Available online at www.sciencedirect.com
ScienceDirect
Taiwanese Journal of Obstetrics & Gynecology 50 (2011) 118–120
www.tjog-online.com

Research Letter

Imperforate hymen causing hematocolpos and acute urinary retention in an adolescent girl

Cihangir Mutlu Ercan*, Kazim Emre Karasahin, Ibrahim Alanbay, Mustafa Ulubay, Iskender Baser

Department of Obstetrics and Gynecology, Gulhane Military Medical Academy, Ankara, Turkey

Accepted 7 September 2009

Pelvic and abdominal pain is especially common in adolescent age group. Differential diagnosis could be gastrointestinal, renal, gynecological, and psychosomatic causes. The inability to pass urine, which is termed as acute urinary retention (AUR), is an uncommon cause of pelvic pain. The etiology of AUR is age dependent; and in childhood, severe voiding dysfunction may be drug induced with antihistamines or anticholinergic drugs, psychogenic, related to viral infections, congenital anomalies, neurological bladders, or mechanical compression of the urethra via the mass of pelvis [1,2].

Hematocolpos is defined as the accumulation of menstrual blood in the vagina instead of its expulsion, which is usually because of an imperforate hymen. The incidence of imperforate hymen as a congenital obstructive abnormality of the female genital tract is 1:2,000 [3].

We report a case of an adolescent girl who complained of pelvic pain resulting from AUR because of an imperforate hymen, which also mimicked pelvic mass at the differential diagnosis.

A 15-year-old girl referred to our tertiary center obstetrics and gynecology department from emergency service with the symptoms of acute severe lower abdominal pain and inability to pass urine. The tentative diagnosis in emergency service was a semisolid pelvic mass measuring about $12 \times 7 \times 9$ cm diagnosed by transabdominal ultrasonography. Gynecological examination was not performed at the emergency service; instead, the patient was referred to the obstetrics and gynecology department of our hospital.

At the admission of the patient, she seemed very uncomfortable and was cramping with an intermittent pelvic pain. Her temperature was 37°C, pulse rate was 90/min, respiration rate was 18/min, and the blood pressure was 110/78 mmHg. Her personal and family history revealed nothing unusual except the cyclic pelvic pain continuing for more than 1-year period. Although the secondary sexual characteristics seemed to be normally developed, she had not experienced menarche yet. Her breast development and axillary and pubic hairs were at Tanner stage 3. We learned from her anamnesis that she did not have any sexual intercourse.

On her physical examination, we palpated a tender mass in the pelvic region, which extended to the umbilicus level. On auscultation, active bowel movements were heard. On gynecological examination, a pale blue bulging imperforate hymen completely occluding the vagina were seen (Fig. 1). The urethral orifice appeared normal.

Pelvic ultrasonography confirmed a significant echogenic fluid accumulation in the vagina measuring about $12 \times 7 \times 9$ cm in size, which may also mimic a pelvic tumor. The uterus was normal sized with a 4.5 mm in an endometrial echo, and a glob vesicle was diagnosed without any findings of hydronephrosis. (Fig. 2) The reason for misdiagnose in the emergency service was the fluid accumulation in the vagina, which seemed in high echogenity and can naturally be confused with a pelvic mass.

Urethral catheterization was first administered for the relief of symptoms. A total of 1,000 mL of clear urine was drained. Urinalysis was normal. After the information of the patient and her family for the hymenotomy procedure, a consent was signed. A vertical hymenotomy was performed under local anesthesia. We preferred the vertical incision method for preserving the virgin appearance of hymen and also continuation of virginity. Than marsupialization of the hymenal edges with 4-0 rapid Vicryl sutures were performed for the drainage. Approximately 1,000 mL chocolate-colored menstrual blood was drained from the vagina following the hymenotomy. The symptoms resolved after the procedure and no urinary catheterization was needed at all. She was discharged later on the same day. One week later in her control examination, the hymen had got well with a centrally located 10×5 mm-sized opening. The hymenal orifice was annular shaped (Fig. 3) and transabdominal sonography revealed a normal pelvic anatomy with a normal-sized vagina.

* Corresponding author. Department of Obstetrics and Gynecology, Gulhane Military Medical Academy, Etlik 06018, Ankara, Turkey.
E-mail address: ercanmutlu@yahoo.com (C.M. Ercan).

doi:10.1016/j.tjog.2011.01.005

Imperforate hymen is the most common obstructive anomaly of the female genital tract with an incidence of between 1:1,000 and 1:200,000 in newborn females [4,5]. The diagnosis is sometimes made soon after birth, but more commonly it is made in adolescence [4].

Hymen is an embryologic remnant of the mesodermal tissue. In the embryological period, the lateral portion of the hymen originates from a fold of urogenital sinus at the union of Müller's duct, whereas in its posterior part, it originates from the cells of the urogenital sinus externally and from Müller's duct internally. Usually in the eighth week of gestation, it partially ruptures in the inferior part of Müller's duct, remaining as a fold of mucous membrane around the entrance of the vagina. Failure of these events results in persistence of the septum, which can be diagnosed as imperforate hymen clinically. As it will cause vaginal outflow obstruction, there may be significant accumulation of cervical and vaginal secretions [2]. Imperforate hymen is not usually associated with any other Mullerian abnormalities. Thus, extensive investigation for urogenital anomalies is not often needed for girls with imperforate hymen.

As a complication, hematocolpos is very rare and hematosalpinx is a curiosity [6]. Frequency of imperforate hymen with hematocolpos is reported as 0.14% [7]. Imperforate hymen with hematocolpos occasionally present with cyclic and poorly localized pelvic pain. Also, it is very common to see symptoms related to the obstruction of urinary tract. The accumulation of menstrual blood in the vagina and uterus can also mimic a pelvic mass by ultrasonography similar to our case. The main point here will be the information obtained from the patient. The mechanical effect on the urethra and bladder can lead to the obstructive uropathy symptoms as reported in our case [8]. However, AUR is a relatively rare entity in children. The most common cause of AUR in children (up to 14 years old) is lower urinary tract stones, and the incidence of imperforate hymen was found to be 3.5% in the same study [9].

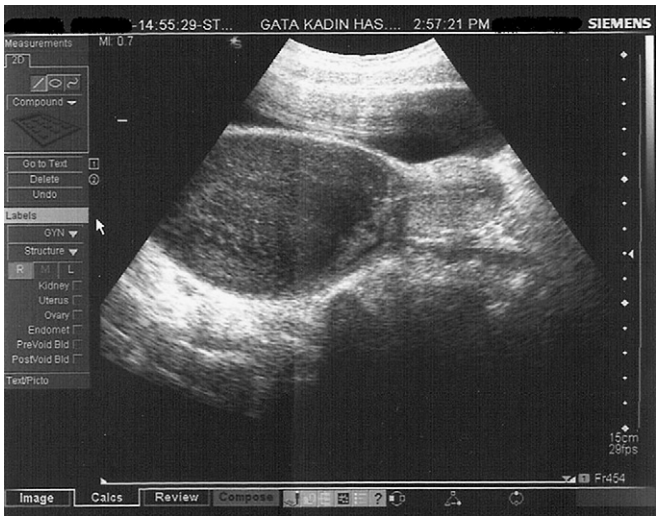

Fig. 2. Sagittal view of echogenic fluid accumulation in the vagina measuring about $12 \times 7 \times 9$ cm in size, with a normal sized uterus of 4.5 mm in endometrial echo and glob vesicle by transabdominal ultrasonography.

AUR may be the first sign of complications from the imperforate hymen, and urinary hesitancy or dysuria may be the presenting complaint in 58% of patients presenting with hematocolpos [8]. It is thought that menstrual blood in the vagina and uterus may form a mechanical blockage of the urethra and bladder leading to obstructive urinary symptoms.

Hematocolpos, because of imperforate hymen, although simple to treat, may have devastating sequelae in the form of endometriosis if not managed in time [10]. Treatment of hematocolpos because of imperforate hymen is by making a cruciate incision or simple incision in the hymen. Although all the reported imperforate hymen cases in literature were performed under general anesthesia, we suggest infiltrative anesthesia in such emergency cases as we had done. But while doing these procedures, great care should be taken for asepsis.

In conclusion, hematocolpos should be kept in mind, as imperforate hymen could be an uncommon cause of AUR. It is

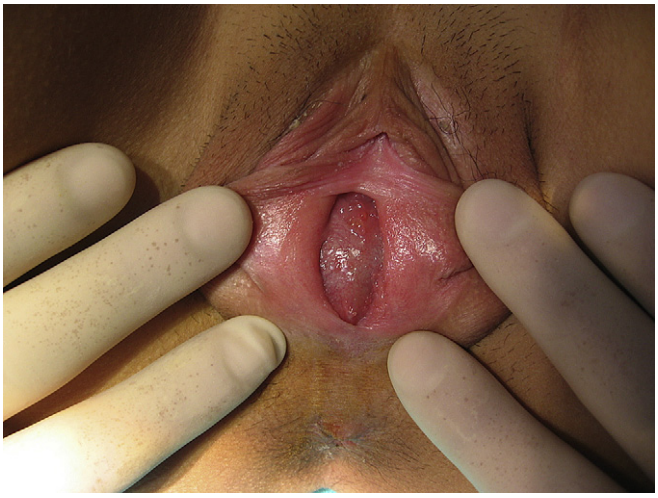

Fig. 1. The pale blue bulging imperforate hymen, which completely occludes the vagina.

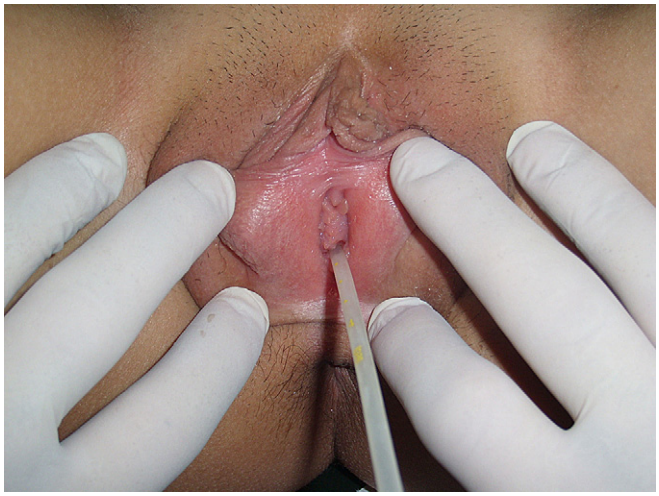

Fig. 3. Healing of the hymenal vertical incision 1 week later without any complication and a 4-number carman cannula shows the hymenal opening. There was no sign of defloration.

easy to diagnose when the examiner is familiar with its typical presentation, and physical findings should be supported with the anamnesis. Surgery is the gold standard treatment and could be performed immediately under local anesthesia to alleviate pain and before complications arise.

References

[1] Gatti JM, Perez-Brayfield M, Kirsch AJ, Smith EA, Massad HC, Broecker BH. Acute urinary retention in children. J Urol 2001;165:918–21.
[2] Peter JR, Steinhardt GF. Acute urinary retention in children. Pediatr Emerg Care 1993;9:205–7.
[3] Lausten-Thomsen MJ, Mogensen H. Hymen imperforatus with atypical symptom presentation. Ugeskr Laeger 2007;169:523–4.
[4] Buick RG, Chowdhary SK. Backache: a rare diagnosis and unusual complication. Pediatr Surg Int 1999;15:586–7.
[5] Brevetti LS, Kimura K, Brevetti GR, Lawrence JP, Soper RT. Pyocolpos: diagnosis and treatment. J Pediatr Surg 1997;32:110–1.
[6] Bejanga BI. Hematocolpos with imperforate hymen. Int Surg 1979;63: 97–9.
[7] Doyle JC. Imperforate hymen with and without hematocolpos. Cal West Med 1974;56:242–7.
[8] Chircop R. A case of retention of urine and haematocolpometra. Eur J Emerg Med 2003;10:244–5.
[9] Asgari SA, Mansour Ghanaie M, Simforoosh N, Kajbafzadeh A, Zare A. Acute urinary retention in children. Urol J 2005;2:23–7.
[10] Rock JA, Zacur HA, Dlugi AM, Rock JA, Zacur HA, Dlugi AM, et al. Pregnancy success following surgical correction of imperforate hymen and complete transverse vaginal septum. Obstet Gynecol 1982; 59:448.