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# Peritoneal Tuberculosis Simulating an Ovarian Tumor at the Peritoneal Carcinomatosis Stage: A Case Report

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**Abstract** **Case Report**

The peritoneal location of tuberculosis can simulate advanced ovarian cancer. It's a diagnostic problem due to the non-accessibility of specific examinations. We report a case of 41-year-old female with pseudo-tumoral peritoneal tuberculosis, suspecting ovarian cancer, associated with peritoneal carcinomatosis. The diagnosis was made on exploratory laparotomy and biopsy of the peritoneal granulations, the patient was put under a classic anti-tuberculosis therapeutic regimen (2ERHZ/4RH), with good outcomes. It's essential before any invasive ovarian surgery to provide histological proof of the cancerous nature of the lesions. This attitude would not be substituted by experience.

**Keywords:** Peritoneal Tuberculosis, Ovarian Cancer, Peritoneal Granulation Biopsy, Case Report.



## INTRODUCTION

The peritoneal location represents one of the differential diagnoses, which can mimic advanced ovarian cancer since it increases the serum markers classically associated with this cancer [1]. The pseudo tumors peritoneal localization of tuberculosisis, a rare clinical form, whose frequency is estimated at between one and three percent, depending on the series. However, the diagnosis remains difficult, due to the lack of specificity in the clinical picture, the biological and radiological examinations, as much as the low sensitivity of Mycobacterium tuberculosis isolation from the ascites fluid [2]. Only postoperative diagnoses, through histopathology examination, of a sample, gotten from explorative laparotomy or laparoscopy is certain [3]. We present here a peritoneal tuberculosis case, in a 41-year-old patient that simulated left ovarian cancer with peritoneal carcinosis.

## PATIENT AND OBSERVATION

**Patient Information:** This is a41-year-old multiparous female, immunized agains tuberculosis during childhood,

**Clinical Findings:**

The patient presented mesenteric infiltrations with ascites and a left ovarian mass, which measured 32 mm in diameter (figure 1). This mass is initially taken for an ovarian tumor at the stage of peritoneal metastases. Histopathological examination found a giant cellular epitheloid granuloma with caseous necrosis characteristic of tuberculosis (figure 3, figure 4).

**Timeline of Current Episode:**

The patient consulted for chronic epigastric and pelvic pain, associated with abdominal distension, long-term unmeasured fever, and weightloss.

Abdominal ultrasound found mild ascites with hyper echo mesenteric densifications; A cystic mass at the expense of the leftovary.An abdominopelvic CT scan noted mesenteric infiltrations with ascites and a left ovarian mass, which measured 32 mm in diameter.

(Figure 1). An FBC revealed anemia with 10.5g/dl of hemoglobin and lymphopenia. The Ca 125 marker increased to 350U/ml. Thus, the diagnoses of left ovarian tumor at the stage of peritoneal carcinomatosis and peritoneal tuberculosis were evoked. A puncture of ascitic fluid analyzed by the Polymerase Chain Reaction (PCR) technique with the Gene-expert device did not find Mycobacterium tuberculosis DNA.

The Purified Protein Derivative (PPD) was not performed.

An exploratory laparotomy was indicated.

At the opening of the peritoneum, were found diffused peritoneal inflammation, abundant ascites, thickening of the omentum, and numerous whitish millet-grain granulations disseminated on the parietal and visceral peritoneum covering the intra-abdominal organs and the mesentery (figure 2); and a leftovarian mass.

We took a sample of ascites fluid, omentum, and mesentery as well as we did a left adnexectomy, abundant lavage, and drainage of the abdominal cavity.

The postoperative course was simple.

Histopathological examination of the samples, found a giant cellular epitheloid granuloma with caseous necrosis characteristic of tuberculosis (figure 3, figure 4).

The patient was put on anti-tuberculosis treatment (2ERHZ/4RH), with a favorable outcome.

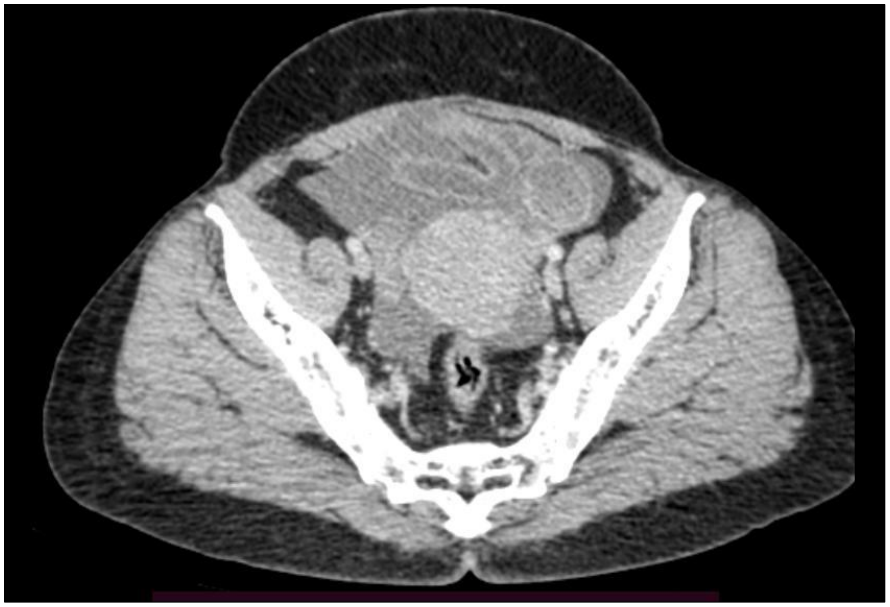

**Figure 1: CT scans of the abdmino pelvic floor peritoneal effusion with ovarian mass measuring 3cm in diameter peritoneal thickening with heterogeneous enhancement**

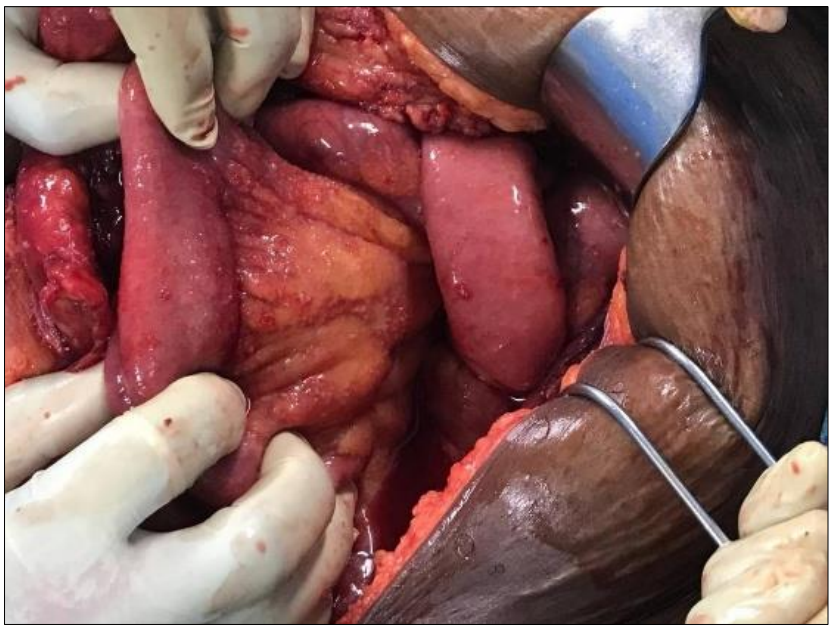

**Figure 2: Whitish granulation disseminated on the mesentery and the visceral peritoneum**

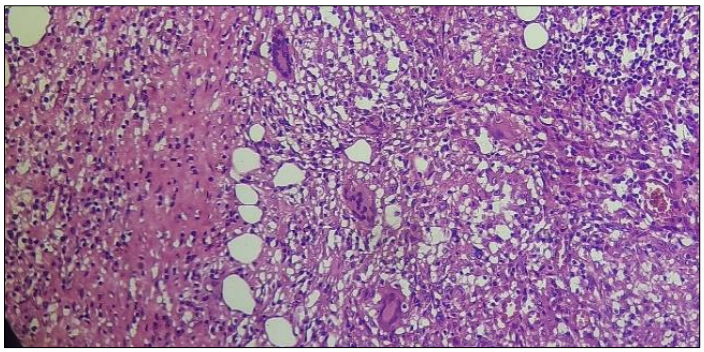

**Figure 3: Microscopic appearance of giant node cell granuloma**

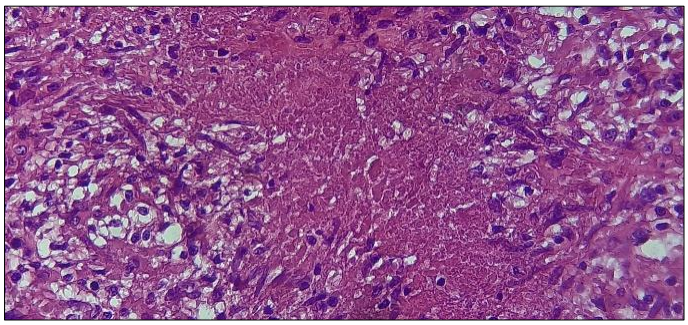

**Figure 4: Microscopic appearance of caseous necrosis**

## DISCUSSION

Extra-pulmonary tuberculosis counts the highest proportion of tuberculosis in Benin, with a frequency of 11%. The peritoneal location is ranked 4th after the pleural, lymphnode, and osteoarticular sites.

Immunosuppression due to HIV infection is responsible for the lymphatic invasion and dissemination of Koch Bacillus to all body systems, which explains the high prevalence of co-infection in extraperitoneal tuberculosis [4].

Peritoneal dissemination results from the reactivation of latent tuberculousfoci in the peritoneum or from the hematogenous spread of a primarypulmonary infection that often goes unnoticed [5]. They are the consequence of an alteration of antibacterial defense mechanisms, mainly affecting the reticuloendothelial system, the function of polymorphonuclearneutrophils (PNN), and the mechanisms of humoral and cellular immunity [6].

The clinical picture of peritoneal tuberculosis is nonspecific. Symptoms include abdominal fullness, ascites, pelvic discomfort or pain, weightloss, andanemia; all withincreasedserum CA125 levels and/or a pelvic mass [6].

Its clinical presentation in women usually mimics advanced ovarian cancer or primary peritoneal carcinomatosis. Therefore, this condition should be included in the differential diagnosis of advanced ovarian cancer, especially in developing countries, where it remains endemic [6].

Isolation technics of Mycobacterium tuberculosis are rarely contributory. The PPD is difficult to interpret, as it is often negative in immunocompetent subjects. Its positivity is in no ways pecific to active tuberculosis but simply testifies sensitization after prior contact with MT. Moreover, the 10-unit test is not very sensitive, with 15 to 60% in the literature [7].

Interferon-gamma release tests are often contributory with their sensitivity ranging from 40% in peritoneal forms to 100% in intestinal forms, for an overall specificity of around 80%. The measurement of adenosinedeaminase in ascites fluid seems to have an excellent specificity of 98% and a good sensitivity of 96%, a positive predictive value of 95%, and a negative predictive value of 98% [8].

Mycobacterium tuberculosis research through PCR can be useful for the diagnosis allowing the isolation of MT within 24 to 48 hours, with a sensitivity of 75 to 80% and a specificity of 85 to 95% [2].

CA125 is the marker for ovarian cancer of epithelial origin. This marker is increased in several benign pathologies. In the case of peritoneal tuberculosis, very high values.

Thus, CA125 is not a reliable marker in the differential diagnosis between peritoneal tuberculosis and ovarian cancer. Other studies have noted a decrease in the CA125 level correlated with the response to anti-tuberculosis treatment and indicate this as a monitoring marker under anti-bacillary treatment [9].

Imaging techniques such as ultrasound and computedtomography can sometimes guide the diagnosis of peritoneal tuberculosis. The signs found are

- A lowdensity of fluid effusion
- The absence of heterogeneous peritoneal macronodules,
- Respect for the diaphragmatic cupolas
- The high density of ascites,
- Intraperitoneal lymphadenopathy with hypo dense center corresponding to caseous necrosis,
- Peritoneal thickening with heterogeneous enhancement,
- Agglutination of the loops and omental thickeningwhich can most often benodular, pseudo-tumoral, or sometimes having the appearance of an "omental cake"

These elements have only a low orientation value [10].

Faced with the unavailability of the biological tests mentioned above and the non-specificity of imaging, the diagnosis of certainty arises after biopsy and pathophysiologicale examination.

The laparoscopic route is the means of choice and is the first intention in certain structures because it seems to be sufficient, safe, and less invasive for obtaining tissues for histologicalpurposes. Failing this, an exploratory laparotomy is performed.

Intraoperative discoveries consist of very evocative millimetric granulations of tuberculosis when they are 0.5 to 2 mm in diameter, whitish, of generally equal sizes, dotting the parietal and visceral peritoneum. In some cases, these granulations are of unequal sizes posing the diagnostic problem with peritoneal carcinomatosis, and peritoneal adhesions and inflammation of the peritoneal leaflet in second place [9].

In our case, these granulations were found with abundant ascites, omental thickening, and a left ovarian mass. The pathophysiological examination gives the definitive diagnosis, when giant cellular granulomas with caseous necrosis specific are seen on peritoneal samples, or when MT is found on histological sections.

In the case of our patient, the diagnosis was confirmed by histology and the ovarian mass was a hemorrhagic cyst of the corpus luteum.

The patient was put under specific anti-tuberculosis treatment with a quadruple therapy combining: Isoniazid, Rifampicin, Ethambutol, and Pyrazinamide for two months, then a maintenance treatment for four months with a daily dual therapy combining Isoniazid and Rifampicin. Started during hospitalization. The follow-up was favorable.

The patient gave her consent for the writing of this case report.

# CONCLUSION

Tuberculosis in its peritoneal form is still encountered in our regions. It poses a diagnostic problem due to the non-accessibility of specific examinations, and that of differential diagnosis with a pelvic tumor at the stage of peritoneal carcinomatosis when a pelvic mass is associated. The diagnosis of certainty is through histology after a biopsy of the peritoneal granulations, where a privileged place must be given to laparoscopy for the advantages it offers compared to laparotomy.

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