaginal obstruction could result from high vaginal septum, varying degrees of vaginal atresia, cloacal malformation, or an imperforate hymen.[2,3] The clinical features of hydrometrocolpos in the newborn are dominated by the abdominal mass with regional compression.[2] Compression of the lower urinary tract has been reported to cause hydronephrosis,[2,3] but compression of the gastrointestinal tract with obstruction to the passage of meconium is rare.[3,4] Hydrometrocolpos is sometimes associated with urogenital sinus and the autosomal recessive Mckusick-Kaufman syndrome.[5]

Preoperative diagnosis of neonatal hydrometrocolpos is often difficult because of the rarity and partly because vulval bulge may not be present.[2,3]

This case report highlights the need for a through evaluation of a new born with abdominal mass to achieve early diagnosis and appropriate treatment. Also emphasized are the limitations posed by late presentation and lack facilities in our setting.

CASE REPORT

A 4-day-old girl presented with inability to pass meconium and urine from birth associated with progressive abdominal distention and bilious vomiting. She was the product of an uneventful pregnancy and spontaneous vertex delivery at term. The birth weight was 3.1 kg. She was earlier managed for suspected neonatal sepsis at a peripheral hospital and was referred to the paediatric surgical unit of the university of Nigeria teaching hospital, Enugu when the symptoms persisted.

Physical examination showed markedly distended firm abdomen with prominent superficial vein that drained superiorly. The perineum was retracted significantly making the urethra meatus difficult to visualize. There was no vulval bulge and the introitus could not be visualized. Attempts to catheterize the urethra were unsuccessful. Digital rectal examination revealed a patent anus, a huge firm pelvic mass and an empty rectum. The examining finger could not extend beyond the proximal empty rectum. There was no associated polydactyly and congenital cardiac defect.

A large abdominopelvic mass displacing the bowel to the right hypochondrium was seen on plain abdominal radiograph. Ultrasonography was not done because this was not available as emergency service.

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At emergency laparotomy, the uterus and the vagina were grossly distended and occupied the pelvis and most of the abdominal cavity [Figure 1]. There was compression of the urinary bladder at the neck and the large bowel at the sigmoid colon. The descending colon proximal to the sigmoid colon was distended with meconium, but there was continuity with the distal bowel. The small bowel was displaced to the upper part of the right hypochondrium. The urinary bladder was markedly distended with thickened wall and the fundus reached the level of the umbilicus.

With aspiration, 90 mL of clear amber urine was evacuated from the urinary bladder. The anterior wall of the vagina opened was and about 210 mL of turbid yellow fluid was drained. Culture of this did not yield any significant growth. The vaginotomy enabled exclusion of vaginal duplication, and visualization of the area of atresia at the lower part of the vagina. This was incised and a size 12 Foleys catheter pulled through and left *in situ* for 14 days. Careful inspection of the abdomen after decompression of the hydrometrocolpos did not reveal any significant upper urinary tract dilatation or deformity.

Before closing the abdomen, the urinary bladder was successfully catheterized and a seromuscular biopsy of the distal sigmoid colon below the level of obstruction taken. The biopsy result showed normal ganglion cells. The patient moved bowel 24 h after operation.

Early in the postoperative period, an elective abdominal sonogram revealed mild calyceal dilatation and thickened bladder wall, but there was no biochemical renal derangement. The child had an uneventful recovery and was discharged 18 days after surgery. Repeat abdominopelvic sonogram 6 months after surgery showed resolution of the calyceal dilatation, a normal sized vagina and an involuted uterus. The child is being followed up in the outpatient department.

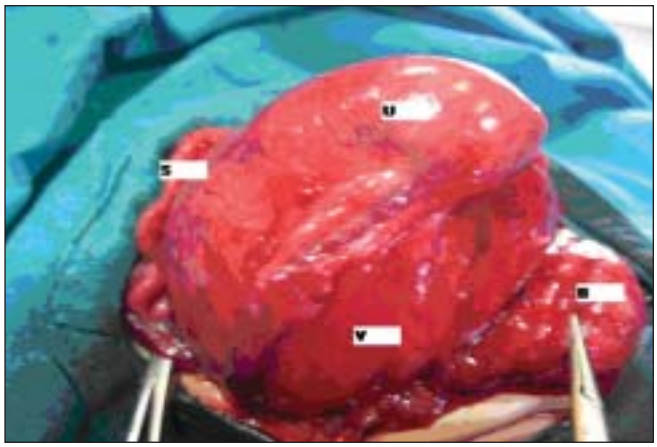


Figure 1: Intraoperative findings: distended uterus (U), distended vagina (V), displaced small intestine (S), and distended urinary bladder (B)

DISCUSSION

Neonatal hydrometrocolpos is a rare condition that follows developmental obstruction of the vagina and an associated increased cervical secretion.[2,4,6] In the present report, the vaginal obstruction was caused by a low atresia. Vaginal obstruction in newborn has also been reported to follow a high vaginal septum, cloacal malformation, or an imperforate hymen.[4]

Presentation of hydrometrocolpos depends on the degree of compression of the surrounding structures by the uterovaginal swelling.[4,6] Commonly, the urinary tract is compressed leading to varying degrees of hydronephrosis.[2,4,6,7] Pressure on the bowel to cause obstruction is not common.[3,4] In this case, both the bladder neck and the sigmoid colon were significantly compressed to cause urinary and intestinal obstruction.

The diagnosis of hydrometrocolpos is often delayed because of its rarity and these neonates often have prolonged investigations to exclude more common causes of intestinal and urinary obstruction.[4,6,7] In our setting, this is worsened by the absence of ultrasound facilities at all times. In the index patient, preoperative diagnosis was not possible because emergency ultrasonography was not available at the time of presentation. Also the patient presented late with urinary and intestinal obstruction warranting emergency intervention. The diagnosis in the present report was only made at laparotomy. In situation where a hydrometrocolpos result from imperforate hymen, a tense protruding membrane is characteristically evident at the vulva[4] obviating the need for laparotomy. Current management emphasizes prenatal diagnosis with ultrasound or magnetic resonance imaging.[3,7]

The definitive treatment involves drainage of the accumulated fluid and establishing communication between the vaginal epithelium and the vulva.[2-4,6] For imperforate hymen and low vaginal atresia, perineal approach is preferable. Abdominoperineal approach is usually reserved for high vaginal atresia.[6,8] This patient would have been saved the ordeal of neonatal laparotomy if she presented early and we had the benefit of preoperative diagnosis. Many surgeons in some developing countries are constrained by late

presentation and lack of facilities. It is, therefore, important to educate health-care workers especially those in the rural areas on the need for early referral. Also essential is the provision of basic facilities like ultrasonography at all times.

During the operative treatment of hydrometrocolpos presenting with intestinal obstruction, it is imperative to exclude other pathologies that may cause neonatal intestinal obstruction, *viz* - anorectal malformation, bowel atresias, and Hirschsprung's disease (HD). In this patient, HD was appropriately excluded.

Follow-up is essential to monitor the urinary system and prevent stenosis of the vaginal channel.

This case report highlights the fact that hydrometrocolpos should be considered in the differential diagnosis of a female newborn with abdominal mass with or without constipation and urinary obstruction.

REFERENCES

1. Godefroy M. Imperforation de la membrane hymen produisant des accidents chez une enfant de deux moi. Operation Guerison Lancette Fr, Gaz Hop Civ Milit 1856;29:567 [in French].
2. Ho NK. Hydrocolpos. Aust NZ J Obstet Gynaecol 1975;15:186-8.
3. Belghith M, Walha F, Saad H, Nouri A, Pouce H, Gueddiche N, *et al*. Neonatal hydrocolpos with distal vaginal atresia: Apropos of 2 cases. Chir Pediatr 1990;31:352-3.
4. Gupta I, Barson AJ. Hydrocolpos with peritonitis in the newborn. J Clin Pathol 1980;33:679-83.
5. David A, Bitoun P, Lacombe D, Lambert J, Nivelon A, Vigneron J, *et al*. Hydrometrocolpos and polydactyly: A common neonatal presentation of Bardet-Biedl and McKusick-Kaufman syndromes. J Med Gent 1999;36:599-603.
6. Hahn-Pedersen J, Kvist N, Nielsen OH. Hydrometrocolpos: Current views on pathogenesis and management. J Urol 1984;132: 537-40.
7. Nazir Z, Rizvi RM, Qureshi RN, Khan ZS, Khan Z. Congenital vaginal obstructions: Varied presentation and outcome. Pediatr Surg Int 2006;22:749-53.
8. Alchihabi N, Pinter A. Surgical management of congenital high vaginal atresia. Orv Hetil 1993;134:737-42.

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