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UNIQUE PRESENTATION OF HEMATOMETROCOLPOS MIMICKING CAUDA EQUINA SYNDROME: SEVERE BACK PAIN AND URINARY INCONTINENCE IN AN ADOLESCENT GIRL

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☐ **Abstract—Background: Imperforate hymen with hematometrocolpos in adolescent females is a rare pediatric condition. Classical presentation includes abdominal pain or a pelvic mass in female patients with primary amenorrhea. Atypical complaints and reluctance among emergency physicians to perform genital examination in the emergency department or the pediatric emergency department (PED) may delay correct diagnosis. Case Report: We report a unique, cauda equina syndrome-like presentation of hematometrocolpos secondary to imperforate hymen in a 13-year old, previously healthy girl with primary amenorrhea. In the PED, the unusual clinical presentation of severe back pain and urinary incontinence initially mimicked cauda equina syndrome and led to delayed correct diagnosis. Why Should an Emergency Physician be Aware of This?: The novelty of this case is a cauda equina-like presentation of imperforate hymen secondary to hematocolpos. This report illustrates the highly variable clinical presentation of this rare gynecological pediatric entity. It underlines the importance of considering this rare condition in the differential diagnosis of severe upper or lower back pain alongside voiding abnormalities including urinary retention and incontinence in adolescent females with primary amenorrhea. Above all, the importance of performing a thorough history and genital examination in this subgroup early in the investigation process in the PED emerges from this case. Essentially, excellent clinical judgment and genital examination by the emergency physician may minimize unnecessary radiological investigations and ultimately, accelerate correct diagnosis and expedite appropriate surgical treatment. However, not only pediatric and adult emergency physicians, but also pediatricians and general practitioners should be aware of this entity and its diverse clinical presentation.** © **2016 Elsevier Inc. All rights reserved.**

☐ **Keywords—cauda equina syndrome; genital examination; hematometrocolpos; pediatric emergency department**

INTRODUCTION

Hematometrocolpos, secondary to imperforate hymen and retrograde menstruation in adolescent premenarchal females, is a rare pediatric condition (1,2). The reported incidence of imperforate hymen in the literature ranges from 1.2 in 100 to around 1 in 2000 females (3,4). Typically, hematometrocolpos secondary to imperforate hymen is diagnosed at the point in time of menarche in females, at the age of 13–17 years (4). Classic presentation of this entity includes recurrent lower abdominal pain in female patients with primary amenorrhea (1,4,5). Furthermore, constipation, lower back pain, and sciatic pain secondary to irritation of the sacral plexus or nerve roots, as well as urinary retention as a consequence of compressive effects from the accumulation of menstrual blood in the distended

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vagina, have been described as more infrequent signs and symptoms (1,2,5–14). Characteristic clinical findings include a palpable pelvic mass and an imperforate, bulging hymen protruding from the introitus, often appearing bluish from the blood behind, on vaginal inspection. Abdominal point-of-care sonography plays an important diagnostic role, revealing the typical features of a large pelvic cystic mass containing echogenic fluid, delineating the distended blood-filled vagina and uterus (10). Furthermore, bilateral hydronephrosis has been described as a rare late sequela from the compressive effects of accumulated menstrual blood in the uterus (15). In contrast to these well-documented features associated with hematometrocolpos secondary to imperforate hymen, only few articles describe a cauda equina-like presentation of this rare condition, including backache, radiculate pain, and stool or urinary incontinence. Whereas urinary retention has been well documented, with hematometrocolpos secondary to imperforate hymen, only few authors have described involuntary micturition as a presenting symptom of this condition (6,8,11–14). Against the background of the widely diverse presentation of imperforate hymen, which may not be detected until the onset of menses and the subsequent development of hematocolpos, clinical signs and symptoms may misguide pediatric and adult emergency physicians in confirming the correct diagnosis. Atypical complaints such as urinary incontinence, as opposed to more frequent features such as cyclic lower abdominal pain, back pain, and urinary retention in the context of primary amenorrhea, alongside a certain reluctance to perform a urogenital examination in the (pediatric) emergency department, may delay correct diagnosis.

CASE REPORT

A 13-year-old, previously healthy girl with primary amenorrhea presented to our Pediatric Emergency Department (PED) with a 3-week history of progressively increasing severe back pain and intermittent involuntary micturition. There was no associated fever, weight loss, or vaginal discharge. The patient denied any trauma to her back, excessive physical exercise, or change in frequency or quantity of bowel motions. She denied being sexually active.

The patient was afebrile, with normal heart and respiratory rate, oxygen saturation, and blood pressure. Physical examination revealed severe thoracic and lumbar spine midline tenderness (T8–L5) with no associated erythema or swelling in a 39-kg (10–25th percentile) female, Tanner scale BIII, PIII. Abdominal examination showed a soft, slightly distended, nontender abdomen with a palpable suprapubic mass. There were no signs of peritonitis. Hip flexion in supine and hip extension in prone position were very painful. However, she had normal gait and muscle power as well as bilaterally preserved Achilles tendon reflexes. She did not report any loss of sensation in the perianal, perineal, or outer genitalia region, nor loss of rectal tone. However, this was not clinically confirmed by genital examination. Even though bladder function was impaired in our patient, she had no associated bowel dysfunction or postvoid residual incontinence on bladder scanning. Laboratory testing was within normal limits, including a full blood count, erythrocyte sedimentation rate, C-reactive protein, electrolytes, urea, creatinine, lactate, venous blood gas analysis, blood sugar level, and liver function tests. We did not perform a pregnancy test. Conventional thoracic and lumbar spine x-ray imaging did not show any fractures or signs of osteomyelitis but a radiopaque pelvic mass (Figure 1). Urinalysis was positive for red blood cells, negative for leucocytes or casts. Subsequent

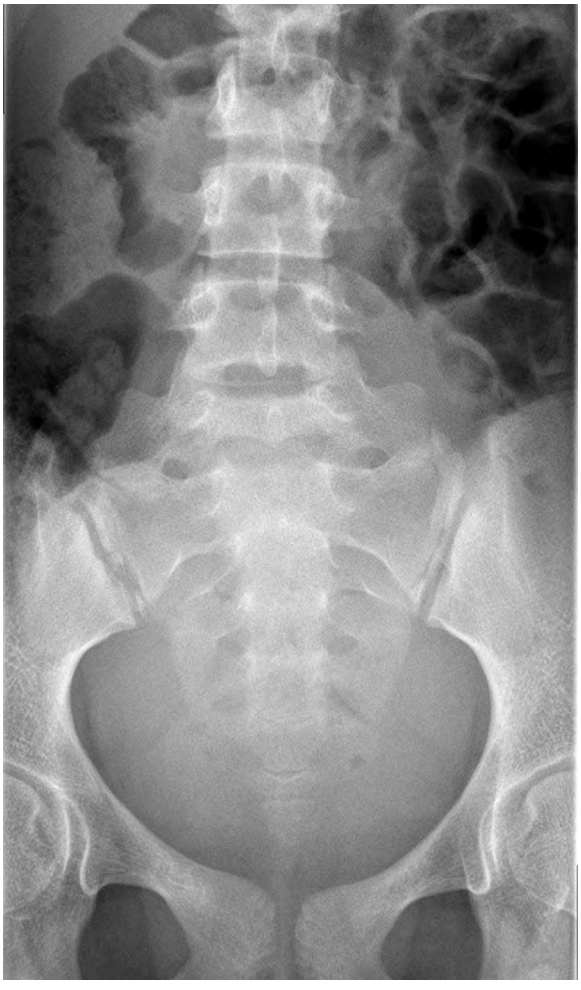

Figure 1. Conventional lumbar spine x-ray study showing a radiopaque mass in the pelvis and lower abdomen.