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CASE REPORT

PERITONEAL TUBERCULOSIS IN YOUNG AGE LADY MIMICKING GYNECOLOGY MALIGNANCY : A CASE REPORT

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Abstract

Background : Peritoneal tuberculosis is one of the most challenging forms of extrapulmonary tuberculosis to diagnose. Extrapulmonary TB is very difficult to diagnose because of its non-specific signs and symptoms, thus it sometimes leads to a diagnosis of gynaecological malignancy such as advanced ovarian carcinoma.
Case Report : A teenage girl, 12 years old, with a chief complaint of intermittent abdominal pain since the last 1 month. There was no history of an enlarged abdomen, fever and weight loss. Ultrasound examination revealed an irregular adnexal mass suggesting an ovarian malignancy with other possibilities of an infectious process. Diagnostic laparoscopy and peritoneal biopsy were performed on the patient. Intraoperatively, multiple friable nodular-mylar peritoneal masses with abdominopelvic attachments and fibrin fibres and white vesicles were found on the entire surface of the genitalia, peritoneum, and intestines. A mass biopsy was performed with histopathological results showing peritoneal tuberculosis. Currently, the patient is undergoing anti-tuberculosis drugs (OAT) treatment.
Discussion : The diagnosis of this disease is difficult to establish. Symptoms are highly variable and non-specific and can lead to the wrong tumour pathology. The clinical characteristics are dominated by changes in general condition, abdominal pain and transit disorders, as well as masses (20 to 25%). The gold standard for definitive PTB diagnosis remains laparoscopy with peritoneal biopsy and subsequent pathological or microbiological confirmation. Yellow/white nodules in the peritoneum observed on the patient's laparoscopic images are the hallmark of wet peritoneal TB. Omental thickening and abdominal cocoon with matted small bowel are other classic laparoscopic findings for peritoneal TB.
Conclusion : PTB has similar characteristics to peritoneal carcinoma, which makes diagnosis difficult for clinicians. Early and correct diagnosis of PTB helps to initiate medical management quickly and helps reduce morbidity and mortality.

Keywords: peritoneal tuberculosis, gynecological malignancy, young age

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INTRODUCTION

Peritoneal tuberculosis (PTB) is one of the most challenging forms of extrapulmonary tuberculosis to diagnose. Diagnosis of peritoneal tuberculosis is difficult to make. Patients with PTB often present with nonspecific symptoms and may have no apparent epidemiological risk factors for Mycobacterium tuberculosis (MTB) infection.[1] Peritoneal TB (PTB) accounts for approximately 25–50% of abdominal TB cases and 0.1–0.7 % of all TB cases. The increasing prevalence of abdominal TB concomitant with PTB is thought to be secondary to the increasing prevalence of immunocompromised conditions, including human immunodeficiency virus (HIV) infection and alcoholic liver disease, as well as increased migration to endemic areas.[2]

Extrapulmonary TB is very difficult to diagnose because of its non-specific signs and symptoms, which sometimes lead to a diagnosis of gynaecological oncology such as advanced ovarian carcinoma. Non-specific disease symptoms such as abdominal or pelvic symptoms with masses, ascites, and elevated CA 125 levels can mimic those of advanced ovarian cancer and sometimes result in confusion.[3] The management and clinical outcomes of PTB and advanced ovarian cancer are very different. PTB is treated with anti-tuberculosis drugs, and can be cured. In contrast, advanced ovarian cancer should be treated with debulking surgery followed by cytotoxic drugs and with poorer clinical outcomes.[4]

LAPORAN KASUS

A patient (Ms M) aged 12 years was referred from the pediatric department of Dr M. Djamil General Hospital. The patient complained of abdominal pain since the last 1 month. There was no history of an enlarged abdomen, no fever, nor weight loss. There were no abnormalities in defecation and micturition. The patient has not had menstruation. There was no family history of malignancy.

Physical examination showed that vital signs were within normal limits. There was no abdominal distention. The abdomen was tender and dull on percussion. The bowel sounds were within normal. Laboratory tests revealed within normal limit. Ultrasound examination showed the impression of suspected ovarian cancer with a differential diagnosis of ovarian and pelvic tuberculosis.

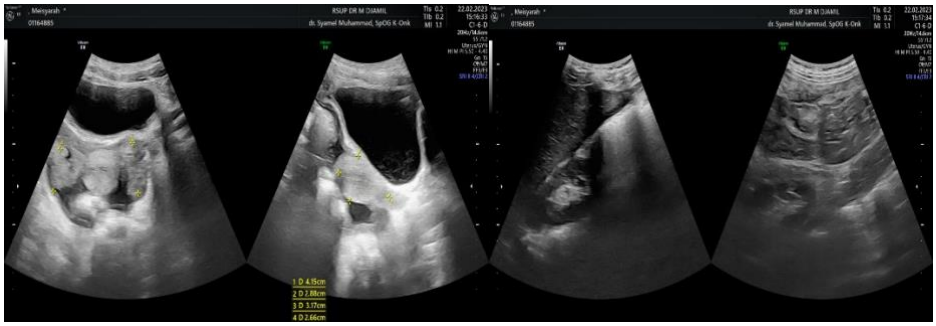

Figure 1. Ultrasound Examination

Diagnostic laparoscopy and peritoneal biopsy were performed on the patient. During the intraoperative period, multiple peritoneal masses with adhesive and fibrin were found and white vesicles were found on the entire surface of the genitalia, peritoneum and intestine. Peritoneal biopsy was performed.

Based on the anatomic pathological examination, macroscopically, pieces of dense, supple brownish-white tissue measuring 1.2 x 1 x 0.7 cm were found. Meanwhile, microscopically,

tissue consisting of connective tissue stroma containing tubercles consisting of histiocytes, epithelioid, the datia Langhans cells and lymphocytes were found, and also areas of caseous necrosis and areas of bleeding were seen. On the other hand, a group of epithelium grew papillary towards the lumen with round-oval, vesicular, hyperchromatic nuclei. The interpretation of the anatomic pathological examination was Caseosa Tuberculous Peritonitis with no sign of malignancy.

Figure 2. Intraoperative Image

DISCUSSION

Mycobacterium tuberculosis (TB) infection is one of the leading causes of death worldwide and continues to be a significant threat to global health. Extrapulmonary manifestations of tuberculosis are not common. Extrapulmonary TB (EPTB) can affect many parts of the body. Intra-peritoneal tuberculosis is a rare disease, accounting for 1-2% of all tuberculosis cases. Tuberculous peritonitis is a common form of abdominal TB and continues to be relatively prevalent in developing countries. This condition occurs in 3.5% of pulmonary TB cases, and 31% -58% of abdominal TB cases. Abdominal TB is more common in the age group of 25-45 years and rarely occurs in the pediatric population. In a minority of pediatric cases, peritoneal involvement is more common than gastrointestinal, with the most common presentations being abdominal pain, distention, and fever. It has been reported that the incidence of peritoneal TB in children under 20 years of age in the United States is only 0.3%.[5]

PTB is classified into three types based on the clinical presentations, i.e. wet, dry or plastic, and fibrotic-fixed. The wet type is the most common presentation of peritoneal tuberculosis and is characterized by abdominal pain, fever, and ascites. The dry or plastic-type is characterized by peritoneal inflammation and adhesion formation secondary to caseating nodules. Fibrotic-fixed is the least common type and these patients often present with subacute bowel obstruction and omental masses.[5]

Peritoneal tuberculosis is a rare disease, often associated with the primary site of tuberculosis. Risk factors include HIV infection, diabetes mellitus, treatment with anti-tumour necrosis factor (TNF) agents, ongoing peritoneal dialysis, and cirrhosis of the liver. *Bacilli* may

enter the peritoneal cavity by several routes, including transmural infection from diseased bowel or more commonly by hematogenous spread of infection from a pulmonary focus. Although the lungs are often the main site of infection, there is clinical or radiological evidence of pulmonary tuberculosis in only about one-third of cases.[6]

The diagnosis of this disease is difficult to enforce. Symptoms are highly variable and non-specific and can lead to the wrong tumour pathology. The clinical presentations are dominated by changes in general condition (80%), abdominal pain (60%), transit disorders (40%), a palpable mass (20 to 25%) and less commonly manifests complications (occlusion, bleeding or perforation).[7] Abdominal pain is usually involved to a lesser extent in the wet type of ascites. Unfortunately, given the wide spectrum of symptoms present, the rarity of the syndromes and the significant overlap with more severe etiologies, clinical suspicion for peritoneal TB is usually low during the diagnostic evaluation. Peritoneal TB usually occurs as an isolated event, making the diagnosis more elusive. Laboratory testing can confound further analyses due to malignancy bias because of cancer antigens, especially CA-125, are increased in peritoneal TB and malignancy.[8]

Common clinical, imaging, and laboratory features of peritoneal tuberculosis in women include pelvic pain or discomfort, ascites, diffuse peritoneal involvement, adnexal masses, and elevated serum CA-125. These features overlap substantially with the clinical presentation of advanced ovarian carcinoma (OC) or primary peritoneal carcinoma (PPC) leading to the misdiagnosis of advanced malignancy.[5]

The routine haematological examination is nonspecific, as the most frequent haematological findings include moderate normochromic normocytic anaemia, thrombocytosis, and normal white blood cell counts. Ascitic fluid analysis is often performed for patients with suspected PTB. The most common ascitic fluid tests include acid-fast bacilli staining/smearing and culture, white blood cell count, lactate dehydrogenase, serum-ascites albumin gradient (SAAG) score, and cancer antigen-125.[2]

Considering that radiological and laboratory studies are neither sensitive nor specific for PTB, the diagnosis is often made by peritoneal biopsy and histological analysis. This can be done by diagnostic laparoscopy; however, caution is needed as conversion to laparotomy can be up to 10% as severe adhesions may be encountered. Laparoscopy assists in achieving an early diagnosis of PTB and initiating medical management without further delay.[9]

The gold standard for definitive PTB diagnosis remains laparoscopy with peritoneal biopsy and subsequent pathological or microbiological confirmation.[2] Yellow/white nodules in the peritoneum observed on the patient's laparoscopic images are the hallmark of wet peritoneal TB. Omental thickening and abdominal cocoon with matted small bowel is another classic laparoscopic finding for peritoneal TB. Considering that granulomatous peritonitis and

peritoneal TB share many identical clinical and histopathological characteristics, postoperative granulomatous peritonitis remains a diagnosis of exclusion and the presence of Mycobacterium TB must be ruled out first.[8]

Less invasive imaging techniques, such as ultrasound and computed tomography, may also initially be used to detect abdominal changes that are common in PTB, such as ascites (free or localized), lymphadenopathy, peritoneal thickening and nodules, adhesions, and fibrinous septations. In addition, computed tomography can be combined with 18F-fluorodeoxyglucose positron emission tomography to increase the sensitivity in determining peritoneal thickening of unknown origin. Computed tomography or ultrasound can be used to facilitate peritoneal needle biopsy or aspiration of ascitic fluid.[2]

Abdominal imaging in peritoneal tuberculosis often mimics malignancy and has been reported to have limited diagnostic accuracy. Ascites, peritoneal and omental disease, pelvic masses, and retroperitoneal lymph node enlargement are common in tuberculosis and advanced malignancy. However, certain radiologic features may favor TB pathology rather than malignancy and an experienced radiologist may be able to provide the differential diagnosis.[5]

On abdominal ultrasonography, ascites with fine fibrous strands and lymphadenopathy with hypoechoic nuclei showing caseation indicate a higher probability of tuberculosis. Abdominal contrast CT scan shows septate or particulate ascites, omental fat stranding, indistinct adnexal mass, subtle and greatly increasing peritoneal thickening, and caseous lymph nodes favour tuberculosis while a well-defined heterogeneous adnexal mass, nodular peritoneal thickening, and nodular or stratified omentum favour malignancy. In one study, peritoneal tuberculosis was suspected in only a minority (15.8%) of patients based on imaging findings, which included one or more of the following features: the presence of calcified, necrotic retroperitoneal lymph nodes; cystic fluid in the stomach/pelvis; peritoneal thickening; ileal loop clots; mesenteric stranding; omental thickening without caking; ascites with internal echo; unclear pelvic mass; and hydrosalpinx. The PET-CT scan, which was performed in only 6 patients, suggested the diagnosis of late malignancy in all of them indicating that it was not reliable in making this distinction.[5]

SIMPULAN

Due to the lack of specific features in preoperative assessment, the diagnosis of peritoneal tuberculosis is often made after surgery for suspected ovarian malignancy. However, in one series, only 8 (6.7%) patients underwent surgical biopsies whereas the diagnosis of the remaining patients was made either on image-guided biopsies or based on clinical and laboratory findings. [5]

Treatment for extrapulmonary TB is similar to pulmonary TB, but there are differences

in the length of treatment depending on the location of extrapulmonary TB.[10] Currently, the five first-line drugs commonly used are isoniazid (INH), rifampicin (RIF), pyrazinamide, ethambutol, and streptomycin. Treatment duration consisted of a four-drug regimen administered over 2 months, with the continuation of treatment with RIF and INH for 4 months or longer.[2] According to the guidelines of the Infectious Diseases Society of America, 6-9 months of tuberculosis treatment is effective for most extrapulmonary tuberculosis. Treatment for peritoneal, lymph node and genitourinary TB is carried out for 6 months. Meanwhile, if TB is located in the central nervous system, the length of treatment is taken for 9-12 months.[11]

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