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Case Report

Cryptomenorrhea due to imperforate hymen presenting with urinary retention

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ABSTRACT

Cryptomenorrhea is a condition where menstruation occurs but is not visible due to obstruction of the outflow tract. One of the most common causes causing primary amenorrhoea and cryptomenorrhea include imperforate hymen. This condition usually presents in adolescent girls with cyclical abdominal pain and primary amenorrhoea. Though it usually presents as an isolated abnormality it may be associated with genetic conditions such as Mayer-Rokitansky-Kuster-Hauser syndrome. The diagnosis is usually confirmed on the basis of grayscale ultrasound however magnetic resonance imaging may be required to diagnose associated mullerian abnormalities. Once the diagnosis is confirmed the management is usually consist of virginity preserving hymenotomy. We here present case of an adolescent girl who presented with primary amenorrhea, abdominal pain and urinary retention. The clinical examination showed well developed secondary sexual characters (Tanner stage 4), distended abdomen and bulging introitus. Grayscale ultrasound and magnetic resonance imaging showed hematocolpos. Patient was planned for resection of hymen and a cruciate incision was given over the hymen and around 700 ml of collected blood was drained. Eversion and suturing of edges of incision was done to maintain patency of outflow tract. During follow up visit at 3 months patient was symptom free with regular menses.

Keywords: Primary amenorrhoea, Cryptomenorrhea, Ultrasound, Hematocolpos

INTRODUCTION

Cryptomenorrhea is a condition where menstruation occurs but is not visible due to obstruction of the outflow tract.[1] It is usually seen in cases with imperforate hymen however less frequently it may also be due to vaginal stenosis secondary to iatrogenic vaginal injuries or sometimes seen as a complication of pelvic trauma.[2] The other rare causes of cryptomenorrhea include vaginal agenesis and Müllerian dysgenesis (Mayer-Rokitansky-Kuster-Hauser syndrome). The most common cause of cryptomenorrhea is imperforate hymen which is a rare obstructive congenital anomaly of the female genital tract arising as a result of complete failure of canalisation of the inferior end of the vaginal plate at the junction between the urogenital sinus and the vagina. Its prevalence is reported to be 0.05-0.1%.[3] The most common clinical presentation of these cases is primary amenorrhoea and cyclical abdominal pain. The diagnosis of imperforate hymen must be considered in all adolescent girls presenting with primary amenorrhoea particularly if there is history of cyclical abdominal pain and family history of mullerian dysgenesis.[4] The clinical examination in these cases will show presence of bulging bluish membrane across the vaginal vestibule suggestive of hematocolpos. The diagnosis is usually confirmed on the basis of ultrasound examination and management consist of hymenectomy.[5] We present this case of a 13-year-old girl who presented with acute urinary retention and severe abdominal pain as a result of imperforate hymen causing cryptomenorrhea.

CASE REPORT

13 years old peripubertal girl came to emergency department with acute urinary retention and history of intermittent abdominal pain. The patient did not attain menarche but secondary sexual characteristics were well developed (Tanner stage 4). Patient did not have any significant family history or medical history. On inspection suprapubic swelling was visible. Urinary catheterization was done in emergency following which patient had symptomatic relief. Patients per abdomen examination revealed uterine height of 24 weeks of gestation, there was no tenderness. Per vaginal examination revealed tense swelling bulging form the introitus, bluish tinge was present. In view of history of cyclical pain, amenorrhea and presence of tense bulging from the introitus a clinical diagnosis of imperforate hymen was made and imaging was advised.

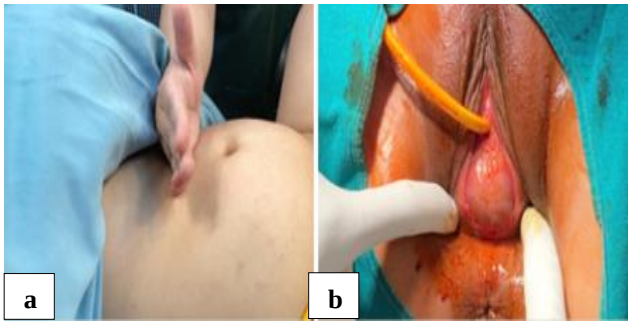

Figure 1: (a) Distended abdomen with height of uterus corresponding to 24 weeks, and (b) per vaginal examination showing tense swelling bulging form the introitus.

An ultrasound examination was done which showed presence of elongated, distended anechoic collection located in the midline posterior to urinary bladder. This collection showed presence of low-level echoes on ultrasound. The uterus was identified in continuity with the upper end of this collection. These findings were suggestive of blood collection causing marked distention of vaginal vault i.e., hematocolpos.

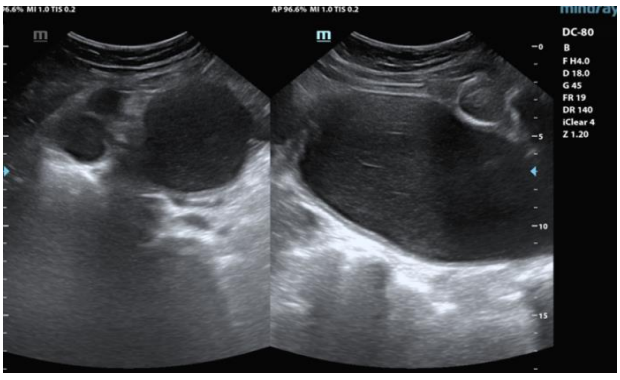

Figure 2: Grayscale ultrasound showing anechoic collection posterior to the bladder, with internal low-level echoes; features s/o hematocolpos.

Magnetic resonance imaging (MRI) imaging was done to further confirm the diagnosis and to rule out presence of other associated mullerian anomalies. The MRI imaging showed presence of distended vagina with fluid-fluid level and causing compression of bladder. Similar findings were also seen in axial MRI images. Thus, the diagnosis of hematocolpos was confirmed on MRI imaging. No other associated mullerian anomalies were seen on magnetic resonance imaging.

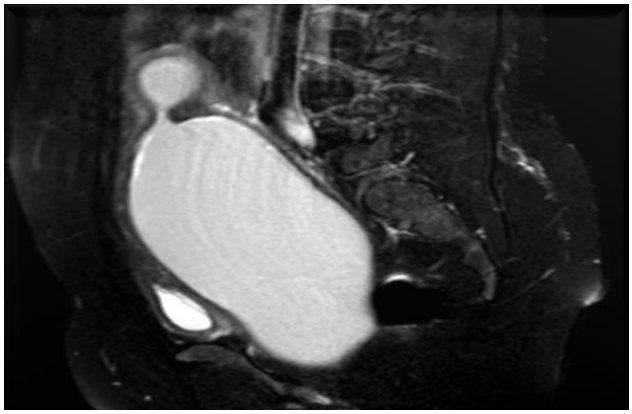

Figure 3: T2-weighted MRI image (sagittal section) showing the distended vagina with a fluid–fluid level which compresses the bladder; features s/o hematocolpos.

Patient was started on injectable antibiotics and was planned for operative intervention after proper work up. Routine blood investigations such as complete blood count, liver functions test and renal function tests were normal. Patient was negative for HBsAg and HIV. Patient was planned for resection of hymen after pre anaesthetic check-up. Cruciate incision was given over the hymen and around 700 ml of collected blood was drained. Eversion and suturing of edges of incision was done to maintain patency of outflow tract.

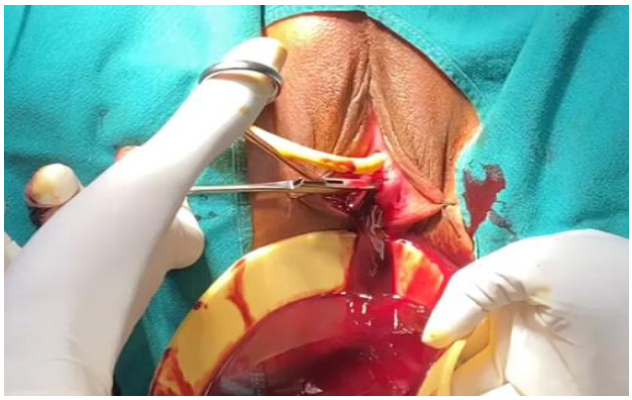

Figure 4: Cruciate incision over hymen and hymenal opening created by virginity preserving hymenoplasty.

Patient was discharged on postoperative day 2 without any complications. Patient was called for follow up after 15

days and then after 3 months. During the 3 months follow up patient was symptom free and had regular menses.

DISCUSSION

Imperforate hymen is a rare condition which usually present in adolescent girls with primary amenorrhea and cyclical abdominal pain. The diagnosis is suspected if there is presence of bulging from introitus and having bluish tinge. The diagnosis can easily be confirmed on the basis of ultrasound examination.[6] Further imaging such as magnetic resonance imaging is usually done to rule out presence of associated uterine anomalies such as presence of transverse vaginal septum or uterine septum which then may lead to possibility of rare causes of cryptomenorrhea such as Mayer-Rokitansky-Kuster-Hauser syndrome. In most of the instances this imperforate hymen is sporadic however there are reported cases in whom there was family history of imperforate hymen causing cryptomenorrhea.[7]

In this patient urinary retention, primary amenorrhoea despite well-developed secondary sexual characters with suprapubic lump as well as other clinical and imaging findings favoured diagnosis of cryptomenorrhea (due to imperforate hymen). As in this case patients may present with retention of urine secondary to distension of vagina causing stretching and obstruction of the urethra because of its close anatomic relationship with the anterior vaginal wall. Diagnosis can be made on the basis of physical examination and can be confirmed by imaging techniques such as ultrasound imaging. Magnetic resonance imaging may be useful to diagnose associated mullerian anomalies.[8]

Once the diagnosis is confirmed the management is usually straightforward and consist of ensuring drainage of the vagina and the uterus by giving a cruciate incision over the imperforate hymen under aseptic conditions.[9] Care should be taken to avoid injury to urethra during surgery. The outcome of the surgery is excellent and recurrence is rare. The uterus should not be squeezed in the course of the drainage because this may cause the altered menstrual blood to flow back through the fallopian tubes into the peritoneal cavity with the possibility of tubal adhesions and endometriosis, both of which may lead to infertility.[10]

CONCLUSION

Young girls presenting with primary amenorrhea, cyclical abdominal pain and urinary retention should be suspected of having imperforate hymen. Once the diagnosis if confirmed on the basis of imaging the treatment consists of virginity preserving hymenotomy.

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