Atypical peritoneal tuberculosis.
Use of laparoscopy in the diagnosis

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RESUMEN

La sospecha clínica de tuberculosis peritoneal debe estar presente en todo paciente con dolor abdominal de etiología desconocida; sobre todo si se acompaña de fiebre, ascitis y distensión abdominal. El acceso por vía laparoscópica a la cavidad abdominal de forma regulada contribuye de manera primordial al diagnóstico tanto por la imagen macroscópica como para la toma de biopsia, que dará posteriormente la confirmación anatomopatológica y microbiológica. Ayudando a discriminar entre los posibles diagnósticos diferenciales que acontecen con clínica similar. Otras pruebas diagnósticas analíticas deben ser tenidas en cuenta para ayudar tanto a la indicación de laparoscopia como de cara al diagnóstico, son tales como la ADA, gammagrafía con Galio-67 y Ca-125.


ABSTRACT

The presence of peritoneal tuberculosis has to be clinically suspected in all patients with abdominal pain of unknown etiology, particularly when it is accompanied by fever, ascites, and abdominal distension. Access to the abdominal cavity using routine laparoscopy provides essential information on the diagnosis, from both macroscopic images and biopsy sampling, which will later provide a pathological and microbiological confirmation. This helps discriminate between potential differential diagnoses that may include similar symptoms. Other laboratory tests have to be considered as diagnostic aids, as well as for the indication of laparoscopy, including ADA, and Gallium-67 or Ca-125 scans.

Key words: Peritoneal tuberculosis. Ascites. Dry peritonitis. Laparoscopy.

INTRODUCTION

Tuberculosis is currently a serious health problem worldwide, and its incidence has increased in recent years. However, extrapulmonary tuberculosis involving the peritoneum is rare, even though its prevalence has been increasing due to factors such as the aggressiveness of new chemotherapy and corticoid treatments against immunosuppressing viral diseases, including HIV, immi-

gration, and an increase in neoplastic diseases. This disease bears a great resemblance to other clinical pictures, and due to its diverse clinical symptoms (not very conspicuous in a majority of patients early in the course of disease), early clinical suspicion is necessary to initiate a study protocol aimed at arriving at a definitive diagnosis. The laparoscopic approach must be considered the primary technique for biopsy collection and de visu diagnosis, in view of the many gastrointestinal diseases presenting with abdominal pain and ascites of unknown etiology.

CASE REPORT

A 30-year-old patient with a history of facial paralysis eleven years ago reported the following history: Usual
smoker, non-ulcerous dyspepsia, anxiety-depressive syndrome, irregular menses, multipara, and no substance abuse or dubious sexual relations.

She was seen several times for painful symptoms in the right hypochondrium and lumbar region, radiating to the genitals, and a urinary condition, and was also diagnosed several times with renal colic. Two months earlier the patient presented with fever, increased abdominal diameter, dyspareunia, leucorrhea, dysuria, dark urines, and oral thrush. She also complained of weight loss without anorexia, and no intestinal habit disturbances.

Examination revealed a painful abdomen with positive fist percussion of the kidney and ascitic wave.

In view of the anamnesis and clinical examination a range of differential diagnoses were considered, including: peritoneal carcinomatosis, hepatic disease, ovarian neoplasm, celiac disease, intestinal tuberculosis, and PID with peri-hepatic infection (Fitz-Hugh-Curtis syndrome) due to gonococci or *Chlamydia*, among other pathological organisms. Lab tests showed neutrophilia without leukocytosis, lymphopenia, hypochromic microcytic anemia, decreased platelets, increased ESR (111 mm/h, normal < 10), and raised CRP levels (182 mg/l, normal < 5). She also had hypoalbuminemia at 2 g/l, increased globulins, and mildly increased bilirubin.

The patient was subjected to a gynecological study with normal results.

A Mantoux test was negative, as were serological tests for *Brucella*, retrovirus, hepatitis B, and hepatitis C. An increased ADA was found (25.8 U/l, normal < 18.2), as was a very high Ca-125 neoplastic antigen (714 U/ml, normal < 35). Pharyngeal exudate was positive for *S. aureus*. Anti-gliadin and anti-endomysium antibodies were normal.

Likewise, urinalysis showed a moderate increase in bilirubin and traces of ketone bodies, with urine culture being negative.

A fecal analysis was negative as regards Ziehl-Neelsen culturing for AFB on two occasions. Lowenstein cultures were also negative.

A paracentesis of ascitic fluid was carried out, and a clear liquid was obtained that contained 1,476 cells/ml, 80% of which were polymorphonuclear cells (normal < 20%). LDH was very high, proteins were increased, and culture for *S. haemolyticus* was positive. A Ziehl-Neelsen stain was negative.

Using plain abdominal X-rays we observed a normal distribution of gas, although with a certain tendency to be located at the center; we could not evaluate it properly as both sides remained invisible. There were signs suggesting the presence of free fluid inside the pelvis.

Abdominal ultrasounds showed free peritoneal fluid, with no significant findings in abdominal viscera (Fig. 1).

A gastroduodenal barium contrast study was carried out, which did not show any intestinal transit disturbances.

An abdominal CT scan revealed abundant free fluid and peritoneal thickening as most striking findings (Fig. 1).

With no clear suspicion of the primary disorder responsible for the symptoms, and bearing in mind peritoneal carcinomatosis, diffuse intraperitoneal infection, and peritoneal tuberculosis itself, the patient was admitted for a routine diagnostic laparoscopy.

On entering the cavity we found numerous adhesions and intraperitoneal septa, including the spaces between abdominal organs, particularly hepatic adhesions. A very extensive peritoneal spread of tuberculomas was seen (Fig. 2). A biopsy was taken of the peritoneal tuberculosis and the liver, and the most conspicuous adhesions were freed.

Pathology results revealed a peritoneal granulomatosis with an etiology suggestive of tuberculosis, a liver with capsular granulomatosis suggestive of tuberculosis, and reactive parenchymal inflammatory disturbances.
DISCUSSION

Peritoneal tuberculosis is a rare form of extra-pulmonary tuberculosis usually caused by Mycobacterium tuberculosis. Pulmonary tuberculosis is observed in 40% of cases. Reactivation of a latent focus in the peritoneum is more common than its coming from the lung by hematogenous routes. It is much rarer by the transmural route. The risk of infection increases depending on a series of risk factors such as corticoid treatment, immunosuppression, HIV, cirrhosis, diabetes mellitus, malignant disease, and peritoneal dialysis, among others (2). Approximately 70% of those affected have symptoms for several months before diagnosis.

The most frequent symptoms are abdominal pain, fever, and weight loss. The most frequent symptom at the time of presentation is abdominal pain and ascites (3). More than 90% of cases present with ascites at the time of diagnosis. A minority present with a more advanced phase called dry tuberculous peritonitis, which is a fibro-adhesive form of this disease (4). This fibro-adhesive form is associated with abdominal distension and occurs rarely.

Normochromic, normocytic anemia is usually seen in a majority of patients (5). In routine laboratory measurements significant increases in Ca-125 are found, which is also useful for monitoring, as this parameter decreases on starting an appropriate medical treatment (4). The Ca-125 value can return to normal after 8 weeks of medical treatment, which can be used as a marker of disease activity (3).

Mantoux test is normally positive in 70% of patients, although a negative result does not exclude the disease (1).

A lymphocytic type of pleocytosis is normally present on analyzing the peritoneal fluid. The sensitivity of serological tests is around 60-80%, and usually helps in the diagnosis, particularly in cases of advanced disease.

ADA (adenosine deaminase), which is an enzyme in the metabolism of purines present in the maturation of monocytes, macrophages, and T-lymphocytes, is usually high (14). The sensitivity and specificity of ADA levels in tuberculous ascites is 100 and 97%, respectively, for values > 33 u/L (1,6).

A PCR test is used for the rapid detection of mycobacteria. It is often used to detect tuberculosis, but this is not totally established.

From the point of view of plain radiology, evidence of old tuberculosis is rare. We can find foci of active tuberculosis in only 20-30% of patients (7). The finding of ascites, septa, and intraperitoneal adhesions in abdominal ultrasounds is more common, as is in CAT. These images are suggestive of peritoneal tuberculosis, aiding the indication for laparoscopy and diagnosis itself. A scan with gallium-67 is also useful when suspecting this disease, and will help in the differential diagnosis between this condition and other peritoneal neoplastic diseases (8).

Differential diagnosis includes, among many other diseases, lymphoma, other forms of peritonitis, peritoneal carcinomatosis, advanced stages of ovarian cancer, and peritoneal mesothelioma (1).

A biopsy and direct viewing of the peritoneal cavity is generally required for the diagnosis. Blind biopsies are useful and easy to perform but have a considerable rate of complications, including death (8). The laparoscopic technique is considered the primary intraperitoneal approach route, which not only guarantees a correct viewing of the peritoneal cavity but also allows peritoneal fluid and multiple peritoneal biopsies to be taken, as well as biopsies from other intraabdominal locations such as the liver. The most useful information obtained using laparoscopy is usually a visualization of peritoneal adhesions between the peritoneum and other organs, as well as caseum granulomas throughout the peritoneum (8,9).

The reported mortality of laparotomy is 3-12%, whereas a morbidity and mortality of 0-5% and 0-0.04%, respectively, has been reported for laparoscopy in older studies (9). In recent studies there have been no deaths caused by the laparoscopic approach.

Therefore, we may diagnose peritoneal tuberculosis when one of the following two criteria is met (10):

1. Isolation of Mycobacterium tuberculosis in the ascitic fluid or in biopsy samples from peritoneal tissue.
2. Observation of small tubercules in the peritoneum during laparoscopy or laparotomy, with a diagnosis of granulomas in the biopsy and a favorable clinical response to anti-tuberculosis chemotherapy.

Anti-tuberculosis treatment can be initiated even when Ziehl-Neelsen staining is negative, relying only on a visual diagnosis using laparoscopy.

As regards treatment, some authors advise using a combination of corticoids in this form of peritoneal tuberculosis, which reduces the frequency of complications from anti-inflammatory agents and the immunosuppressing effects of steroids (10).

As regards the monitoring of clinical and chemotherapeutical responses, we may use Ca-125 values (3), as previously mentioned, to good effect, and abdominal ultrasounds to confirm a decrease in ascitic fluid.

REFERENCES


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