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A rare case of sclerosing encapsulating peritonitis secondary to tuberculosis

Nirupam Konwar Baishya[1]

[1]*Department of Radiology, Fakhruddin Ali Ahmed Medical College & Hospital, Barpeta, India*

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Corresponding author:
Nirupam Konwar Baishya.
E-mail: nirupamb5678@gmail.com.
ORCID: 0009-0002-2713-9208.

Abstract

Sclerosing encapsulating peritonitis is a relatively rare, potentially life-threatening condition that causes intestinal loops to become encapsulated as a fibro-collagen cocoon. Despite advances in treatment, mortality is high. It shows vague clinical signs and is therefore difficult to diagnose clinically. Abdominal Contrast Enhanced CT (CECT) is an excellent modality for diagnosing the condition, for assessing its complications such as perforation, and for guiding the treatment approach to the condition. This case report highlights a rare case of sclerosing encapsulating peritonitis in a young adult secondary to tuberculosis. Although the most common secondary cause of SPE is peritoneal dialysis, consideration of tuberculosis as a cause of such a condition is very important especially in the Indian context.

Keywords: Sclerosing encapsulating peritonitis, CECT abdomen, tuberculosis.

Introduction

SEP is a chronic inflammatory disease that begins as low-grade peritonitis that progresses to sclerosis and membrane formation, eventually forming cocoons. Encapsulation takes place in the form of a membrane made of fibro-collagen [1]. Overall, SEP is more common in men [2]. There are two forms of SEP – primary and secondary. The primary type is generally idiopathic while secondary SEP can occur due to peritoneal dialysis, tuberculosis, sarcoidosis, cirrhosis [3]. The pathogenesis of SEP involves cytokines and fibroblasts in the formation of the fibro-collagen membrane.

Case presentation

A 22-year-old woman presented to the surgical department with abdominal distension and pain since the last 20 days and reduced stool since the last 10 days. She had a mild fever for 10 days. A general examination revealed pallor with a temperature of 100°F. A routine blood test (complete blood count) showed – increase in total leukocyte count, reduced hemoglobin, high ESR. Mantoux test was positive.

Abdominal ultrasound examination was recommended as subacute intestinal obstruction was suspected. Her ultrasound revealed a loculated fluid collection with intraperitoneal internal septations [Fig 1]. Visualized bowel loops were of normal caliber. To find out the cause, a diagnostic evaluation of ascitic fluid was performed. Ascitic fluid analysis revealed high ADA levels and leukocytosis.

She was further evaluated using CECT of the abdomen. CECT showed loculated septate ascites with clustering of small bowel loops toward the center of the abdominal cavity with a surrounding envelope with marked continuous enhancement [Fig 2 & Fig 3]. Several prominent peripherally enhancing necrotic mesenteric lymph nodes were noted.

Based on clinical, laboratory and radiological parameters, a diagnosis of SEP secondary to tuberculosis was made.

The patient was managed conservatively with recommended fluid intake, nutrition and started on anti-tubercular therapy. The patient showed an improvement in symptoms and general condition on conservative therapy. The patient was further advised for a follow up CECT scan abdomen after 6 months.

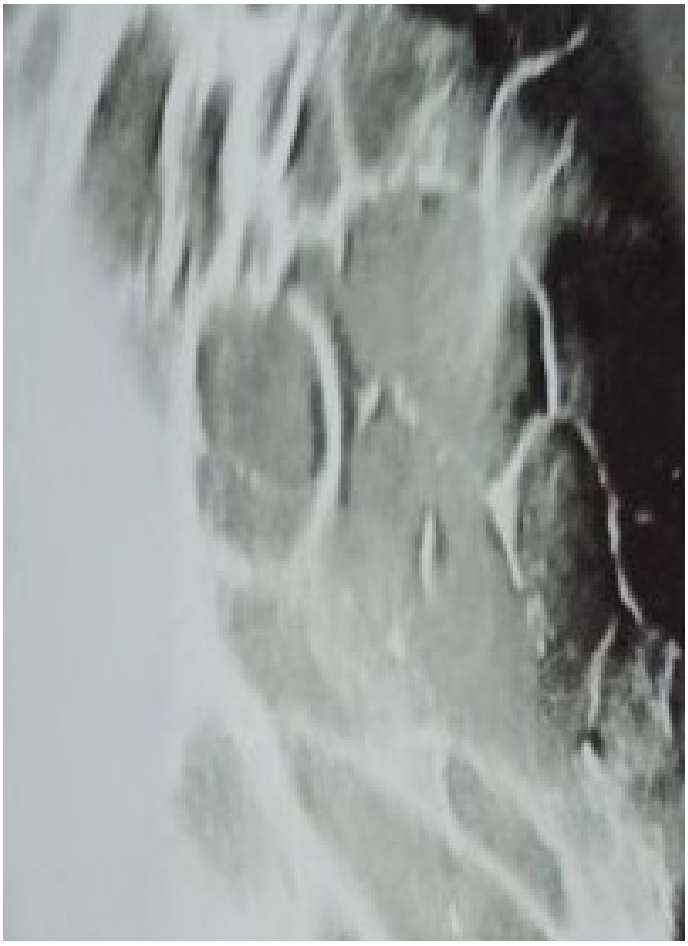

Figure 1 – Ultrasound abdomen showing loculated ascites with intraperitoneal strands

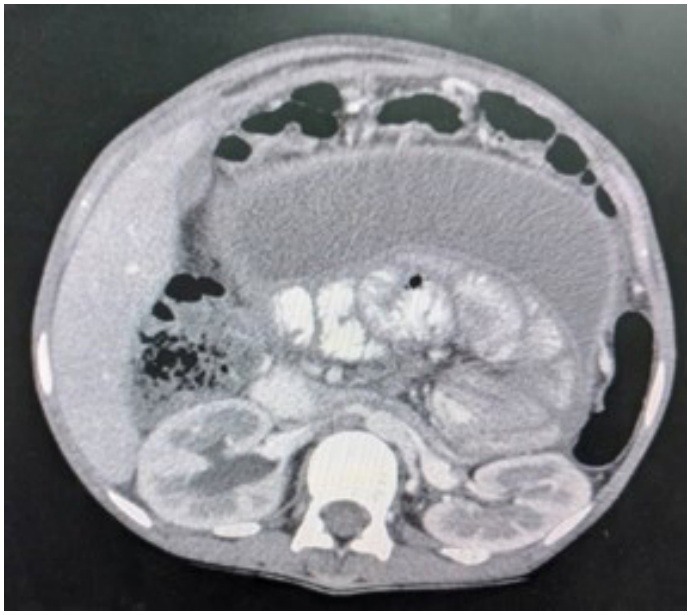

Figure 2 – Axial CECT abdomen showing loculated ascites with clustered bowel loops in the center surrounded by a membrane

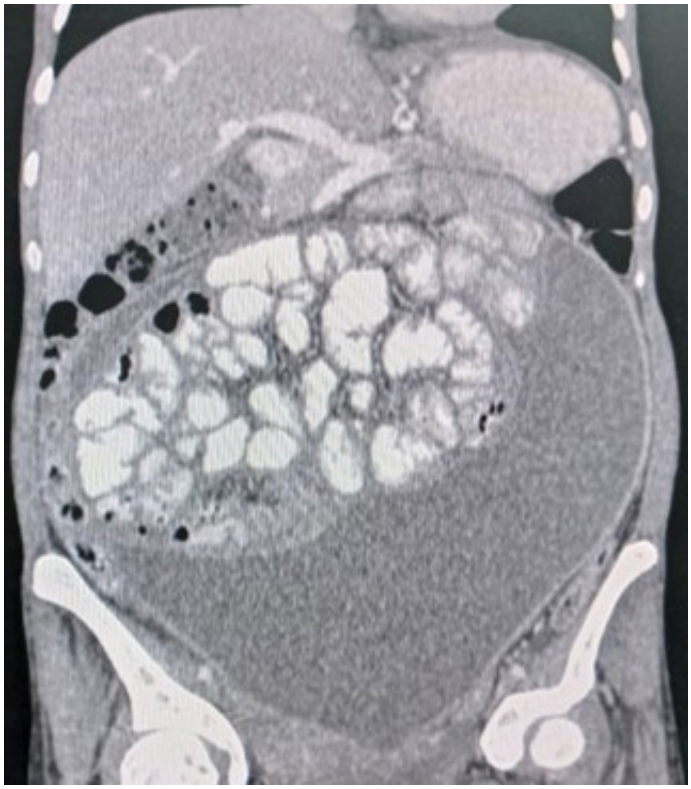

Figure 3 – Coronal CECT abdomen showing loculated ascites with clustered bowel loops in the center surrounded by a membrane

Discussion

SEP generally presents with signs of intestinal obstruction such as pain, nausea, vomiting, and inability to pass stool. The clinical picture is complex, making it difficult to diagnose. Clinicians generally rely on imaging for diagnosis as well as associated complications of the condition, such as perforation and peritonitis, which require immediate surgical intervention.

In terms of imaging, abdominal CECT is the best modality to diagnose the condition and its complications. The small intestine appears to cluster in the middle with a thick variably enhancing capsule [4]. Peritoneal thickening is somewhat

subjective. Other findings include loculated ascites, mesenteric stranding, peritoneal calcification [5]. The formation of complex ascites may indicate an underlying infection [5]. Extraluminal air indicates perforation. Intra-abdominal bleeding is also a feared complication [5].

Abdominal ultrasound may reveal ascites, clusters of intestinal loops with a surrounding membrane [6]. The "cauliflower sign" may be indicated by accumulated and adherent intestinal loops seen in the mid-abdomen during barium passage through the small intestine [7].

The treatment of this condition includes two options - conservative and surgical intervention. Conservative treatment includes decompression, nil orally and a special focus on maintaining the patient's nutrition [8]. Drugs such as tamoxifen, steroids, colchicine, azathioprine, and mycophenolic acid may be used [9]. The standard surgical approach involves excision of the membrane along with anastomosis, either with or without a protective enterostomy[1].

Conclusions

Despite advances in diagnosis and treatment, SEP secondary to tuberculosis, when symptomatic has a high mortality rate ranging between 50-60 percent [10]. The disease has a variable age distribution with unclear clinical symptoms. Diagnosis is largely dependent on CECT, which guides the approach to further management. Peritoneal carcinomatosis mimics SPE on CT, which is easily distinguished by a nodular or sheet pattern of peritoneal enhancement and the absence of a surrounding membrane. On the other hand, interbowel adhesions, omento-mesenteric stranding and necrotic nodes point to tuberculosis.

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References

1. Machado, N. O. (2016b). Sclerosing Encapsulating Peritonitis: review. Sultan Qaboos University Medical Journal, 16(2), e142-151. https://doi.org/10.18295/squmj.2016.16.02.003
2. Akbulut, S. (2015). Accurate definition and management of idiopathic sclerosing encapsulating peritonitis. World Journal of Gastroenterology, 21(2), 675. https://doi.org/10.3748/wjg.v21.i2.675
3. Kirshtein, B., Mizrahi, S., Sinelnikov, I., & Lantsberg, L. (2010). Abdominal cocoon as a rare cause of small bowel obstruction in an elderly man: Report of a case and review of the literature. Indian Journal of Surgery, 73(1), 73–75. https://doi.org/10.1007/s12262-010-0200-7
4. Tannoury, J., & Abboud, B. (2012). Idiopathic sclerosing encapsulating peritonitis: Abdominal cocoon. World Journal of Gastroenterology, 18(17), 1999. https://doi.org/10.3748/wjg.v18.i17.1999
5. Stuart, S., Stott, D. J., Goode, A., Cash, C., & Davenport, A. (2016). Can radiological assessment of abdominal computerized scans diagnose encapsulating peritoneal sclerosis in long-term peritoneal dialysis patients? Nephrology, 22(1), 19–24. https://doi.org/10.1111/nep.12718
6. Kaur, R., Chauhan, D., Dalal, U., & Khurana, U. (2011). Abdominal cocoon with small bowel obstruction: two case reports. Abdominal Radiology, 37(2), 275–278. https://doi.org/10.1007/s00261-011-9754-5
7. Shah, M. Y. S., Gedam, B., Sonarkar, R., & Gopinath, K. S. (2012). Abdominal cocoon: an unusual cause of subacute intestinal obstruction. Indian Journal of Surgery, 75(S1), 391–393. https://doi.org/10.1007/s12262-012-0582-9
8. Oran, E., Kudsi, O. Y., Besleyici, C., Ünsal, A., & Alış, H. (2015). Encapsulating peritoneal sclerosis as a late complication of peritoneal dialysis. Annals of Medicine and Surgery, 4(3), 205–207. https://doi.org/10.1016/j.amsu.2015.03.006
9. Cornelis, T., & Oreopoulos, D. G. (2010). Update on potential medical treatments for encapsulating peritoneal sclerosis; human and experimental data. International Urology and Nephrology, 43(1), 147–156. https://doi.org/10.1007/s11255-010-9744-5
10. Jain, P., & Nijhawan, S. (2008). Tuberculous Abdominal Cocoon: A case Report and Review of the literature. The American Journal of Gastroenterology, 103(6), 1577–1578. https://doi.org/10.1111/j.1572-0241.2008.01880_11.x.