

ACUTE URINARY RETENTION SECONDARY TO HEMATOCOLPOMETRA: RADIOLOGICAL EVALUATION

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ABSTRACT:

Hematocolpometra is one of the important cause in which there is accumulation of menstrual blood in endometrial cavity and vagina due to imperforate hymen in adolescent girls. Because urinary retention is rare in female patients, there is need for a thorough examination including ultrasound, CT or MRI to determine its exact cause and nature of fluid content. We herein present an interesting case of hematocolpometra presenting as acute urinary retention diagnosed radiologically.

KEYWORDS:

Hematocolpometra, Imperforate hymen, Acute urinary retention, Radiological evaluation.

1. INTRODUCTION:

Hematocolpometra secondary to an imperforate hymen and retrograde menstruation is a rare entity which can lead to acute urinary retention in adolescent girls. Acute urinary retention is rarely seen in females because of their short urethra and peculiar anatomic relationships [1]. If it occurs the usual cause is due to a large pelvic or perineal mass. Hematocolpometra is one of the important cause in which there is accumulation of menstrual blood in endometrial cavity and vagina due to imperforate hymen. Vaginal distention results in stretching of the urethra, which is an integral part of the anterior vaginal wall and finally resulting in acute retention of urine. Hereby, we are presenting an interesting case of hematocolpometra presenting as a large abdomino-pelvic mass causing acute urinary retention, which was diagnosed on radiological evaluation.

2. CASE PRESENTATION:

We present the case of a 15 year old girl presented for ultrasonography in department of radiology with acute urinary retention. She had complaints of difficulty in micturition the last one month which was associated with pain in the lower abdomen. The pain was not associated with fever or dysuria. The patient had cyclical abdominal pain for the last 1 year but she never had menstruation. Physical examination revealed firm tender large suprapubic swelling that was occupying almost whole of the abdomen and was reaching upto the epigastric region. Plain radiograph showed soft tissue mass in the central abdomen and pelvis (Figure 1).

Ultrasonography of the abdomen and pelvis (Figure 2) revealed gross distension of the endometrial cavity and vagina with echogenic fluid collection that was reaching upto the epigastrium and was displacing the liver superiorly and bowel loops laterally. There was associated bilateral hydronephrosis. Computed tomographic (CT) scan of the abdomen and pelvis (Figure 3) showed a grossly distended endometrial cavity and vagina with fluid collection within along with gross thinning of the myometrium. It was compressing and displacing the urinary bladder antero-laterally along with compression of the bilateral ureters resulting in hydronephrosis. Bilateral adnexae and the rest of the abdominal viscera were normal. T1-weighted magnetic resonance imaging (MRI) image revealed similar findings as of CT along with hyperintense signal intensity within the endometrial cavity and vagina, suggestive of subacute blood (Figure 4a and 4b). The findings were suggestive of hematocolpometra.

Clinical examination of the perineum confirmed the diagnosis of imperforate hymen, which was bulging and coming out of the introitus. The patient was catheterized with foley's catheter to relieve the acute urinary retention. Urine examination was normal. Hymenotomy was performed and approximately 4 litres of altered blood was drained. The patient's postsurgical course was uneventful and the symptoms were relieved. On subsequent follow-up she was symptom free with normal menstrual cycle and normal ultrasonography of the abdomen and pelvis.

3. DISCUSSION:

Acute urinary retention due to imperforate hymen leading to hematocolpometra is a rare but known etiology [2]. The hymen starts developing by the 3rd month of intrauterine life and appears as a small opening during perinatal life, separating the vagina from the urogenital sinus; failure to do so results in an imperforate hymen [3]. Imperforate hymen is usually a congenital anomaly, but has been reported as a result of sexual abuse [6]. The incidence of imperforate hymen is estimated to be 0.1% [7]. Although imperforate hymen usually occurs sporadically, some familial occurrences have been reported. The mode of transmission is thought to be autosomal recessive or autosomal dominant [8]. An imperforate hymen is almost always an isolated finding, but it may also occur with McKusick-Kaufman syndrome or Bardet-Biedl syndrome [9]. Other possible associated anomalies include polydactyly, congenital anorectal abnormalities and multicystic dysplastic kidneys. In addition, urinary tract abnormalities have been reported.

In most of the cases, symptoms are seen at puberty [2]. The clinical symptoms are mainly due to collection of menstrual blood into the vagina (hematocolpos) and uterus (hematometra). The spectrum of severity ranges from isolated imperforate hymen to complete vaginal atresia with skeletal and urinary abnormalities [12]. That's why evaluation of the kidneys and ureters on ultrasonography are necessary in suspected cases of imperforate hymen. In untreated cases, distension of the vagina will lead to stretching and obstruction of the urethra because of its very close anatomic relationship with the anterior vaginal wall, as was seen in our case. The clinical symptoms of teenagers include cyclic lower abdominal pain, primary amenorrhea, chronic constipation, low back pain, dysuria and acute urinary retention [10,11]. Acute urinary retention may result from inadequate bladder contraction due to inflammation, be drug-induced, or as a result of dyssynergia between detrusor contraction and sphincter relaxation in a neurologic bladder. Extrinsic compression of the urethra by an ovarian tumor, vaginal mass or rhabdomyosarcoma of the urinary bladder may also cause acute urinary retention in young females.

Ultrasonography of the lower abdomen reveals the characteristic appearance of a large cystic mass containing echogenic fluid, corresponding to the distended blood-filled vagina and uterus, and therefore plays a crucial role in the diagnosis of hematocolpometra. Computed tomographic (CT) scan shows fluid filled distended endometrial cavity and vagina along with compression of the urinary bladder and ureters resulting in hydroureteronephrosis. MRI can be helpful in characterization of the fluid; hyperintense fluid signifies subacute blood in our case. Cruciate incision of the imperforate hymen under aseptic conditions is done to ensure drainage of the vagina and uterus [5].

4. CONCLUSION:

Hematocolpometra secondary to an imperforate hymen and retrograde menstruation is a rare entity that should be considered in the differential diagnosis of lower abdominal pain or back pain in adolescent girls who complain of urinary symptoms with no previous menstruation. Because urinary retention is rare in female patients, there is need for a thorough clinical and radiological evaluation to determine its exact cause.

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FIGURE LEGENDS:

Figure 1: Plain radiograph showing soft tissue mass in the central abdomen and pelvis.



Figure 2: Sonographic image (longitudinal view) showing grossly distended fluid filled endometrial cavity and vagina.

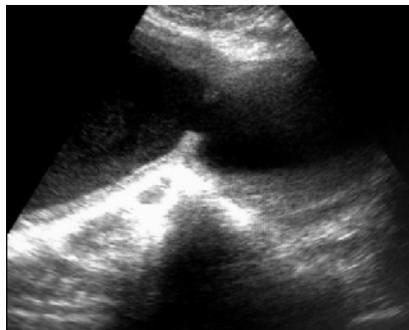
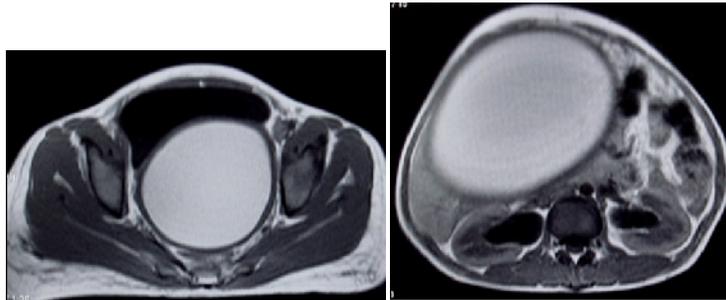


Figure 3: Sagittal reconstructed CT image showing grossly distended fluid filled endometrial cavity and vagina with anteriorly compressed and displaced urinary bladder.



Figure 4a and 4b: T1-weighted MRI image showing high signal intensity fluid within the distended endometrial cavity and vagina, suggesting subacute blood (Figure 4a) and bilateral mild hydronephrosis (Figure 4b).



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