

PERITONEAL TUBERCULOSIS: A RARE MIMIC OF OVARIAN MALIGNANCY

Mr. Daliso Chetcuti, Mr. Alberto Vella, Dr. Rachel Hammett, Dr. Darko Babic, Ms. Joanna Ghigo, Mr. Matthew Mifsud



Introduction

Peritoneal tuberculosis is a rare form of extra-pulmonary tuberculosis. Additionally, it is a clinically challenging diagnosis to make and its low incidence in developed regions may aggravate this challenge. A delay in diagnosis and treatment of peritoneal tuberculosis may worsen clinical outcomes. Patients with peritoneal tuberculosis may be misdiagnosed as having ovarian cancer, as similarly it commonly presents with ascites, abdominal pain, and raised CA-125 levels. Moreover, ascites of tuberculosis is an exudative form like in malignancy. Thus symptoms, laboratory tests, and radiological investigations may be similar in the two conditions.

Case Report

46 year old female Filipino healthcare worker with no previous medical history underwent a laparoscopic right salpingo-oophorectomy, for a mature cystic teratoma, in July 2020. In her first surgery, there was no documentation of peritoneal tuberculosis, although histology showed granulomatous changes in the right fallopian tube.

Nine months later, the patient presented with a four month history of worsening abdominal discomfort and bloatedness. The patient was investigated with blood tests and radiological investigations. An elevated serum CA125 of 132miu/ml was measured and thus a gynaecology malignancy was thought to be the provisional diagnosis. Computed tomography of the thorax, abdomen, and pelvis revealed incidental right lung apical and pleural nodules, small tree in bud changes, abdominal free fluid, and diffuse peritoneal infiltration. Cytology from an ultrasound-guided percutaneous ascitic tap was inconclusive. In view of CT lung findings, a quantiferon test was performed in view of the patient's ethnicity. This turned out positive, and thus anti-tuberculosis treatment for latent tuberculosis was started.

With initial suspicion of a gynaecological malignancy, an elective laparotomy was performed with a total hysterectomy and left salpingo-oophorectomy. Operative findings included moderate ascites and multiple granulomatous nodules covering the visceral peritoneum of the uterus, left ovary, bowels and omentum. Histological examination was highly suspicious for miliary tuberculoid-type granulomas. Despite high suspicion of peritoneal TB at this stage, ascitic fluid sent for cytology, mycology, MC&S, and biochemistry was negative for mycobacteria. Only with retrospective PCR assay testing on tissue and ascitic fluid cell block from hysterectomy, was Mycobacterium tuberculosis DNA eventually detected. Infectious disease physicians subsequently followed the patient.



Figure I. Small bowel studded with granulomas



Figure II. Uterus, studded with granulomas (left), left ovary (top), omentum (right)

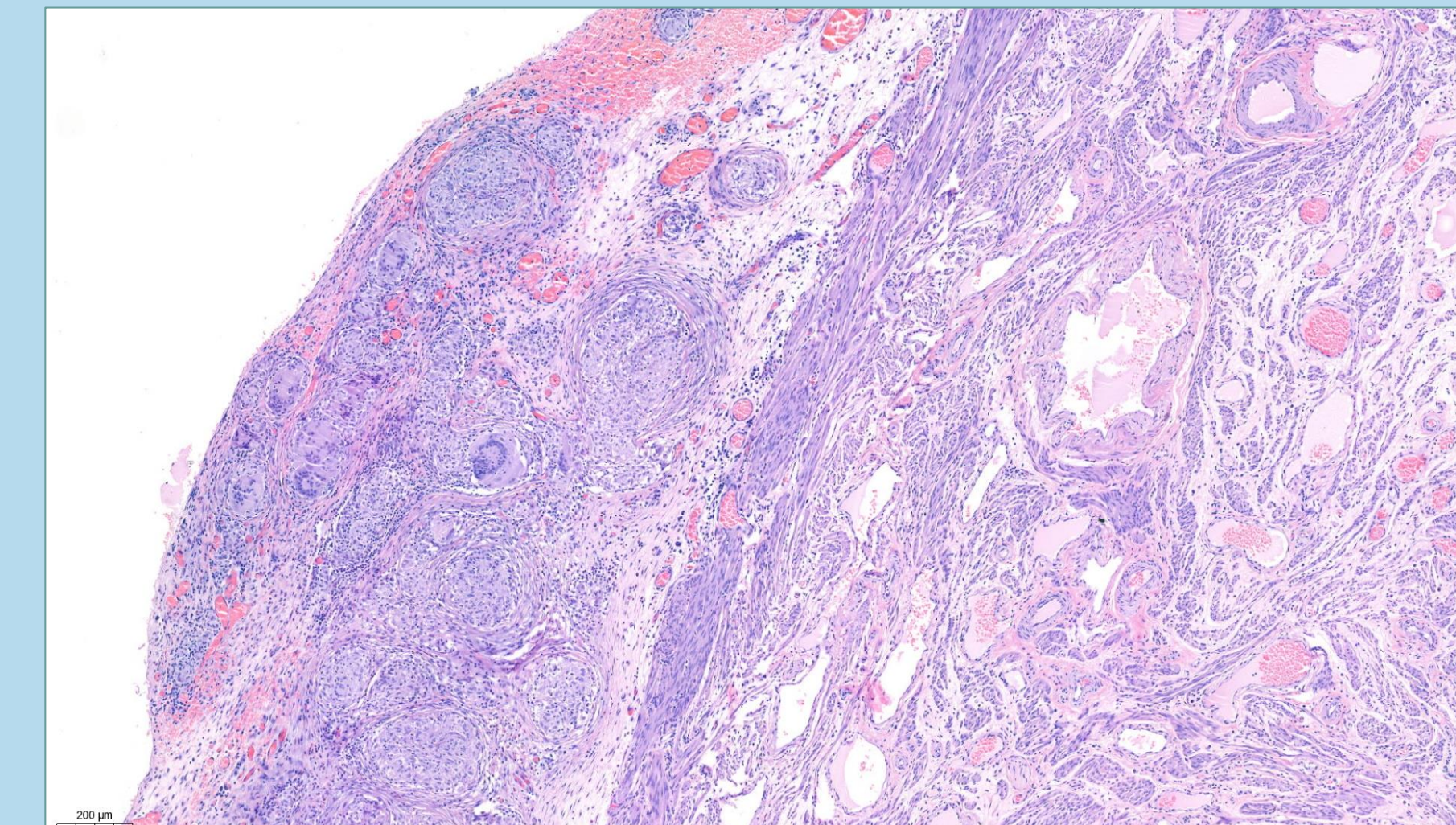


Figure III. Uterine body surface confluent but non-necrotizing granulomas (HEx20).

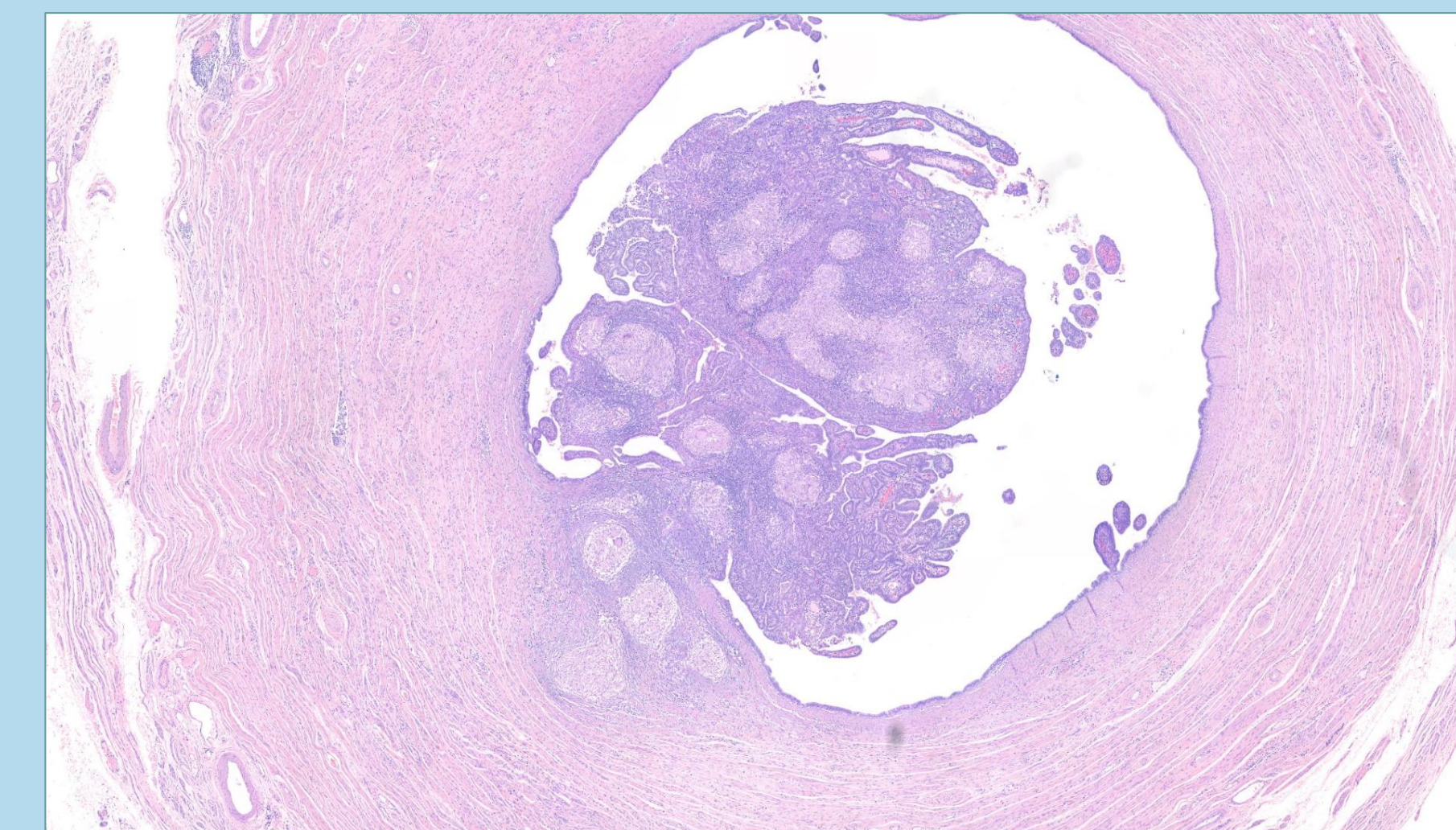


Figure IV. Granulomatous process involving fallopian tube mucosa (HEx20).

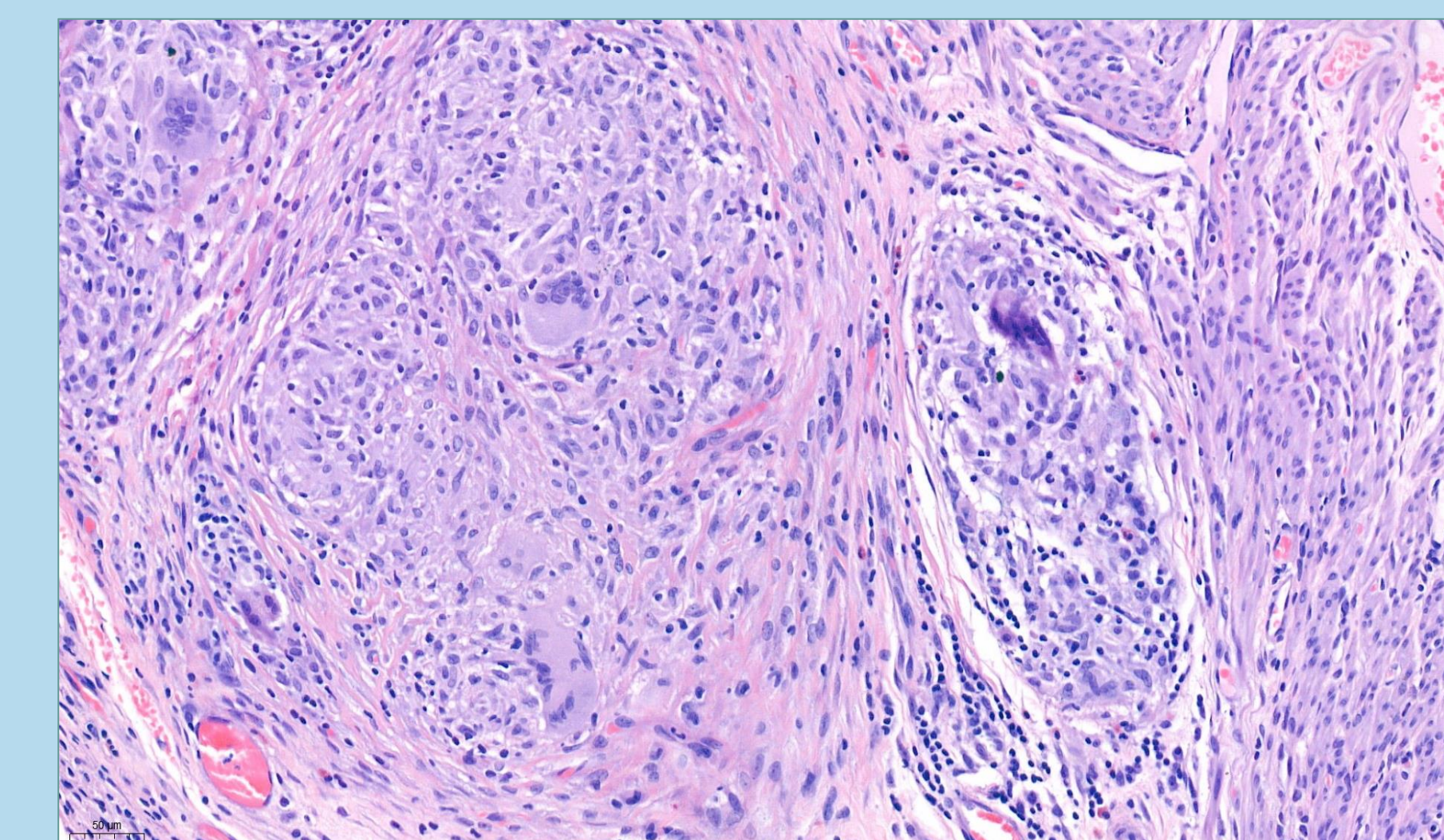


Figure V. Confluent non-necrotizing granuloma with multinucleated Langhans type giant cells, higher magnification (HEx200).

Discussion

Peritoneal tuberculosis accounts for 0.1-0.7% of tuberculosis cases. It is a rare form of tuberculosis, even more so in developed countries(1). Given the low prevalence of the disease added with the similarity in presentation to abdominal malignancy, peritoneal tuberculosis presents a great diagnostic challenge. As happened in this case, Acid-fast bacilli cultures can take several weeks for growth, and paracentesis fluid gives poor diagnostic yield (3%)(2). Whilst there are radiological similarities between peritoneal tuberculosis and carcinomatosis, histology can also offer diagnostic dilemmas(1). In our case, histologic examination revealed disseminated Langhans cell type granulomatosis with practically no caseous necrosis, suspicious for miliary tuberculosis. Atypical mycobacterial infection should also be considered in the differential diagnosis as well as very unlikely conditions like postoperative granulomatous peritonitis and sarcoidosis (3,4, 5).

For this reason, if the clinical suspicion for peritoneal tuberculosis is high, obtaining a peritoneal biopsy and performing a PCR assay should be the gold standard in diagnosing peritoneal TB(6).

Conclusion

Establishing a diagnosis of peritoneal tuberculosis requires a high index of clinical suspicion. It should be considered as a differential diagnosis in patients who present with symptoms suggestive of abdominal malignancy, especially younger patients and those from a Tuberculosis endemic region. This case highlights the diagnostic challenge associated with peritoneal tuberculosis and the importance of the multi-disciplinary approach in reaching an accurate diagnosis.

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