

# Value of diagnostic laparoscopy: Peritoneal tuberculosis. A case report

## Valor de la laparoscopia diagnóstica: Tuberculosis peritoneal. Reporte de un caso

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### ABSTRACT

Peritoneal tuberculosis is a rare extrapulmonary form of tuberculosis that is difficult to diagnose, given its nonspecific clinical manifestations and can mimic other pathologies such as peritoneal carcinomatosis or cirrhosis with ascites. Diagnostic laparoscopy is the fundamental tool for etiological confirmation, allowing direct visualization of lesions and biopsy collection. We present the case of a male patient in whom laparoscopy was decisive in establishing the diagnosis.

**Keywords:** peritoneal tuberculosis, diagnostic laparoscopy, biopsy

### RESUMEN

La tuberculosis peritoneal es una forma extrapulmonar infrecuente y de difícil diagnóstico, dado que sus manifestaciones clínicas son inespecíficas y pueden simular otras patologías como carcinomatosis peritoneal o cirrosis con ascitis. La laparoscopia diagnóstica constituye la herramienta fundamental para la confirmación etiológica, al permitir la visualización directa de las lesiones y la toma de biopsias. Presentamos el caso de un paciente masculino en quien la laparoscopia fue decisiva para establecer el diagnóstico.

**Palabras claves:** tuberculosis peritoneal, laparoscopia diagnóstica, biopsia.

### INTRODUCTION

Peritoneal tuberculosis can present with three main clinical pathological patterns: (1) wet type with free or loculated ascites, (2) dry type with formation of nodules and adhesions, and (3) fibro-adhesive type with abdominal masses and dense septa. These forms may coexist and complicate diagnostic orientation.

The most frequent clinical findings include: diffuse abdominal pain (80–90%), ascites (80%), evening fever (60–70%), and significant weight loss (70–80%). However, such manifestations are nonspecific and may be confused with peritoneal carcinomatosis, hepatic cirrhosis, Crohn's disease, or

abdominal lymphoma.

Diagnosis based solely on ascitic fluid is limited: the sensitivity of direct bacilloscopy is < 5% and that of culture between 20% and 50%. Markers such as adenosine deaminase (ADA) can support the diagnosis, with a sensitivity of 90% and specificity of 85% in tuberculous ascites. However, etiological confirmation almost always requires peritoneal biopsy.

Diagnostic laparoscopy is considered the reference method, as it allows direct visualization of typical lesions—caseous nodules, whitish plaques, adhesions—and provides tissue for histology, culture, and molecular testing. Its sensitivity and specificity exceed 90%, making it the most effective technique for definitive diagnosis.

### CLINICAL CASE

Male patient, 32 years old, previously healthy, incarcerated for 1 year, consulted for progressive abdominal distension, pain, and weight loss of 8 kg over three months. On physical examination, he presented with a distended abdomen, moderate ascites, and diffuse pain on palpation.

Admitted to the internal medicine service; initial studies showed mild normocytic anemia, elevation of acute phase reactants, and ultrasound with free fluid. Contrast enhanced abdominal CT revealed free fluid in the abdominal cavity, with normal upper endoscopy and colonoscopy. Paracentesis was performed, which revealed ascitic fluid with inflammatory characteristics, but the AFB study was negative.

A diagnostic laparoscopy was indicated due to suspicion of abdominal tuberculosis, given his history of incarceration. Multiple whitish caseous nodules were observed on the parietal and visceral peritoneum, along with loose adhesions (*see Figure 1*) and turbid ascitic fluid (*see Figure 2*). Multiple biopsies were taken (*see Figure 3*). Histopathological study reported chronic granulomatous inflammation with benign multinucleated giant

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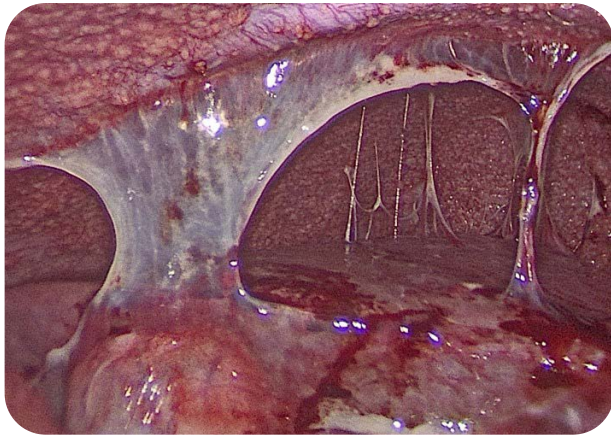
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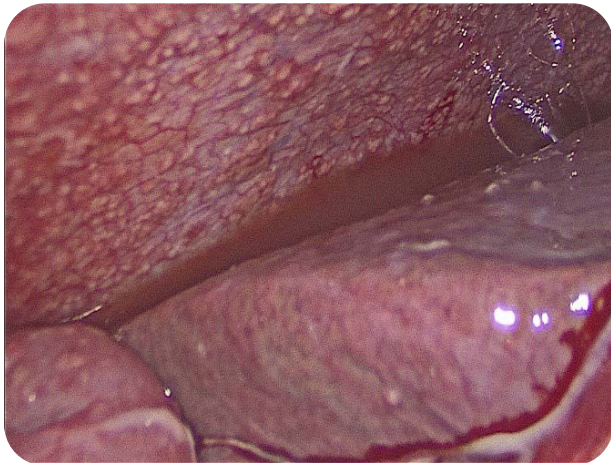
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Langhans type cells. Histological appearance is compatible with tuberculosis. A definitive diagnosis of peritoneal tuberculosis was established. The patient began first line antituberculous treatment with good clinical evolution.



**Figure 1.** Thin, filamentous peritoneal adhesions extending as delicate, transparent bands between serosal surfaces.



**Figure 2.** Cloudy ascitic fluid, which is aspirated and sent for studies.



**Figure 3.** Biopsy of the parietal peritoneum.

## DISCUSSION

Peritoneal tuberculosis constitutes a diagnostic challenge, especially in regions where other pathologies such as peritoneal carcinomatosis or hepatic cirrhosis with ascites are more prevalent. Clinical and imaging diagnosis is rarely conclusive, and conventional methods such as bacilloscopy and culture of ascitic fluid present significant limitations in terms of sensitivity. The use of biomarkers such as adenosine deaminase (ADA) in ascitic fluid has shown great value, but it still does not replace the need for histopathological confirmation.

Diagnostic laparoscopy offers substantial advantages over other methods: direct visualization of the abdominal cavity, identification of typical lesions (caseous nodules, whitish plaques, fibroinflammatory adhesions), and targeted biopsy. International studies have reported sensitivity and specificity greater than 90%, making it the most reliable method for diagnostic confirmation.

Moreover, it makes it possible to accurately differentiate between tuberculosis and other causes of chronic ascites such as neoplasms or inflammatory bowel diseases.

The case described here reinforces that, even with access to modern molecular biology tests, laparoscopy remains the most decisive technique in uncertain scenarios. Obtaining sufficient tissue for histology and molecular tests such as PCR accelerates diagnostic confirmation, allows early initiation of treatment, and reduces associated morbidity and mortality. Early initiation of the antituberculous regimen decreases severe complications, including intestinal obstruction, extensive adhesions, and chronic peritonitis.

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