

CASE REPORT

Imperforate Hymen

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ABSTRACT

An 11-year-old girl presented with pelvic pain for 2 weeks. Transabdominal ultrasound demonstrated a distended vagina filled with echogenic material consistent with blood. The uterus was visualized and was similarly distended. A diagnosis of hematocolpos and hematometria secondary to imperforate hymen was made. Hymenectomy was performed which drained 1.5 L of dark menstrual blood. The patient had an uneventful postoperative course.

Keywords: Abdominal ultrasound, Hematocolpos, Imperforate Hymen.

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HISTORY

Miss R, an 11-year-old girl, presented with a 2-week history of recurrent, noncyclic, pelvic pain associated with nausea and vomiting. Miss R never had a menstrual period and is virgin. Her past medical and surgical history is negative; she takes no medications and has no known allergies. Family history is only significant for type II diabetes mellitus.

PHYSICAL EXAMINATION

On examination, she is afebrile, heart rate and respiratory rate were within normal limits, and blood pressure was 120/80 mm Hg. She had a body mass index of 29 kg/m². She had well-developed secondary sexual characteristics at Tanner stage 4 for genitalia, pubic hair, and breasts. Pelvic examination revealed normal external genitalia with a complete imperforate hymen.

LABS

- Karyotype was normal.
- Hemoglobin was normal.

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ULTRASOUND FINDINGS

An ultrasound (US) of the renal collecting system showed normal anatomy with subsequent confirmatory magnetic resonance imaging. Transabdominal US of the pelvis showed a normally contoured uterus measuring 4.5 cm × 3.1 cm (Fig. 1). The vaginal cavity measured 6.9 cm and appeared distended with echogenic fluid consistent with blood (Fig. 2).

MANAGEMENT

A hymenectomy was scheduled for Miss R. Intraoperatively, the bladder was emptied and the hymen was incised (Fig. 3). Approximately 1.5 L of dark, chocolate syrup-like blood (Fig. 4) drained from the vagina. A small gauze packing was placed in the vaginal introitus for 24 hours

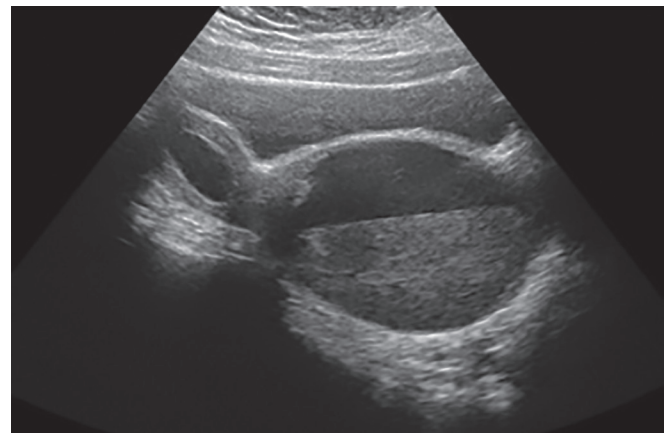


Fig. 1: Transabdominal ultrasound of uterus containing blood and distended vagina filled with blood

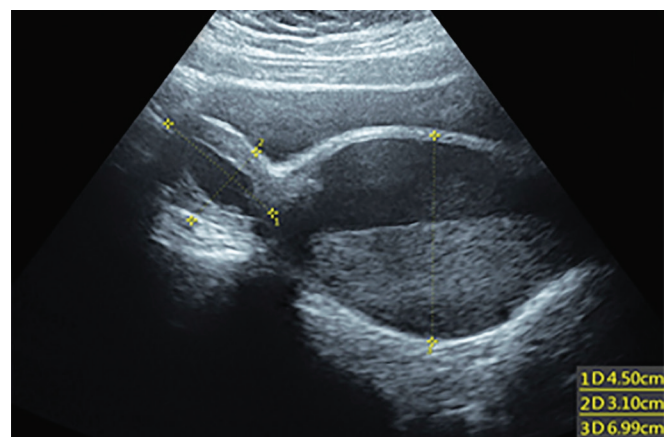


Fig. 2: Transabdominal ultrasound showing a uterus measuring 4.5 cm × 3.1 cm and vagina full of blood measuring 6.9 cm



Fig. 3: Appearance of the vulva, vagina, and the hymen prior to hymenectomy

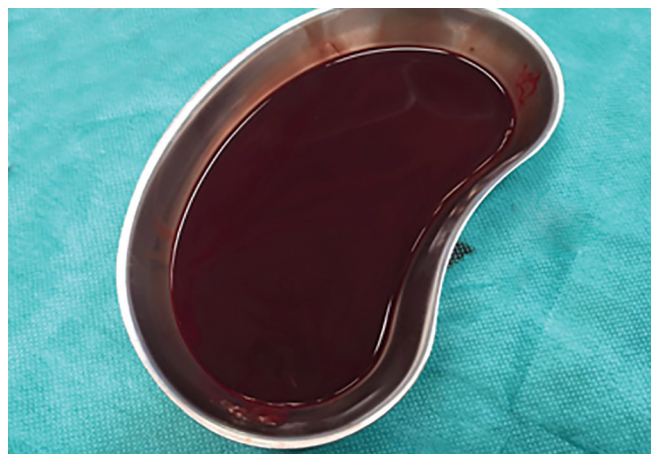


Fig. 4: 1.5 L of drained dark menstrual blood

postoperatively to avoid closure of the incision. The procedure was uncomplicated and Ms. R was discharged on the same day. She started menstruating regularly afterwards.

DISCUSSION

Hematocolpos and hematometria are the accumulation of menstrual blood in the vagina and uterine cavity respectively.^{1,2} This is due to an obstruction in the outflow tract of the lower reproductive organs. The most common cause of obstruction is an imperforate hymen.³ During fetal development, a hymenal membrane separates the vaginal lumen from the urogenital sinus. The hymenal center degenerates before birth leaving only a thin mucous membrane around the vaginal introitus by birth. Failure of degeneration results in an imperforate hymen.⁴

Upon physical examination of the vulva in a neonate with imperforate hymen, a thin bulging blue-white tense and nontender hymenal membrane will be observed.⁵ If not diagnosed at birth, the girl with imperforate hymen will remain asymptomatic until sometime after menarche. At this point, adolescents will typically present with cyclic pelvic pain and hematocolpos, a blue discoloration of the hymenal membrane on physical examination. Compression from a large hematocolpos may result in urinary retention, painful defecation, and low back pain.⁶⁻⁷

Compared to prepubertal diagnosis of imperforate hymen, for example, in neonates and preadolescent girls, symptomatic adolescent girls undergo more diagnostic testing. Since imperforate hymen can be easily detected by physical examination of the external genitalia, this important part of the examination should be included in routine practice to decrease late diagnosis, and morbidity in undiagnosed patient.^{8,9}

A new imaging technique of translabial ultrasound (TLUS) has been recommended by Dimitrios et al.¹⁰ Using TLUS, dynamic examination of the adnexa, uterus, vagina and nongynecologic pelvic can be performed due

to proximity to the labia. This has the added advantage for use in young girls as it avoids the need for intravaginal placement of a probe as is required in transvaginal US. Although transabdominal ultrasound is excellent in the diagnosis of hematoceles or hematometria, a very caudally located transverse septum placed will not be seen. Therefore, TLUS should be done in addition.

Since the embryological development of the reproductive and urinary systems are closely related, lower genital tract anomalies are highly associated with renal and urinary tract anomalies. As such, infants or adolescents with a lower genital tract anomaly should undergo a thorough evaluation of the renal system.⁶

Infants or adolescents with a lower genital tract anomaly should undergo a scan of their kidneys and urinary tract to exclude any renal or urinary tract abnormalities that may affect morbidity. A case report of an imperforate hymen by Gueye et al⁵ reported a morphological anomaly in the patient's left kidney, which was reversed after a hymenectomy was performed.

Prognosis following hymenectomy is excellent as studies have failed to show long-term complications. A retrospective study evaluating women for an average of 13 years following treatment for obstructive vaginal malformations showed no long-term gynecological problems.¹¹ Another study that investigated pregnancy success after surgical correction of an imperforate hymen and transverse vaginal septum concluded that accurate diagnosis and surgical treatment to relieve obstruction and drain the accumulated blood preserved fertility by preventing endometriosis.¹²

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