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PHOTO QUIZ

Peritonitis

N. Vieleers, S.H.A. Peters

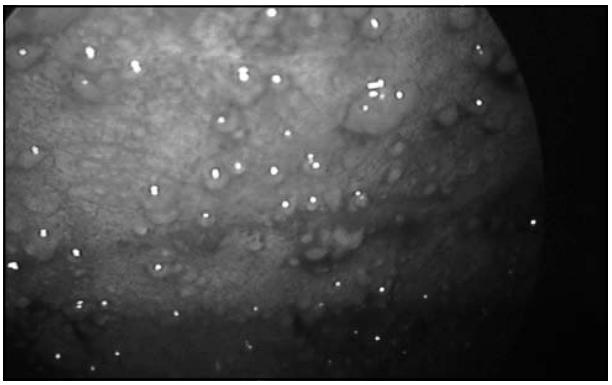
Department of Internal Medicine, Flevoziekenhuis, Hospitaalweg 1, 1315 RA Almere, the Netherlands

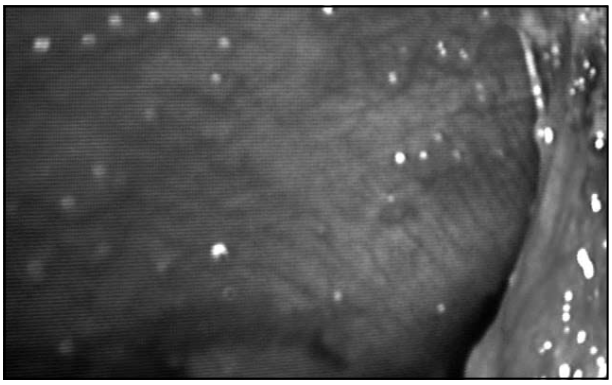
CASE REPORT

A 35-year-old North African man without a previous medical history was admitted with abdominal discomfort. On examination the patient was not acutely ill. His temperature was normal. Lymphadenopathy was absent. Tense ascites was evident but there were no stigmata of chronic liver disease.
Extensive laboratory testing only revealed a C-reactive protein of 93 mg/l and an erythrocyte sedimentation rate of 51 mm. Haematological and biochemical tests were unremarkable. Especially the liver function and cholestatic parameters were within the normal limits. HAV-IgM, HbsAg, anti-HBc and anti-HCV were all negative.
Chest X-ray was normal. Abdominal ultrasound confirmed the ascites, but revealed no other abnormality.
As differential diagnosis we thought of hepatic vein obstruction, nonhepatic causes of ascites and intra-abdominal disorders. There was no reason to consider alcoholic or viral liver disease. In order to obtain ascitic fluid we performed a percutaneous aspiration. On analysis, yellow clear ascites revealed a leucocyte count of 2.1 x 10*9/l with 70% lymphocytes. Albumin 30 g/l, serum albumin-ascites gradient (SAAG) was 3 g/l. Cytology was negative and microscopy revealed no acid-fast bacilli (Ziehl-Neelsen stain). A polymerase chain reaction (PCR) on *Mycobacterium tuberculosis* complex in the ascitic material was negative.
In the meantime a computed tomographic (CT) abdominal scan with intravenous contrast was carried out with remarkable contrast staining of the peritoneum. The abdominal organs, vessels and intra- and extrahepatic bile ducts were normal.
A diagnostic laparoscopy was performed, which revealed typical peritoneal nodules (*figures*).

WHAT IS YOUR DIAGNOSIS?

See page 85 for the answer to this photo quiz.





ANSWER TO PHOTO QUIZ (ON PAGE 82)

PERITONITIS

DIAGNOSIS

A diagnostic laparoscopy was carried out because the results so far warranted considering tuberculous peritonitis in our differential diagnosis. Culture growth of *Mycobacterium tuberculosis* of ascites or peritoneal biopsy is the gold standard test. Polymerase chain reaction (PCR) in the biopsy material of the typical nodules was positive and on microscopy a granulomatous inflammation with necrosis was seen, compatible with tuberculosis. Ziehl-Neelsen staining and auramine tests were negative. Later on the culture test confirmed *Mycobacterium tuberculosis* disease with a normal antibacterial resistance pattern.
Considering the laparoscopic findings and the laboratory results we immediately started a six-month course of first-line antituberculous drugs: isoniazid, rifampicin, ethambutol and pyrazinamide. There was a full recovery during follow-up in the outpatient clinic. No side effects were observed. The local health service was helpful in watching over drug compliance.

REMARKS

The symptoms and signs of peritoneal tuberculosis are non-specific, and unless a high index of suspicion is maintained, the diagnosis can be missed or delayed resulting in increased morbidity and mortality.[1] Laparoscopy with directed biopsy is currently the best way to make a rapid specific diagnosis. A PCR on *Mycobacterium tuberculosis* complex can be carried out, with a result within one day. Other methods to demonstrate the acid-fast bacilli are Ziehl-Neelsen staining or the auramine test. In case of peritoneal tuberculosis the chance of a positive auramine or Ziehl-Neelsen test in ascitic material is only 10% and culture growth is falsely negative in 70% of the cases. It is therefore essential to take a peritoneal biopsy for culture.[2]
Laparoscopy and peritoneal biopsy is a safe procedure and has many advantages. In case of tuberculosis the typical peritoneal adhesions and the whitish caseating granulomatous inflammation i.e. nodules or tubercles are seen.[3] It enables targeted tissue biopsy specimens to be obtained from the peritoneum, thus allowing a rapid diagnosis, while other conditions, such as peritoneal lymphoma and carcinomatosis, are excluded. Laparotomy, which is associated with a mortality of 3 to 12% in patients with tuberculous peritonitis, may also be avoided.[4]

REFERENCES

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3. Bhargava DK, Shriniwas, Chopra P, et al. Peritoneal tuberculosis: laparoscopic patterns and its diagnostic accuracy. Am J Gastroenterol 1992;87:109-12.
4. Marshall JB. Tuberculosis of the gastrointestinal tract and peritoneum. Am J Gastroenterol 1993;88:989-99.