Imperforate hymen presenting with massive hematocolpos, hematometra and acute urinary retention in a teenage girl: a case report

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Abstract

Background: Imperforate hymen is relatively rare but it is the most frequently encountered obstructive anomaly of the female lower genital tract. The clinical presentation vary significantly from patient to patient depending on the age at diagnosis but in most cases the diagnosis is missed in early childhood and therefore the diagnosis is made after puberty when the patient present with haematocolpos, heamatometra or both.

Case Report: Here we present a case of 15 years old girl with imperforate hymen and presented with history of lower abdominal pain and distension associated with acute urinary retention. She was treated by hymenotomy and improved dramatically and was discharge 6th day post operatively.

Conclusion: Clinicians should have high index of suspicion of imperforate hymen when assessing a case of adolescent girls particularly those who have not started having their menses in their teens and present with acute urinary retention so that their external genitalia are carefully examined to exclude the possibility of imperforate hymen as a cause of acute urinary retention due to the haematocolpos.

Keywords: Imperforate hymen; Hematocolpos; Hematometra; Hymenotomy.

Introduction

Normal vaginal development requires the fusion of components that are derived from two embryologic structures, the mesodermal Müllerian ducts and the endodermal urogenital sinus (UGS). The upper half of the vagina develops from the Müllerian ducts while the lower half develops from the UGS. This is normally followed by canalization to form a normal patent vagina. The hymen represents the junction of the sinovaginal bulbs with the UGS. By the fifth month of gestation, the canalization of the vagina is complete while the hymen usually ruptures (perforates) before or shortly after birth and remains as a thin mucous membrane.[(1)]

An imperforated hymen is due to failure of the endoderm of the urogenital sinus to completely canalize. It is relatively rare presentation with the incidence of about 0.1% of all new born female babies but it is the commonest lower female genital tract obstructive abnormality.[(1-2)] The incidence of imperforate hymen is 1 in 2000 girls, and approximately half of these will present with urinary retention.[(3)] Commonly pubertal girls present after menarche when menstrual blood trapped in the vagina behind the imperforate hymen which is known as hematocolpos creating a bluish bulge at the introitus. With cyclic menstruation, the vaginal canal becomes greatly distended, and the cervix may begin to dilate and allow formation of a hematometra and hematosalpinx thus forming lump in abdomen. This can lead to mass effect causing to urinary outflow obstruction or rarely intestinal obstruction.

Late discovery of an imperforate hymen may lead to pain, infections, hydronephrosis and endometriosis with sub fertility as a possible consequence. Examination of the external genitalia is necessary in the investigation of girls between the ages of 11 and 18 who have a lower abdominal mass and crypto menorrhea. Usually the patient presents early, with cyclical lower abdominal pain, and often retention of urine due to elevation of the bladder neck and elongation of the urethra. The endometrium is functional, and recovery is complete when the obstruction is relieved surgically.

Case Study

A 15-year-old girl came to our hospital with urine retention since 2 days. She gave history of lower abdominal pain prior to the onset of inability to pass urine. The girl admitted not to have attained menarche but have been experiencing cyclic lower abdominal pain over the past 2 years. She was healthy, afebrile but in pain. She was of normal stature and secondary sexual characteristics. Abdominal examination revealed a supra-pubic mass equivalent to 26 weeks pregnancy (Fig. 1). Pelvic inspection showed a normal vulva but with bluish bulging membrane in the introitus (Fig. 2). Bimanual pelvic examination through the rectum revealed a distended vagina bulging into the anterior rectal wall. Urinary catheterization was done and clear urine was drained from the urinary bladder with relief of pain. Ultrasonography revealed huge haematocolpos with haemotemetra (Fig. 3). Ovaries were free. Both kidneys were normal.

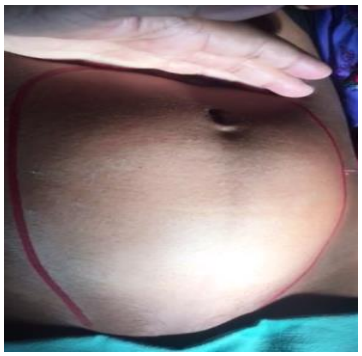

Fig. 1: Showing suprapubic abdominal mass

Fig. 2: Showing Imperforate Hymen

Fig. 3: USG showing haematometra and haematocolpos

Fig. 4: Showing drainage of blood during hymenotomy

In operation theatre, she underwent a hymenotomy (using a cruciate incision) under general anaesthesia and approximately 1500ml of thick chocolate coloured blood evacuated. Post operatively the girl improved remarkably and was discharged home on 7th day. She came back for review after 1 week. There was no refusion of hymen, but the uterus is still a little bulky and haematocolpos has resolved completely. She has been advised to come for recheck up after after her menstruation.

Discussion

Imperforate hymen is rarely associated with other female genital tract malformations but Mullerian duct malformations should be ruled out. Usually imperforate hymen is asymptomatic and the diagnosis is missed before puberty and made at menarche. In our case the diagnosis was reached about two years after the onset of irregularly cyclic abdominal pain when she had a massive haematocolpos and haematometra. The reported size of hematocolpometra mass in a imperforate hymen case was of 24x12x16 cm^3 on ultrasonography by Joanna Mercado-Alvarado *et al*.[(4)] In our case the size was also quite big.

Hymental tissue in case of imperforate hymen tends to form a tougher border, making simple incision and sutures more than enough.[(5)] Multiple types of incisions have proven effective: cruciate incision, longitudinal incision or excision of part of membrane.[(6)] Standard 44 treatment is surgical hymenectomy with T, X, plus, or cruciform incisions and removal of excess hymenal tissue.[(5)] The patient described in this case report received a cruciform incision. Hymenotomy is a minor procedure that does not cause significant morbidity and provides complete relief of all the symptoms. Follow up is always necessary to make sure there is no refusion of the hymen.

Conclusion

In adolescent girls with acute urinary retention (particularly if associated with amenorrhea), imperforate hymen with haematocolpos should be considered.

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