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Case Series

A case series of imperforate hymen

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ABSTRACT

Imperforate hymen is an uncommon congenital anomaly of the female genital tract, which is caused by the persistence of the hymenal membrane to perforate during embryogenesis. Although it is benign, delayed diagnosis can cause marked morbidity and it typically occurs in adolescents with primary amenorrhea, cyclic abdominal pain, urinary retention, or pelvic mass. Their early recognition is essential to prevent patients from developing sequelae such as endometriosis, infection, infertility, or urinary tract injury. We report a series of three adolescent girls with imperforate hymen who presented with abdominal pain, urinary retention and primary amenorrhea. Diagnosis was based on physical examination, including ultrasonography and all patients were managed with hymenotomy or hymenectomy with good response and return of normal menstruation. This case series emphasizes the need for a high index of suspicion of imperforate hymen in adolescent girls with lower abdominal pain or delayed menarche and that timely diagnosis, correction, and surgical management are crucial to prevent long-term complications.

Keywords: Imperforate hymen, Amenorrhea, Congenital uterine anomaly, Cyclical abdominal pain

INTRODUCTION

The hymen is a thin membrane of stratified squamous epithelium enclosing the introitus. It is the junction of the urogenital sinus and the sinovaginal bulbs.[1,2] In embryonic stages, the hymen is perforated to make a connection between the vestibule and vaginal canal.[3] When the hymen does not spontaneously rupture during neonatal development, it is called as imperforate hymen. It can be asymptomatic or present with obstructive symptoms of female genital and urinary tract during perinatal, pediatric or adolescent years.[3-5] As the influence of maternal estrogen subsides, hymenal opening expands and adopts a crescentic appearance.[1,2] Imperforate hymen is often diagnosed in adolescent girls not attaining menarche, mainly presenting with amenorrhea and lower abdominal pain or urinary retention.[6,7] Most young girls are asymptomatic and diagnosed incidentally until menarche.[8] Rarely it presents as abdominal mass in neonate. Although it is a benign congenital disorder, late detection and diagnosis may result in severe morbidity and requirement of additional interventions.[9] Without proper management, it can lead to infections, endometriosis, sub-fertility. Treatment includes hymenectomy by cruciate incision/simple vertical incision/hymenotomy followed by suturing of margins to maintain patency.[10] Other treatment include hymenectomy using electrocautery, carbon dioxide laser, insertion of 16 F Foley catheter with 10ml balloon insufflation to preserve hymenal tissue.[10]

CASE SERIES

Case 1

A 12-year-old girl was boughtby her mother to the Obstetrics and Gynecology Outpatient Department (OG OPD) with a chief complaint of severe abdominal pain and not attaining menarche. The pain was sudden in onset, progressive in nature, not associated with fever, bowel or bladder disturbances. On examination, vitals were stable,

tenderness present over hypogastric region, suprapubic bulge was present. The girl was found to have breast, axillary hair, and pubic hair development corresponding with Tanner staging 2. Local examination revealed hymen intact with hymen bulge and bluish hue was seen at introitus. Ultrasonography (USG) was done imperforate hymen with hematocolpus of approximately 300 cc. Patient underwent hymenotomy by making a cruciate incision over the hymen and about 300 cc of hematocolpos drained. Menstrual cycles resumed well post operatively.

Figure 1: Imperforate hymen.

Figure 2: Cruciate incision.

Case 2

A 14-year-old girl was bought by her mother to casualty with inability to pass urine since 4 hours with severe pain abdomen with no other specific complaints. Patient was immediately catheterized and approximately 700 ml of clear urine drained. Local examination showed imperforate hymen and USG was done and showed hematocolpos, micturating cystourethrogram (MCU) was done to rule out any urinary tract anomalies and was found to be normal. After ruling out other causes, patient underwent hymenectomy. Patient regained normal bladder habits post-hymenectomy.

Case 3

A 16-year-old girl was brought by mother with not attaining menarche and complaints of cyclical abdominal pain monthly. On examination patient is height, weight, and body mass index (BMI) corresponds to age. Secondary sexual characters correspond to Tanner stage 3. Local examination showed imperforate hymen and USG was done and showed hematometra and underwent hymenectomy.

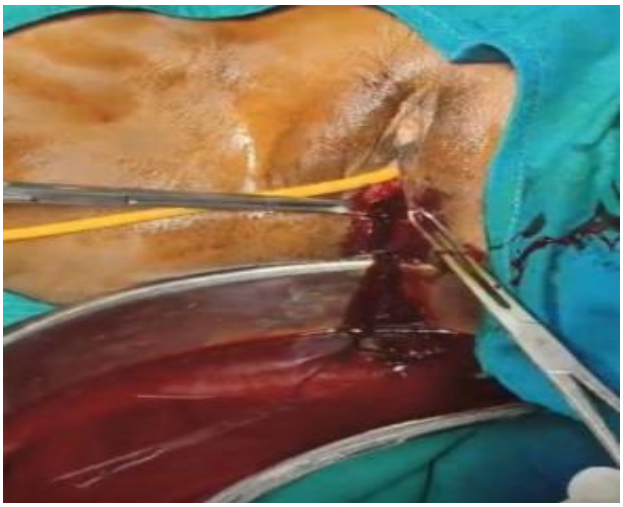

Figure 3: Hematocolpos.

Prognosis

Adolescent girl coming with amenorrhea and abdominal pain should be checked for imperforate hymen. Surgical measures like hymenotomy resolves the symptoms and resumes normal menstrual function and avoids complications like acute urinary retention, pyosalpinx, endometriosis, pelvic inflammatory disease, infertility, hydronephrosis and even renal failure.

DISCUSSION

It is one of the rarest congenital malformations of the female genital tract and is reported to have a reported incidence of 0.0014% to 0.1%.[3] Although straightforward to diagnose and a surgical curable condition, a diagnosis can be late due to non-specific presentations, lack of suspicion, or limited physical examination, which can result in additional morbidity.[3,5,6] In all three of our cases, the clinical presentation was typical with primary amenorrhea, abdominal pain; in one case there was acute urinary retention. This supports the reports in the literature that hematocolpos and cyclical pain are the most frequent presentations among adolescents.[3,6]

In our first case, the diagnosis was suggested by the presence of a suprapubic mass and a bulging bluish hymen, which is compatible with the classical description of hematocolpos as a result of an imperforate hymen.[3] Marino et al. also described such cases in which ultrasonography

established the diagnosis of hematocolpos hampering a single surgeon to operate simultaneously with other cases.[6] Likewise, Glavan et al reported that the youngest case encountered was 16-month old and that although puberty is usually the time of presentation paediatric cases can be encountered when symptoms, as in their case of urinary obstruction, are present.[5]

Our second case of acute urinary retention highlights the potential urological complications. Similarly, Tanitame et al reported significantly, large hematocolpos affecting bladder outlet and consequently hydronephrosis in an untreated patient.[7] Early diagnosis and surgical management in our patient prevented late renal sequelae.

The third one showed cyclical abdominal pain and primary amenorrhea, the most common presentation in adolescent girls with an imperforate hymen. This is consistent with the systematic review of Lee and colleagues who also found delayed menarche and cyclic abdominal pain to be the most common presenting symptoms, followed by urinary retention and abdominal mass.[3]

The treatment in all of our cases had been hymenotomy or hymenectomy, which is still the gold standard. Dividing cruciate incision with draining and marsupialization of its edges has received the most general endorsement.[2,6] Although other techniques including electrocautery, laser ablation, or Foley catheter balloon dilation have been reported, our experience suggests that traditional hymenectomy is successful and safe and that patients have a good postoperative outcome with normal resumption of menses.[8] Of note is that none of our patients had complications or restenosis after surgery, in contrast to the recurrence described by Ossman et al, where the hymen spontaneously reformed following the second hymenectomy.[9]

CONCLUSION

Timely diagnosis and prompt treatment are critical in treating imperforate hymen. Specific pediatric and gynecologic knowledge and skills are necessary to provide comprehensive, patient centered care. In addition to the anatomical and physiological aspects of imperforate hymen, its various clinical presentation, potential complications, the psychological impact on affected individual must be understood. It is important not to misdiagnose as vaginal septum or agenesis to prevent severe complications of wrong treatment.

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