

The Imperforate Hymen: A Case Series Study

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I. INTRODUCTION

Imperforate hymen is a rare anomaly of the reproductive tract with a prevalence of approximately 0.1% in female newborns[1].

Imperforate hymen, though being the commonest female genital tract malformation [2], is a rare occurrence with a prevalence of 0.014-0.1% [2-4]. It mostly presents during puberty [2,5] although diagnoses in utero [4, 6, 7] and during the new born period and childhood [4, 8] are also documented. Although an imperforate hymen usually does not accompany other genitourinary tract anomalies, it is associated with severe complications if detected late[5]. Adequate treatment is necessary because complications, such as endometriosis, subfertility, infection, hydronephrosis, and renal failure, can occur in rare cases[3,9]. We report the case of a 13-year-old girl with a huge hematocolpometra and an imperforate hymen.

MATERIAL AND METHOD:A case series study of five cases of imperforate hymen was carried out in the OBGY department of ZMCH medical college. The study was carried out between March 2019 to March 2023. We got five cases of imperforate hymen. Cases were managed adequately after taking proper consent.

II. CASES:

Case 1

14 year old unmarried girl of presented to hospital with a complaint of lower abdominal pains since last one week associated with tenesmus. She had reduced appetite and poor intake of food due to the colicky pains. She had observed some suprapubic fullness. She had history of vomiting and fevers also. She had never had her menstrual periods but she had developed secondary sexual characteristics(Tanner stage 3-4).

On examination, she was in severe pain, and had moderately tender suprapubic mass corresponding to a uterus at 16 weeks. Rectal examination revealed an anterior mass. Perineal examination revealed a bulging imperforate hymen. Pelvic ultrasound done revealed distended uterus and vagina all filled up with homogenous thick fluid. A diagnosis of hematocolpometra was made.

In operation theatre, an X-shaped incision of the hymen was made under anaesthesia and approximately 600mls of thick chocolate coloured blood drained. The edges of the hymen were everted and stitched by Vicryl 2/0 sutures. Analgesic cream and prophylactic oral antibiotics were given. She made uneventful recovery and was doing well at one and half month.

Case 2

A 16-year-old patient presented to our clinic upon where she had applied to due to the complaint of delayed menstruation. Personal and family history of the case was not significant.

In her physical examination, secondary sex characters were detected to have developed (Tanner stage 4), and there was a tender supra pubic buldge present. In the gynecological examination, it was noted that no hymenal opening was present, and a swollen hymen with purple highlights was present. In the ultrasono-graphical examination of the patient, a hypoechoic cystic formation that was measured approximately 10 cm in diameter, was observed along the pelvic midline.

Ovaries and uterus were normal in appearance. Case underwent a hymenotomy procedure, by making -x- shaped incision and approximately 400 cc of dark-colored, tarry menstrual blood was aspirated. Case was discharged on fifth day and in the following examination carried out 1.5 months later, it was determined that she started to menstruate.

Abdominal pain resolved completely after the surgery, and she had regular menstruation subsequently. The uterus and vagina were normal in appearance on follow-up sonography.

Case 3

A 13-year-old patient presented to our clinic with the complaint of abdominal pain. No particular features were recorded in the personal and family history of the case. Vitals were in normal range by her physical examination. In the examination for secondary sex characters, breast development, and axillary and pubic hair growth were consistent with grade 3 according to the Tanner grading system. In the genital examination of the case with no menstrual period so far, it was recorded that no hymenal opening was present, and a swollen hymen with purple highlights was revealed, which closed the vagina by forming a curtain around. In the pelvic ultrasonography, uterus and the right ovary were normal; A dark-colored cystic formation of 82x72 mm compatible with hematocolpos was noted along the pelvic midline. This lesion was 13x8 cm in sizes and considered as hematocolpos. Uterus and bilateral ovaries appeared normal. In the laboratory examination there were , : Leukocyte: 9130/mm³, hb:11.7 g/dl. Performing a cruciform hymenotomy under general anesthesia, approximately 550 cc old blood was aspirated. Case was discharged on the next day, and in the following examination carried out 1.5 months later, she indicated that she menstruated normally and had no complaints.

Case 4

A 15-year-old patient was referred to our clinic upon determining imperforate hymen in an external center, where she had applied to with complaints of abdominal and back pain. Vital findings were normal in her physical examination. In the gynecological examination performed, imperforate hymen with purple highlights was present. In the rectal examination , a fluctuating mass with smooth contours that was measured approximately 15 cm was palpated along the pelvic midline. In the ultrasonographic examination, a dark-colored mass lesion of 12x15 cm in size was observed .In the laboratory examination, following values were obtained: Leukocyte: 8270/mm³, Hb: 12 g/dl etc. Case underwent a hymenotomy procedure under general anesthesia, and approximately 800 cc of dark coloured menstrual blood was aspirated. The patient was discharged on the 4 th day. In her examination performed 2 months later, no problems were detected.

case 5

A 13-year-old girl came our department with periodic lower abdominal pain. The lower abdominal pain persisted for 7 days each month with worsening severity of pain over the year. The patient visited the emergency room due to lower abdominal pain. At time , she was given conservative treatment, for pain control. She complained of urinary frequency ,nausea, vomiting, diarrhea, and sometimes fever. She had not attained menarche.

The personal, past and family histories were not significant. The patient's blood pressure, heart rate, and body temperature were within the respective normal ranges. On physical examination, Tanner stage III-IV secondary sexual characteristics were observed. In the lower abdomen , a tender pelvic mass was palpable. On pelvic examination, the hymen was found to be imperforated with bulging of the membrane . No external vulval anomalies were found. Laboratory findings were as follows: Leukocytosis (12150/ μ L with 80% neutrophils); elevated serum C-reactive protein level (194.4 mg/L; normal range < 3 mg/L);

Initial imaging included transabdominal ultrasonography; it revealed a hypoechoic pelvic mass below the bladder, which was suggestive of hematocolpos . : Transabdominal ultrasound shows a hypoechoic cystic mass below the bladder (14.79 cm \times 8.64 cm);

The vaginal cavity was grossly distended with hypoechoic contents. These findings suggested hematometra with huge hematocolpos with no other urogenital abnormalities .The patient was diagnosed with a huge hematocolpometra with imperforate hymen. Under general anesthesia, the patient underwent hymenectomy with a cruciate incision on the bulging membrane. Almost 750 mL of dark red blood was drained immediately after the incision. After adequate drainage and irrigation, no other abnormalities were found on examination of the vaginal canal. The edges of the incised hymen were everted and sutured using 3-0 Vicryl .Intravenous antibiotics were given for 3 d after the surgery. On follow up after one month she started normal menstruations.

DISCUSSION: We got five numbers of imperforate hymen cases during 4 years follow up period. At time of admission they were having acute emergency features. They were managed after admission uneventfully.

Cases with imperforate hymen can remain asymptomatic until puberty, and they apply with complaints of primary amenorrhea and cyclic pelvic pain in puberty. One of the rarely recorded reasons for the lower abdominal pain during adolescent period is imperforate hymen(2).

Imperforate hymen is a rare genital tract anomaly which has an incidence of about 1 in 2000 [10].

Thus, cases with imperforate hymen may apply with different clinical conditions such as back pain, urinary symptoms and constipation(11).

Primary amenorrhea, cyclical abdominal pain, palpable pelvic mass, and non-specific symptoms, such as abdominal distension, constipation, and urinary retention are observed in adolescent girls with an imperforate hymen. . Although most cases of imperforate hymen are sporadic, some cases can be due to familial inheritance. A previous study report suggested that imperforate hymen could be recessive and dominant inheritance patterns[12].

When young adolescent females present, the causes can include mechanical obstructions (urinary tract stones, urethral strictures, trauma to external genitalia, and imperforate hymen), neurological disorders, and urinary tract infection [13].

Patients with imperforate hymen are asymptomatic until menarche, and early diagnosis is not easy before this period. Abdominal pain is the one of the most common clinical symptom associated with an imperforate hymen. Abdominal pain develops after an asymptomatic period during which the menstrual blood becomes collected. The collection of blood in the uterus and vagina results in a huge pelvic mass. The frequency of hematocolpos is 0.14% in patients with an imperforate hymen[14].

An imperforate hymen can be easily missed without careful history taking and a thorough physical examination. Timely diagnosis and appropriate treatment are helpful because complications, such as endometriosis, subfertility, infection, hydronephrosis, and renal failure, can occur in rare cases[3,9].

Imperforate hymen is a layer of connective tissue that forms a transverse septum and obstructs the vaginal opening. Usually, the hymen is a membrane that embryologically develops through the fusion of the caudal end of the paramesonephric ducts and the urogenital sinus [5, 6,9,15].

Imperforate hymen can be readily diagnosed on pelvic examination. A bluish bulging hymen is observed at the vaginal introitus in patients with hematocolpos. Ultrasound is used in differentiating pelvic cystic masses. Additionally, MRI may help to identify other diagnoses, such as cervical atresia, vaginal septum, and vaginal agenesis. MRI make the diagnosis easy. {16}.

The treatment of choice for an imperforate hymen is surgery, such as hymenectomy (cruciate incision or excision of hymen)[3]. After adequate drainage of menstrual blood and irrigation, the incised vaginal mucosa may be sutured to form a hymenal ring. The possible complications of this procedure include reclosure, vaginal adhesion, and vaginal adenosis[17].

In the further examinations of the same case, imperforate hymen was detected and the regression of urinary symptoms was ensured performing a hymenotomy procedure by cruciform incisions.

The incidence of recurrence can be decreased by everting the edges of the incised vaginal mucosa[18].

Upon the request of families of other cases regarding the preservation of hymenal structure, a hymenotomy procedure with simple excision was performed and Foley catheter was inserted. Intact hymenal structure was acquired in methods where hymen was preserved.

Our cases applied during the adolescent period. Cruciform incision technique was used in cases, and aspiration was performed following the incision procedure.

Cases with imperforate hymen are usually diagnosed

. A similar case was presented by Adal> et al. as well. In the pelvic magnetic resonance imaging of the case with complaints of difficulty while urinating, dysuria and pelvic pain the case had been suffering for one month, imperforate hymen was identified and a hymenotomy procedure was performed. No complaints were recorded in the case followed-up for 6 months(19).

In the our study patients underwent hymenectomy with a cruciate incision on the bulging membrane. After adequate drainage and irrigation, no other abnormalities were found on examination of the vaginal canal. The edges of the incised hymen were everted and sutured using 3-0 Vicryl .Intravenous antibiotics were given for 3 d after the surgery. On follow up after one month she started normal menstruations.

Conflict of interest .NA

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