

Hematometrocolpos: An Adolescent Girl with Amenorrhea and Abdominal Discomfort

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ABSTRACT

Haematometrocolpos is a result of a rare congenital abnormality of the female urogenital tract imperforate hymen that has the clinical presentation of absent vaginal opening, concealed menstruation with cyclical pain, and presents to the consultant as the case of primary amenorrhea. We report the case of a 15-years-old female who attended the Obstetrics and Gynecology Out-Patient-Department with primary amenorrhea and abdominal discomfort, and in the process was found to have an imperforate hymen and hematometrocolpos on Ultrasonography of Abdomen and Pelvis confirmed by MRI Pelvis. It is important to have a sound clinical acumen to diagnose the same as ignorance can advance to infertility, unnecessary medications, and other complications.

Keywords: Haematometrocolpos, Cryptomenorrhoea, Primary Amenorrhoea

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INTRODUCTION

Haematometrocolpos is a result of a rare congenital abnormality of the female urogenital tract imperforate hymen that has the clinical presentation of absent vaginal opening, concealed menstruation with cyclical pain, and presents to the consultant as a case of primary amenorrhea. The orifice of the vagina is surrounded by a thick, elliptical ring of connective tissue: the hymen. The hymen develops at approximately 60 mm crown-rump (CR) length, from the proliferation of the epithelial cells of the sinuvaginal bulb, which arises from the dorsal wall of the urogenital sinus, the region of the sinus tubercle in the growing female embryo.

During childhood, the hymen is a membranous fold along the posterior margin of the vaginal introitus. When the fold forms a complete diaphragm covering the entire vaginal introitus, it is termed as imperforate hymen. Studies have shown that the hymen fails to perforate in approximately 2000 females during *in utero* genitourinary embryonic development.^{1,2} After achieving puberty these girls have concealed menstruation leading to cyclical pain and accumulation of the menstrual blood in the vagina initially and gradually advances to collection in the uterus and retrograde menstruation. The classical presentation has an adolescent girl with an imperforate hymen, who complains of episodic, cramping lower abdominal and pelvic pain. We present a similar case of an adolescent young female who presented with abdominal pain and nausea, and was diagnosed to have Haematometrocolpos on Ultrasonography of Abdomen and Pelvis and was confirmed by MRI Pelvis. Imperforate hymen with Haematometrocolpos must be considered in the differential diagnosis of young female patients with cyclical pelvic pain & primary amenorrhea. The physical local examination, and ultrasonography of abdomen and pelvis followed by MRI pelvis help in

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Conflict of Interest: None

diagnosis and appropriate surgical treatment thus preventing complications of the disease including infertility.

CASE REPORT

A 15-year-old adolescent female presented to the obstetrics and gynecology out-patient-department with intermittent lower abdominal pain for 8 days. Her pain was bilateral and cramping, with episodes of intense worsening that were associated with non-bloody, non-bilious emesis. She reported abdominal distension and denied urinary complaints, vaginal bleeding, or any discharge. She had not attained menarche and denied sexual activity. After examination of the secondary sexual characteristics, the patient had tanner stage IV development but had no menstruation. The patient was afebrile with a pulse of 88 beats per minute, blood pressure of 90/60 mmHg, respiratory rate of 20 breaths per minute, and oxygen saturation of 97%. She complained of nausea and abdominal pain. Abdominal examination was notable for mild distension, suprapubic tenderness, and a palpable mass in the left iliac fossa. Bowel sounds were normal. A local pelvic examination noted a bulging, tense, blue, imperforate hymen. The patient was advised for the ultrasonography of the abdomen and pelvis, which showed heterogeneous collection (approximate volume, 500-550 cc), with thick dense echoes in the vagina which communicate, via the cervix, with the endometrial canal, which hinted the signs of hematometrocolpos.

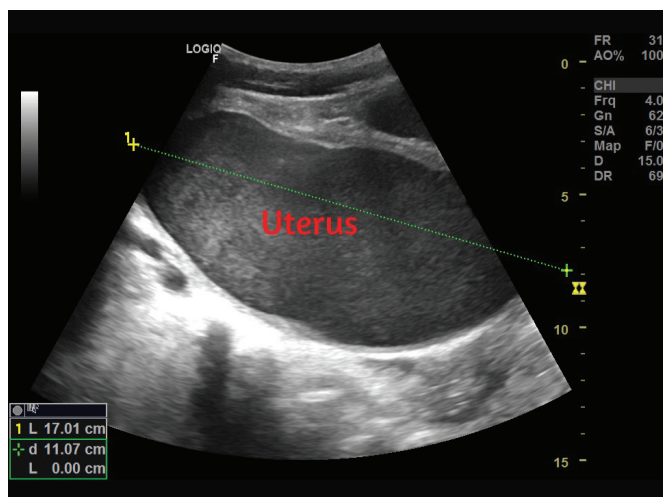


Figure 1: Ultrasonography picture showing Haematometocolpos.

Ultrasonography Abdomen and Pelvis - bulky uterus and heterogeneous collection (Approximate volume,500-550 cc), with thick dense echoes in the vagina which communicates, via the cervix, with the endometrial canal, which hinted the signs of hematometocolpos MRI correlation was advised next. From an MRI pelvis, it was observed that:

- Uterus is enlarged with a large collection in the cavity, more in the lower endometrial cavity with thinned-out myometrium.
- The collection is extending into the vagina which is hyper-intense on STIR, T1Wt and T2Wt images suggestive of hematometocolpos.
- The entire collection measuring 69(mL) x 141(cc) x 64(ap)mm.
- The fundus and body of the uterus is bent anteriorly.

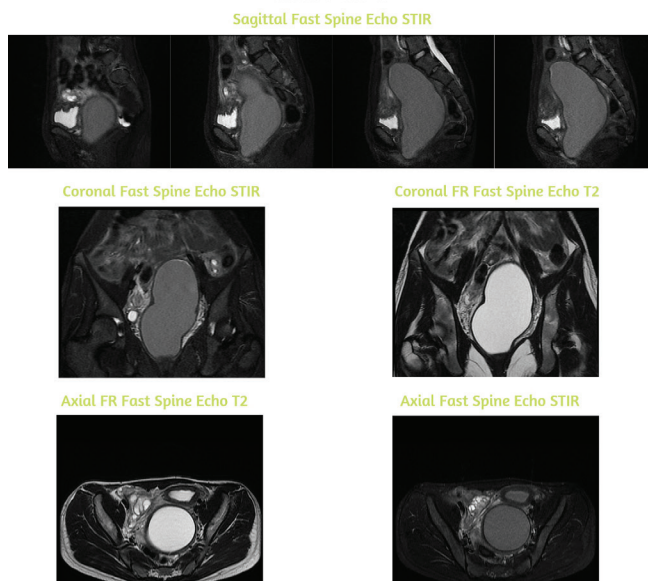
Renal function and Liver function were found to be normal on a chemistry panel. She was diagnosed with hematometocolpos, and hymenoplasty was suggested as the method of management. The patient underwent hymenoplasty after surgical fitness. She recovered without complication and on follow had normal menstruation one month later.

DISCUSSION

Imperforate hymen is a rare embryonic abnormality that remains asymptomatic till puberty. After the onset of menses which is concealed most patients experience cyclical pain in the lower abdomen and become symptomatic. As the bleeding is concealed due to the imperforate hymen, the retained blood and endometrial tissue accumulates and distends the vaginal canal as in cases of hematocolpos, and if this is unnoticed then distends the uterus as in cases of hematometra, or both (hematometocolpos). The classic presentation is abdominal and/or pelvic pain which is cyclical and characteristic cramping of the menstrual pain, and associated with vomiting. Back pain, constipation, urinary retention, or urinary continence are other less frequent symptoms.²⁻⁴

Pre Operation Radiological Investigation

MRI Pelvis



- Uterus is enlarged with large collection in the cavity , more in the lower endometrial cavity with thinned out endometrium
- The collection is extending into the vagina which is hyperintense on STIR , T1Wt and T2Wt images
- The entire collection measures 69 (mL) × 141 (cc) × 64 (ap)mm.
- The fundus and body of uterus is bent anteriorly

Figure 2: MRI Pelvis showing Haematometocolpos

On examination, a palpable pelvic mass and a bulging hymen which is often blue were observed on local inspection. Ultrasonography of the abdomen and pelvis shows an enlarged uterus with a heterogeneous collection, with thick dense echoes in the vagina which communicates, via the cervix, with the endometrial canal. Depending on the extent of dilation of the pelvic organs, the uterus may be characterized by a large collection in the endometrial cavity, more in the lower endometrial cavity with thinned-out myometrium. The blood and endometrial tissue within the uterus appear hypoechoic.³⁻⁵

MRI pelvis helps in confirmation and excluding the transverse vaginal septum which has a similar presentation. Also, the thickness of the imperforate hymen or vaginal septum can be determined by MRI.

The management of imperforate hymen consists of surgical repair which needs skill for cosmetic and therapeutic construction. An incision is made in the membrane of the imperforate hymen followed by evacuation of the blood and tissue. Residual hymenal tissue is also repaired and vaginal introitus is reconstructed. Postoperative perineal hygiene and care of the operated site are necessary to prevent infection, adhesions, and recurrence. Delay in the diagnosis of hematometocolpos might develop retrograde menstruation, endometriosis, pelvic adhesions, fallopian tube damage, and infertility in the patient.^{3,6} It can have complications like

hydronephrosis from extrinsic compression of the ureters by the enlarged uterus and endometriosis due to retrograde menses.

CONCLUSION

Hematometrocolpos is a result of a rare congenital irregularity of the female urogenital system, an imperforate hymen, and subsequent menstruation. Hematometrocolpos presents with primary amenorrhea and abdominal and pelvic pain. It is therefore important to consider the diagnosis of hematometrocolpos in young female patients presenting with abdominal pain and amenorrhoea, which can be diagnosed by examination and Ultrasonography of the abdomen and pelvis, and confirmed by MRI Pelvis. Early diagnosis and surgical repair helps in the prevention of long-term complications.⁷

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