

Imperforate hymen: cause of lower abdominal pain in teenage girls

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ABSTRACT

Imperforate hymen is a relatively rare congenital anomaly. However, it is not an uncommon cause of lower abdominal pain presenting in teenage girls. Without careful history taking and thorough examination, the condition can be missed easily. We report an imperforate hymen presenting as abdominal pain in three teenage girls aged 12, 12 and 13 years, respectively, within a six-month period. The presentation was reviewed and the various types of hymenotomy were discussed.

Keywords: adolescents, abdominal pain, haematocolpos, hymenotomy, imperforate hymen

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INTRODUCTION

Imperforate hymen is a relatively rare congenital anomaly, in which the hymenal membrane occludes the vaginal orifice, resulting in haematocolpos, which often leads to abdominal pain in adolescent girls. It was reported that imperforate hymen occurs in one in 1,000 to one in 10,000.⁽¹⁾ We report three cases of imperforate hymen, presented over a period of six months, that were initially missed. The importance of detailed history taking and thorough examination is highlighted.

CASE REPORTS

Case 1

In April 2006, a 12-year-old premenarchal girl was admitted with a two-month history of cyclic lower abdominal pain. Before admission, she had been treated by several general practitioners with analgesics. On admission, there was an obvious huge lower abdominal mass, and on careful perineal examination, a bluish bulging imperforate hymen was identified (Fig. 1). A hymenotomy and drainage of around 600 ml of old blood products were performed (Fig. 2). She was discharged on postoperative Day 2 with an uneventful recovery. On follow-up, she had remained well and had normal menses.



Fig. 1 Photograph shows the bulged hymen with a collection of menstrual blood.



Fig. 2 Operative photograph shows the appearance of the introitus after the hymenotomy.

Case 2

In July 2006, a 12-year-old premenarchal girl presented with a five-month history of lower abdominal pain associated with tenesmus and dysuria. On the day of admission, she could not pass urine for more than 12 hours. Despite the drainage of 300 ml of urine through a Foley catheter, there was still the presence of a large lower abdominal mass. Further detailed examination of the perineum revealed a bluish bulging imperforate hymen. The diagnosis was made clinically, and a hymenotomy and drainage of 500 ml of blood clot were performed. She could pass urine after the removal of the Foley catheter on postoperative Day 1 and was discharged on Day 2 with no more tenesmus or urinary symptoms. During follow-up, she had had normal menses since the operation.

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Case 3

In September 2006, a 13-year-old premenarchal girl was admitted with a ten-month history of on-and-off lower abdominal pain. She had attended the accident and emergency department on several occasions for the same symptom. On physical examination, the abdomen was soft with no palpable mass. Perrectal examination revealed a large pelvic mass, but due to labial adhesion, the hymen was not seen. Ultrasonography showed a big heterogeneous collection, measuring 11 cm × 6.6 cm × 7.8 cm, in the vagina. Differential diagnoses included a simple imperforate hymen with haematocolpos or transverse vaginal septum. Examination under anaesthesia revealed an imperforate hymen above the labial adhesion. A mini-hymenotomy was performed and 500 ml of old menstrual blood was drained. She was then discharged on postoperative Day 3. At the six-month follow-up, she was found to have no menses after surgery and examination revealed a completely intact hymen with no opening. She then underwent a re-do hymenotomy and had regular menses afterwards.

DISCUSSION

Imperforate hymen is an anomaly, which when presenting during the adolescent period, can usually be diagnosed by thorough history taking and a physical examination. Adolescents typically present with primary amenorrhoea, a cyclic pattern of lower abdominal/pelvic pain, with or without associated symptoms like back pain (38%–40%), urine retention (37%–60%) or constipation (27%).⁽²⁻⁴⁾ On physical examination, a lower abdominal mass may be palpable, or a pelvic mass may be detected on bimanual rectal examination. The diagnosis of imperforate hymen can often be established readily during the perineal examination when a bluish bulging imperforate hymen is found at the introitus. However, the condition can be easily missed if a careful history taking and detailed examination are not carried out, as illustrated by our cases. This highlights the importance of pursuing the basic principles in medicine, viz. thorough history taking and physical examination. In girls presenting with abdominal pain, a careful examination of the introitus, apart from perrectal examination, is mandatory. Imaging or laboratory studies are usually not indicated for a classical presentation of imperforate hymen. However, if the diagnosis is uncertain, as illustrated in the third case,

imaging studies would be needed for better surgical planning.

The treatment for imperforate hymen is hymenotomy. Before the procedure, the urethra has to be stented to avoid possible damage during the procedure. Two techniques of hymenotomy are commonly advocated: a simple incision or a small excision of the membrane. In Case 3, a simple cruciate incision of the hymen, without the excision of any part of the membrane, was made in the first operation in an attempt to preserve the traditional Chinese concept of the importance of first-coitus bleed. Acar et al advocated the use of “mini-hymenotomy” (0.5-cm incision) together with keeping a Foley catheter *in situ* for two weeks.⁽⁵⁾ However, it is not the universally-accepted method due to the high recurrence rate. It is generally advocated that at least part of the membrane be excised. In addition, the incidence of recurrence might further be reduced by plicating the edge of the incised membrane.

Though the outcome after adequate hymenotomy for imperforate hymen is usually excellent, follow-up is still necessary to ensure that there is no recurrence of the problem. With adequate surgery, symptoms of dyspareunia, abnormal menstruation or persistent problems of micturition/defaecation seldom recur.⁽⁴⁾ In conclusion, imperforate hymen is not an uncommon cause of abdominal pain and abnormal menstruation in adolescent girls. Without a careful history taking and physical examination, the diagnosis can be missed easily, resulting in a delay in diagnosis and treatment. An adequately-performed hymenotomy usually leads to an excellent outcome.

REFERENCES

1. Heger AH, Ticson L, Guerra L, et al. Appearance of the genitalia in girls selected for nonabuse: review of hymenal morphology and nonspecific findings. *J Pediatr Adolesc Gynecol* 2002; 15:27-35.
2. Nazir Z, Rizvi RM, Qureshi RN, Khan ZS, Khan Z. Congenital vaginal obstructions: varied presentation and outcome. *Pediatr Surg Int* 2006; 22:749-53.
3. Wang W, Chen MH, Yang W, Hwang DL. Imperforate hymen presenting with chronic constipation and lumbago: report of one case. *Acta Paediatr Taiwan* 2004; 45:340-2.
4. Liang CC, Chang SD, Soong YK. Long-term follow-up of women who underwent surgical correction for imperforate hymen. *Arch Gynecol Obstet* 2003; 269:5-8.
5. Acar A, Baki O, Karatayli R, Capar M, Colakoglu MC. The treatment of 65 women with imperforate hymen by a central incision and application of Foley catheter. *BJOG* 2007; 114:1376-9.