Imperforate Hymen Presenting as Chronic Low Back Pain

abstract

Imperforate hymen in an adolescent usually presents with cyclic abdominal pain or with pelvic mass associated with primary amenorrhea. We present a 13-year-old girl with chronic lower back pain of 6 months’ duration as the only complaint. On physical examination, multiple trigger points were detected in the quadratus lumborum and gluteus medius muscles bilaterally. Abdominal ultrasound revealed hematometocolpos secondary to an imperforate hymen. Hymenectomy was performed, with complete resolution of the back pain. Myofascial pain syndrome with a viscerosomatic reflex is a possible explanation for the clinical presentation of our patient. Pediatrics 2013;132:e768–e770

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KEY WORDS

imperforated hymen, low back pain

ABBREVIATION

IH—imperforated hymen

Dr Domany was a medical student at the time of the study and is the junior author; Dr Gilad was the resident in charge of the patient’s treatment; Dr Shwarz is a radiology consultant; Dr Vulfsons is a pain consultant; Dr Garty is head of the department and the senior author.

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Imperforate hymen (IH) is the most common obstructive disorder of the female reproductive system, with a reported incidence of 0.014% to 0.024% in children, and 1 in 2000 gynecologic patients. A familial predisposition has been reported. Known, but rare, complications are endometriosis and vaginal adenosis.

According to the pediatric textbooks, in infants, IH is an incidental finding during genital examination. In adolescents, it may be detected during evaluations for primary amenorrhea. Common clinical manifestations are a bulging blue-black membrane in the vulva, cyclic abdominal pain and/or a pelvic mass, and primary amenorrhea with normal secondary sex characteristics.

The aim of the present report was to describe an adolescent girl with IH who presented with long-term low back pain.

**CASE REPORT**

A 13-year-old girl presented to the emergency department complaining of back pain of 6 months’ duration, which had exacerbated in the preceding 2 weeks. The pain was in the lower back, bilateral, and radiated to both upper posterior thighs. It appeared daily at midday and gradually increased until bedtime. It usually did not prevent the patient from falling asleep, nor did it awaken her. She did not engage in any particular physical activity before or after the pain started. The pain was relieved by hot baths and after defecation, but there was no constipation. The patient had tried several pain medications, including nonsteroidal antiinflammatory drugs, but with no significant relief. She denied recent trauma, fever, joint pain, rash, or neurologic symptoms.

The patient had lost 6 kg body weight since onset of the back pain, apparently because of decreased appetite. Her body image was preserved and normal. She had not undergone menarche. Findings on anterior/posterior/lateral radiographs of the back and bone isotope scan performed 6 weeks earlier were normal.

The patient was admitted to the pediatric department for investigation. She was afebrile and experienced severe back pain with only minimal response to 8 mg of oxycodone hydrochloride. Laboratory tests showed mild leukocytosis of 14 000/mm³ with 81% neutrophils. Blood chemistry, C-reactive protein, and erythrocyte sedimentation rate tests revealed no abnormalities. No tenderness or palpable mass was noted during the abdominal examination. Back examination showed mild scoliosis without vertebral tenderness. Lateral bending of the back was preserved on both sides, and there was full range of motion of flexion and extension. Marked tenderness of the quadratus lumborum and gluteus medius muscles was noted bilaterally with multiple trigger points, one of which elicited the “that’s it” sign (ie, a verbal indication that the patient recognizes the point as a possible location of the pain). There was also mild sensitivity overlying the sacroiliac joint bilaterally. Lasegue test was negative. Faber test (ie, pain during flexion, abduction, and external rotation of the thigh) was positive, with mild bilateral weakness on hip flexion. Both these findings suggested iliopsoas involvement.

The patient was referred for ultrasound of the pelvic area to rule out a space-occupying lesion. The scan demonstrated a partially filled urinary bladder, propelled anteriorly by a well-defined spherical mass with a thin wall. The mass content was hypoechoic, containing particles suggestive of either gelatinous material or clotted blood. There were no visible blood vessels in the mass (Fig 1). The ovaries were of normal diameter and structure. The mass was diagnosed as hydrometrocolpos.

Gynecologic examination revealed a protuberant imperforate hymen. Hymeneal incision was performed, and a liter of old blood was immediately released. After the procedure, the patient experienced immediate relief of pain. Complete disappearance of symptoms was reported during follow-up of 3 months.

**DISCUSSION**

In the pediatric textbooks and reviews on pediatric back pain, IH is not mentioned as a differential diagnosis of chronic low back pain. According to the gynecologic literature, IH may present with abdominal pain, back pain, or difficulty with defecation or urinary retention, secondary to a mass effect from vaginal distention. There are only a few reports wherein back pain was a presenting symptom of IH, and most reported concomitantly other symptoms, such as abdominal pain, pelvic pain, constipation, or urinary retention. In only 1 case report was cyclic back pain the sole symptom. Most of the authors suggested that the pain was a result of direct pressure on the sacral plexus by the distended vagina. However, given the distribution of the pain in the lower back rather than the pelvic area, we...
suggest that vaginal pressure may be a contributing factor but not the main cause. On the basis of the findings on physical examination in our patient, which implicated muscle involvement, we propose that the underlying mechanism is myofascial pain syndrome via the viscerosomatic reflex, secondary to visceral pathology, which is a specific form of referred pain.

Myofascial pain syndrome is characterized by the presence of myofascial trigger points, which are defined as hyperirritable nodules located within taut bands of skeletal muscle, usually with uneven work distribution. The syndrome is uncommon in children owing to the higher velocity of muscle healing at younger ages. In addition, most children are not exposed to disproportionate workloads or unusual positioning of groups of muscles. There are, however, a number of precipitating factors that could enhance a child’s susceptibility to the evolution of trigger points, namely, trauma, neurologic disease, anxiety disorder, and visceral pathology causing a viscerosomatic reflex.11

In visceral disorders, afferent fibers from the organ send signals to the spinal cord. This induces central sensitization with secondary hypersensitivity and expansion in the number and size of receptive fields.12 Visceral disease can be manifested by referred pain (eg, renal stone, appendicitis, myocardial infarction, cystitis), and referred pain can be an important clinical and diagnostic feature.

In our patient, the involved organs were the uterus and vagina. The uterus is innervated by the hypogastric nerve originating from L1 through L3, and the vagina is innervated by the pelvic splanchnic nerve originating from S2 through S4.13,14 The muscles affected, according to the physical examination, were the quadratus lumborum, innervated by T12 through L4, the iliopsoas, innervated by L1 through L4, and the gluteus medius, innervated by L4 through S1.14 Although the pathologic mechanism of the former 2 muscle groups is easily explained by our theory, the involvement of the gluteus medius may be related to reported findings in animal models of afferent fibers from the vagina that enter the lumbosacral spinal cord (thereby involving L5 through S1) by way of the ventral roots,15 or to direct pressure on the sacral plexus by the hydrometrocolpos.

In summary, although uncommon, IH should be suspected in adolescent girls with back pain, especially in the presence of primary amenorrhea. Additionally, pediatric patients presenting with myofascial pain should be evaluated for visceral pathology at the same level of segmental innervation.

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