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Case Report

Genital tuberculosis masquerading as hematometra in an adolescent girl with an acute abdomen: A case report

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Abstract

Childhood and adolescent TB is a silent epidemic. The occurrence of genital tuberculosis (TB) in adolescent girls is rare. This condition is easily misdiagnosed owing to its non-specific clinical presentation that mimics different gynecological or non-gynecological pathologies. We present an unusual case of genital TB in an 11-year-old girl with an acute abdomen, where the clinical and radiological findings contributed to the diagnostic confusion with hematometra. This case highlights a rare case of genital TB in a teenage girl, and its clinical and diagnostic complexities, emphasizing the importance of considering TB as a differential in all cases of pelvic masses in high-burden settings. This case also exemplifies the need for a multidisciplinary approach to facilitate timely diagnosis and treatment to prevent the devastating effects of genital TB on the reproductive health of young girls.

Keywords: Adolescent; Genital TB; Heamatometra.

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Introduction

Despite being a treatable and curable disease, tuberculosis (TB) is a global health problem affecting people of all ages[1,2]. TB can impact adolescence, which is a crucial time for one's physical, social, and psychosexual development. Recent global estimates have reported an incident rate of 1.8 million cases of TB among adolescents and young adults aged 10-24 years in 2012 [3]. TB in childhood and adolescent populations is considered a reflection of active disease in related adults[3].

While pulmonary TB and lymph node TB are the most common presentation in pediatric cases (under fifteen years of age),genitourinary infection constitutes approximately 3%of all cases[4,5]. The clinical manifestations of genital TB in adolescent girls are usually non-specific and often mimic other diseases' disease can adversely impact the reproductive health of adolescent and young populations including the increased risk of infertility, ectopic pregnancy, chronic pelvic pain, and obstetric complications during pregnancy[6].

We present a case of an 11-year-old girl with an acute abdomen thought to have hematometra who was eventually diagnosed with genital TB, emphasizing the importance of including TB as a differential diagnosis in countries with a high TB prevalence.

Case report

An 11-year-old girl presented to the emergency department with complaints of pain in her abdomen for ten days. The pain was gradual in onset, continuously present, dull aching in character, moderate to severe intensity, present all over the abdomen, and non-radiating with no aggravating or relieving factors. There were no associated fever, nausea, vomiting, bladder, or bowel-related symptoms. No prior history of persistent cough, nocturnal sweats, reduced appetite, or weight loss was present. She had not attained her menarche yet and was not sexually active. She had no notable family history or prior medical or surgical history. There was no history of smoking, substance abuse, or any treatment for malnutrition.

On physical examination, she had a low body mass index (BMI) of 15.1 kg/m2 (normal range 18.5-24.9 kg/m2). Her vital signs including pulse rate, blood pressure, respiratory rate, and temperature were normal. There was no pallor or generalized lymphadenopathy. Her thyroid, breast, and systemic examinations were normal. The secondary sexual characters were not developed. On abdominal examination, a large abdominopelvic mass corresponding to a 20-week size gravid uterus was felt, which was firm in consistency, tender with restricted mobility, and had no guarding or rigidity. On genital examination, the external genitalia were normal. No bulge was visible at the vaginal orifice. The same mass was felt on rectal examination.

Her laboratory investigations revealed a hemoglobin level of 9.2 g/dl (normal ranges being 12-16 g/dl) and a total leukocyte count of 12,000/mm^3(normal ranges being 4500-11,000/mm^3). Her renal function and liver function tests were normal, and screening for the Human Immunodeficiency Virus was negative. The chest X-ray showed no abnormalities. Transabdominal ultrasound showed a large, vertically bilobed complex cystic pelvic lesion measuring 9.8cm x6.3cmx3.8 cm with medium-level internal echoes in the expected location of the uterus suggesting the possibility of hematometra. The uterus was not seen separately. Both ovaries were normal. No significant intraabdominal lymphadenopathy was noted.

The magnetic resonance imaging (MRI) of the pelvis revealed a bicornuateunicollis uterus with collapsed vagina and a large complex cystic lesion (9.9cmx7.9cmx8.2 cm) closely related to the uterus and ovaries with complex fluid contents. Both ovaries were normal. Differentials included a non-communicating cavitating uterine duplication with hematometra or a large pelvic hematoma of uncertain origin (Figure 1).

With these findings, a probable diagnosis of hematometra with an obstructive uterovaginal anomaly was made, and the patient was planned for examination under anesthesia and exploratory laparotomy if required.

Intraoperatively, the genital examination showed a single cervix, and the vagina was normal. On laparotomy, bowel loops were densely adherent to the anterior abdominal wall, and a large ~10cmx8cmx6cm pelvic abscess located in the pouch of Douglas was identified, which was drained (Figure 2). The uterus was buried under adhesions and was normal in size with an arcuate fundus. The left fallopian tube was grossly dilated with a fused fimbrial end and was forming a tubo–ovarian mass about 5cmx5cmx5cm in size. The right tube and ovary were buried under dense adhesions. Intraoperative assistance was obtained from a surgeon from the general surgery department, and bowel exploration was done, which was found normal. A few enlarged mesenteric lymph nodes were identified (Figure 3), which were sent for histopathological examination. The postoperative period was uneventful. The patient and her relatives were debriefed about the intraoperative findings and the possible reproductive implications.

The result of the abscess samples showed a positive cartridge-based nucleic acid amplification test (CBNAAT) or Mycobacterium tuberculosis with Rifampicin sensitivity, an elevated adenosine deaminase (ADA)level >200 U/L (cut-off level ≥40 U/L), a negative gram stain, a negative Ziehl Neelsen stain for acid-fast bacilli (AFB), a negative culture for aerobic and anaerobic organisms, and a negative AFB culture. Histopathological examination of mesenteric lymph nodes was suggestive of reactive follicular hyperplasia. The diagnosis of genital TB was established, and the patient was then started on a six-month course of anti-tubercular therapy (ATT). She recovered well and was discharged home after seven days. Two months later, she was admitted again with sub-acute intestinal obstruction which was managed conservatively. During the follow-up examination after six months, she was asymptomatic and had recovered completely. A follow-up ultrasound was arranged for the tubo-ovarian mass which showed a significant reduction in its size.

Discussion

The occurrence of genital TB in adolescents is an uncommon entity. Due to errors in diagnosis and reporting, the precise incidence of genital TB in adolescent females is still not clear. The TB infection of the genital tract is usually secondary to primary pulmonary TB. It results from the lymphohematogenous spread from the lungs or ingestion of infected sputum or direct spread. The most common site of affliction in genital TB is the fallopian tubes (95-100%), followed by the uterus (50-60%), and the ovaries in 20-30% of cases[7]. Since it often has a vague clinical presentation with non-specific symptoms, the clinical diagnosis is challenging and necessitates a high index of suspicion.

The case reported here was unique in many ways: 1) the presence of genital TB in teenagers is a rare occurrence; 2) lack of predisposing factors in history; 3) unusual clinical presentation as a surgical emergency; 4) both the clinical and radiological findings suggestive of hematometra, leading to diagnostic confusion.

Firstly, regarding the age of presentation, female genital TB mostly presents in the age group of 20-40 years (in 80-90% of patients)[8]. It is rare to see genital TB among adolescents. The published literature has reported that genitourinary TB accounts for only around 3% of all cases under fifteen years of age[4,5].

Secondly, regarding the predisposing factors for TB infection, the period of adolescence is associated with an increased susceptibility to TB infection and a risk of progression. This may be due to the immunological changes during puberty and distinct social and developmental traits[9]. There have been recent reports of gender variations in TB infection during adolescence, with an increased risk for females around the time of menarche[10].A recent study by Thakur S et al. also indicated a substantial gender

difference with increased susceptibility of female adolescents to tuberculosis[11]. The other risk factors for TB infection among adolescents include malnutrition, social contact, smoking, diabetes, HIV, substance abuse, or immunosuppression[12].In our case, she did not have any personal or family history of TB infection or any other predisposing factors except low BMI.

Thirdly, regarding the clinical presentation, about 40% of infertile patients with genital TB may be asymptomatic[13]. The diagnosis of genital TB often becomes apparent when women present with infertility in the reproductive age group. There is a paucity of literature on the common clinical presentation of genital TB among adolescents, with the common symptoms being chronic pelvic pain, dysmenorrhea, menstrual disturbances (primary or secondary amenorrhea or puberty menorrhagia), adnexal masses, chronic PID, and poor general health. Banerjee et al have reported genital TB in 35.29% of adolescent girls who presented with an acute presentation of ectopic pregnancy at a tertiary teaching hospital in North India[14].Inour case, she presented with an acute abdomen without any other symptoms, and genital TB was not suspected.

Fourthly, the presence of primary amenorrhea with a large abdominopelvic mass and the radiological findings probably contributed to the diagnostic confusion with hematometra associated with an obstructive Mullerian anomaly. There have been previous case reports in which genital TB has mimicked other disorders such as ovarian tumors, chocolate cysts, ruptured ectopic pregnancy, tubo-ovarian masses, acute appendicitis, or leiomyoma [15,16,17,18,19,20-21].

Akbulut et al. have reported a case of tubercular tubo-ovarian mass diagnosed on laparotomy in a 17-year-old girl who presented with clinical and ultrasound findings suggestive of acute appendicitis[15].Gascon and Acien have described a case of an 18-year-old woman who presented with recurrent hypogastric symptoms, and genital TB was not suspected. On laparotomy, a large pelvic abscess and large bilateral tubercular pyosalpinx were found, along with an associated septate uterus and an ectopic pelvic kidney[18].

Abreu N et al. reported a case of a pelvic mass suspected to be a malignancy and later found to be pelvic TB in a 14-year-old girl[21]. To the best of the authors' knowledge, no such case has been reported where the diagnosis of genital TB was confused with hematometra.

Apart from the long-term psycho-social impact of TB in adolescence, genital TB may lead to short-term and long-term consequences including infertility. Therefore, a high index of suspicion, timely diagnosis, and adequate treatment are the crux for its effective management and prevention of reproductive morbidity in the future. Although in this case, surgical exploration was required for the drainage of a large pelvic abscess, sometimes the misdiagnosis may lead to unnecessary surgical intervention in young girls for an antibiotic-responsive disease.

Conclusion

This report highlights a rare instance of genital TB in an adolescent girl who had an acute abdomen that was misdiagnosed as hematometra, emphasizing its clinical and diagnostic challenges. The case reinforces the fact that although it is infrequent in the adolescent age group, genital TB must be included in the differential of an acute abdomen with abdominopelvic mass, especially in developing countries with a high TB prevalence. Multidisciplinary care and an adolescent-friendly approach to ensure treatment compliance is imperative. Furthermore, the case sheds light on an urgent need for dedicated interventions to prioritize and address this silent epidemic in this young adolescent population.

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