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Hepatic abscesses after adhesiolysis



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ABSTRACT

INTRODUCTION: Hematogenous spread of bacteria from the bowel due to bacterial translocation has been postulated in animal and trauma studies. This case presents a patient with possible hematogenous bacterial spreading after acute laparotomy.

CASE PRESENTATION: A 57-year old woman was admitted with abdominal pain. A computed tomography showed mechanical small bowel obstruction. A laparotomy was performed showing no contamination, and no bowel resection was performed. The patient was not given any antibiotics during this time. The patient was re-admitted 24 h after discharge with fever, elevated white count and abdominal pain. A computed tomography showed newly developed intrahepatic abscesses. These were treated with antibiotics, and the patient was discharged with follow-up ultrasound showing diminished abscesses.

DISCUSSION: This case discusses the possible pathophysiology behind the development of intrahepatic abscesses after small bowel obstruction.

CONCLUSION: Febrilia and pain in upper right quadrant of the abdomen days after a simple operation for bowel obstruction could be caused by translocation of intestinal bacteria and subsequent formation of hepatic abscesses.

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1. Case story

A 57-year old woman with a 6 h anamnesis of cramp-like diffuse abdominal pain and minor vomiting was admitted to the department for surgical emergency at midnight. The patient was known with Type 1 diabetes and diabetic neuropathy but otherwise healthy. The only prior surgery was a laparoscopic tubal sterilization. She had no recent travels.

The patient was afebrile, pulse; blood pressure and saturation were stable and all within normal range. On clinical examination the abdomen was found with diffuse tenderness but no defense. The pain subsided after IV morphine. Basic biochemistry was normal, White Cell count and CRP was 4.5×10^9 and <3 mg/L respectively (Normal values $3, 3-8, 8 \times 10^9$ and <5 mg/L respectively). There was no sign of liver dysfunction.

The next morning (8 h post admission) the abdominal pain was more intense and severe. An abdominal computed tomography (CT) scan was performed showing small bowel obstruction. At the subsequent laparotomy small bowel strangulation approximately 1 m from the ligament of Treitz was found. The strangulation was only a few millimeters wide and was due to adhesions from previous surgery. The bowel was found viable without signs of incarceration, perforation or peritoneal contamination. The liver was normal

on palpation and inspection. The adhesions were resected and no further surgery was performed. No per- or post-operative antibiotics were initiated. The patient had an uncomplicated recovery, and was discharged 3 days later.

24 h after discharge, the patient was readmitted complaining of headache, dyspnea, fever and abdominal discomfort. The pulse was 90, temperature was 39.1°C , and saturation was 95%. Except for a direct tenderness located at the right upper abdominal quadrant the clinical examination was without objective findings. Biochemistry showed an elevated D-dimer (4.3 mg/L, normal values <0.5 mg/L) but no signs of liver dysfunction or infection (white cell count = 7.5×10^9 /L; CRP = 7 mg/L). A spiral CT of the chest was negative for pulmonary embolism.

The day after the readmission the patient's white cell count and CRP increased to 17.8×10^9 /L and 147 mg/L, respectively. Thus, treatment with I.V. Metronidazol 500 mg and Piperacillin/Tazocin 4 g/0.5 g was initiated on suspicion of post-operative infection. The patient became afebrile and felt better. Two days after initiation of antibiotics the patient complained of severe abdominal pain and cramping. An abdominal CT showed dilated intrahepatic bile ducts in the right hepatic lobe and several hepatic abscesses up to 5 cm (Fig. 1), which were not present on the initial CT scan. At ultra-sound the abscesses were not found accessible for puncture or drainage. Thus, conservative treatment with antibiotics was decided. The patient was discharged after 9 days and a follow-up ultrasound after additional 14 days found the abscesses diminished in size to

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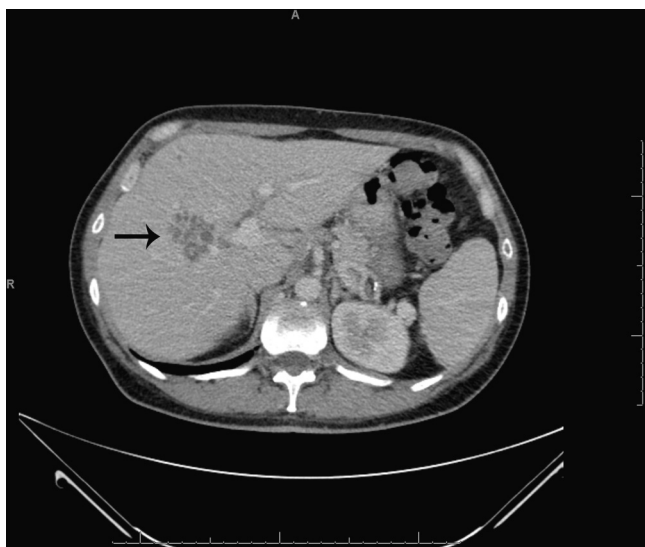


Fig. 1. Computed tomography showing the central hepatic abscesses (arrow)

1.2 cm. The patient was asymptomatic and was discharged without further follow-up.

2. Discussion

To our knowledge this is the first recorded case of a patient developing intrahepatic abscesses after an uncomplicated laparotomy due to small bowel obstruction without perforation.

Clinically significant bacterial translocation from the bowel to the surrounding mesenteric lymph glands and viscera has been proved in both animal and human models, especially if one of three basic conditions are present, namely: (1) disruption of the normal gastrointestinal flora, (2) intestinal manipulation or (3) impaired host immune defense [1–4]. Intestinal mucosal injury due to ischemia-reperfusion, as seen in prolonged mechanical small bowel obstruction, is hypothesized to lead to spreading of the translocated bacteria to the liver and spleen through the bloodstream [1,5]. A concomitant immunosuppression caused by the bacterial translocation [6] makes the patient even more susceptible to infections. Even though the connection between bowel obstruction and clinically significant bacterial translocation has been disputed [7,8], there has been case-reports of trauma patients [2] and animal studies [9] linking bowel obstruction with sepsis and/or bacterial translocation. The present patient both had a prolonged (>12 h) anamnesis with bowel obstruction and possible immunosuppression due to her Type 1 diabetes which both could have led to her developing intrahepatic abscesses. Nevertheless, it only can be speculated if a single-dose of prophylactic antibiotic would have changed outcome in this case.

In conclusion, Febrilia and pain in upper right quadrant of the abdomen days after a simple operation for bowel obstruction could be caused by translocation of intestinal bacteria and subsequent formation of hepatic abscesses. This article has been made in accordance with the CARE guidelines [10].

Conflicts of interest

No conflicts of interest.

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Authors contribution

Jacob Antonsen: literature review, writing of the article.
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