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RESEARCH ARTICLE

WHEN TUBERCULOSIS IMITATES CANCER: UNRAVELING TUBERCULOUS PSEUDO-TUMOR IN GYNECOLOGICAL ONCOLOGY CASE REPORT

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Abstract

Pelvic-peritoneal tuberculosis is a rare extrapulmonary form that can clinically and paraclinically resemble advanced ovarian cancer, potentially leading to unnecessary extensive abdominal and pelvic surgeries. We present the case of a 15-year-old Moroccan girl who exhibited abdominal distension and vague pain. Imaging studies showed bilateral ovarian masses and ascites, with a CA125 level of 500 U/ml, raising strong suspicion for ovarian malignancy. However, histological examination from a diagnostic laparotomy revealed numerous granulomas containing epithelioid and Langhans giant cells. The patient responded favorably to antituberculosis therapy, resulting in the normalization of her CA125 levels.

Introduction:-

Pelvic-peritoneal tuberculosis (PPT) is regarded as a rare extrapulmonary form; however, this location occurs five to six times more frequently than in other organs. Due to its nonspecific symptoms, PPT is often unrecognized and misdiagnosed as ovarian cancer prior to surgery in females. We report the case of a girl with pelvic-peritoneal tuberculosis who underwent laparotomy based on clinical, radiological, and biological suspicions of advanced ovarian malignancy.

Case Presentation

A 15-year-old Moroccan girl, with no notable medical or surgical history, presented to our department with progressive abdominal distension and vague pain that had developed over the past two months. She reported no genitourinary or gastrointestinal symptoms. Upon examination, she was afebrile and exhibited normal vital signs, with no signs of jaundice or edema. A physical exam revealed a firm abdominopelvic mass that produced a dull sound on percussion, while the liver and spleen were not palpable.

Ultrasound examinations indicated two heterogeneous cystic masses in both ovaries, with septations measuring 90×67 mm on the right and 68×74mm on the left **(Figure 1).** The uterus appeared normal, and there was a moderate amount of free fluid in the peritoneal cavity. Contrast-enhanced abdominal and pelvic computed tomography (CT) scans, performed at 10 mm intervals, confirmed these findings, showing intense enhancement of the thin septations and smooth thickening of the peritoneum **(Figure 2).** There were no signs of abdominal or pelvic lymphadenopathy. A chest CT revealed no lung lesions, and a tuberculin skin test returned negative.

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Laboratory tests indicated an elevated leukocyte count (15,000 cells/ml), increased C-reactive protein (45 mg/l), and a serum CA-125 level of 500 U/ml. While advanced ovarian malignancy was suspected, abdominal-pelvic tuberculosis could not be ruled out. An exploratory laparotomy was scheduled for diagnostic and therapeutic purposes. Under general anesthesia, a midline subumbilical incision was made, revealing a pelvic hemorrhagic mass without a clear line of cleavage, adhering to the omentum, bowel, and uterus, and surrounded by yellowish ascitic fluid. Biopsies were collected from the peritoneal lesions and both ovarian masses, preserving the uterus and ovaries.

Histological analysis revealed granulomas containing epithelioid and Langhans giant cells **(Figure 3)**. Cytological examination of the ascitic fluid did not reveal any malignant cells, bacterial cultures were sterile, and the adenosine deaminase level was normal. The patient was diagnosed with pelvic-peritoneal tuberculosis and was treated with antitubercular therapy (ATT) for six months. She responded well to treatment and, two years after completing ATT, shows no signs of recurrence.

Discussion:-

Pelvic-peritoneal tuberculosis continues to pose a significant global health challenge, particularly in developing countries. Its exact incidence is difficult to determine due to its often asymptomatic nature, atypical symptoms, and the lack of reliable diagnostic tests[2]. Risk factors remain unclear, with approximately 12% of patients with pelvic-peritoneal tuberculosis (PPT) exhibiting no identifiable risk factors. Research by Sanches et al. identified several independent risk factors for this rare extrapulmonary form, including age over 40, female gender, HIV infection, and prior liver disease. In our case, the only notable risk factors were the endemic region and female gender[3].

The tubercular bacilli may reach the peritoneum and pelvic cavity through hematogenous spread or direct extension from nearby infected sites, such as the small intestine and lymph nodes, or, though rarely, via sexual transmission[4]. Clinical manifestations of PPT can range from asymptomatic to pelvic pain, infertility, general malaise, or menstrual irregularities. It may also present as a pelvic mass with ascites, complicating the differentiation from ovarian malignancy[5]. The patient's age can be a useful factor in distinguishing PPT from ovarian cancer, as pelvic-peritoneal tuberculosis typically occurs in individuals aged 20-40, while ovarian cancer is more common in older populations. Additionally, significant weight loss, which is uncommon in advanced ovarian cancer, is often observed in PPT[6].

Imaging modalities, such as ultrasound, CT scans, and MRI, may struggle to differentiate between these two conditions due to the diffuse nature of the disease and the presence of small implants in peritoneal tuberculosis, as seen in our case[7]. The antigen CA-125 is a non-specific marker commonly used to diagnose ovarian cancer; however, elevated levels can also occur in various clinical contexts, including pelvic inflammatory processes, endometriosis, uterine fibroids, hepatitis, pancreatitis, and peritonitis. Koc et al. reported elevated CA-125 levels in 90.1% of women with PPT, with an average value of 565 U/ml, a finding corroborated by other studies[8]. In our case, the CA-125 concentration was indeed high. According to Simsek et al., serial measurements of CA-125 levels in women with PPT may assist in assessing disease activity and response to antitubercular treatment[9].

Traditional diagnostic methods, such as the tuberculin skin test, chest radiographs, and cultures or Ziehl-Neelsen staining of ascitic fluid, are often insufficient for diagnosing pelvic or peritoneal tuberculosis[10]. An elevated adenosine deaminase (ADA) level in serous cavity fluid is now recognized as a reliable marker for tuberculosis, with studies demonstrating 100% sensitivity and 92-100% specificity for diagnosing peritoneal tuberculosis. However, false negatives may occur when the total protein concentration of ascitic fluid is low, as seen in cirrhosis, which was not the case in our patient. Polymerase chain reaction (PCR) testing for Mycobacterium can be beneficial but is not widely accessible[11].

In our case, presenting with suspected ovarian masses, peritoneal effusion, and elevated CA-125 levels, ovarian cancer was the primary diagnostic consideration, prompting an exploratory laparotomy (due to the lack of laparoscopic facilities) for pathological evaluation of the abdominopelvic lesions. Surgical interventions for suspected ovarian malignancies should be conducted by surgeons experienced in the treatment and staging of ovarian carcinoma. Indications for surgery in patients with pelvic tuberculosis include persistent pelvic masses and recurrent pain after treatment completion; such invasive approaches should be conservative, especially in women of reproductive age [12].

Conclusion:-

When a girl presents with an abdominopelvic mass, ascites, and elevated CA-125 levels, ovarian malignancy is typically suspected. However, pelvic tuberculosis should always be included in the differential diagnosis, particularly in endemic areas. Preoperative investigations often fail to provide a definitive diagnosis. Despite comprehensive assessments, it may not be possible to definitively exclude ovarian malignancy or confirm pelvic-peritoneal tuberculosis without performing an exploratory laparotomy.

List of figures:

Figure 1: Transabdominal ultrasound showing a multilocular cystic lesion in the right ovary, without any visible vascular component, located within a moderate peritoneal effusion.

Figure 2: Contrast-enhanced CT scan of the pelvis displaying two multilocular cystic masses (asterisks) with pronounced enhancement of the thick walls, septations (yellow arrows), and the peritoneum.

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