Case study

Large inflammatory tumor due to perforated Meckel′s diverticulum managed with extensive ileocoecal resection

Abstract

Meckel´s diverticulum is a remnant of the omphaloenteric duct and can cause different clinical symptoms, including Meckel´s diverticulitis and perforation. This case presented an unusual case of a Meckel´s diverticulitis with perforation and large inflammatory tumor involving the mesenterium of the loops of the terminal ileum, that was also in close contact with the coecum. An extensive bowel resection was neccessary to resolve the situation.

Key words: Meckel´s diverticulum, perforation, inflammatory tumor, extensive bowel resection.

Introduction

The Meckel´s diverticulum (MD) is a remnant of the omphaloenteric duct and it´s incidence is around 1-2%. Lifetime risk to become symptomatic is 4-6%. The possible complications associated with MD are inflammation, perforation, hemorrhage, intussusception, volvulus, intestinal obstruction and malignant transformation. Perforation of MD is rare and is reported in around 0.5% of symptomatic MD (1,2).The associated inflammatory tumor is extremely rare and unusual as desribed in our case. This report describes an unusual case of MD perforation associated with a large inflammatory tumor within the mesenterium involving loops of the terminal ileum and coecum, which was diagnosed during laparoscopy. An extensive bowel resection was needed to remove the MD with associated inflammatory tumor. To our knowledge this is the first such case described in the literautre.

Case presentation

A 37-year old male patient, otherwise healthy, was addmited to the emergency abdominal surgery department due to clinical and laboratory signs and symptoms of acute appendicitis.

He had elevated inflammatory parameters (Leukocytes $14.6x10^9$/L, C-reactive protein 76 mg/L). He had no previous surgey in the abdomen. The abdomen was painful on palpation in the right lower quadrant, without generalized peritoneal signs. An abdominal ultrasoud (US) was performed, which showed an inflammatory process in the right lower abdomen, a little fluid around the coecum. The appendix was not visible on the US. According to clinical picture and laboratory and US findings, we suspected on acute appendicitis. We decided for diagnostic laparoscopy. On laparoscopy we found mesenteric tumor in the terminal ileum mesenterium in close contact with coecum andloops of the terminal ileum. The appendix was not visible on laparoscopy. There were no signs of generalized peritonitis of even local inflammation. Near the tumor, the MD was seen. At the time of laparoscopy we weren′t sure, weather the tumor is benign or malignant. For that reason we decided for an extensive »en bloc« resection of the terminal ileum, tumor, coecum and mesenterium. We performed laparoscopic ileocoecal mobilization and partial division of the terminal ileum mesenterium with harmonic scalpel. When the bowel was enough mobilized, we performed a minilaparotomy and extracted the coecum and terminal ileum with tumor. Than we transected the colon and ileum with a linear stapler, transected the mesenterium with harmonic scalpel and removed the specimen (Figure 1). An extracorporeal ileo-ascending hand-sewn anastomosis was performed, abdominal drain was inserted and the minilaparotomy was closed. The patient′s recovery was unevenful and he was discharged from hospital on 5th postoperative day. The final patohistologic examination of the removed specimen revealed a perforated MD with an inflammatory tumor, without any malignant component.

Discussion

MD can be identified on preoperative imaging diagnostics or intraoperatively during open surgery or laparoscopy. Laparoscopic management of MD is a known and feasible method, which usually includes laparoscopy to identify MD, than minilaparotomy is perfomed to extract the ileum with MD. However, with the advent of laparoscoy, both extracorporeal and intracorporeal resection of MD may be performed (3). MD can be resected with stapling device, but usually a segmental resection with bowel anastomosis is performed to remove the possible ectopic tissue (4,5). A one of the technical limit during laparoscopic surgery is the presence of perforated MD with associated inflammatory tumor, such as in our case. Because of closely adherent loops of the terminal ileum, coecum and MD with the tumor, a simple tangential excision of MD with a stapling device or exteriorization of the loop of terminal ileum with MD was not possible. The other limtiation in our case was the dilema, weather to

continue with laparoscopic surgery or convert to open surgery, because the nature of the tumor was not known at the time of surgery. The tumour could be malignant and in that case oncological priciples of surgical resection should be considered. Because of that dilema we decided for an extensive »en bloc« resection considering oncological principles. Laparoscopic mobilization of the temnial ileum and coecum was performed with partial division of the mesenterium. The resection and anastomosis was completed extracorporeally through minilaparotomy. After the removal of the specimen, we have transected the tumor, which was very similar to neuroendocrine tumor (Figure 2), but final pathohistological examination revealed inflammatory tumor without any malignant component.

To conclude, an extensive resection was needed to remove the MD with associated inflammatory tumor. We had to remove 1 m of the terminal ileum, coecum and mesenterium of the terminal ileum. We considered oncological principles due to unknown nature of the tumor. According to our knowledge, we did not find any similar case described in the literature, where such extensive laparoscopically assisted resection was performed due to perforated MD.

References

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Figures

Figure 1: The resected specimen including the coecum, terminal ileum with MD and tumour.

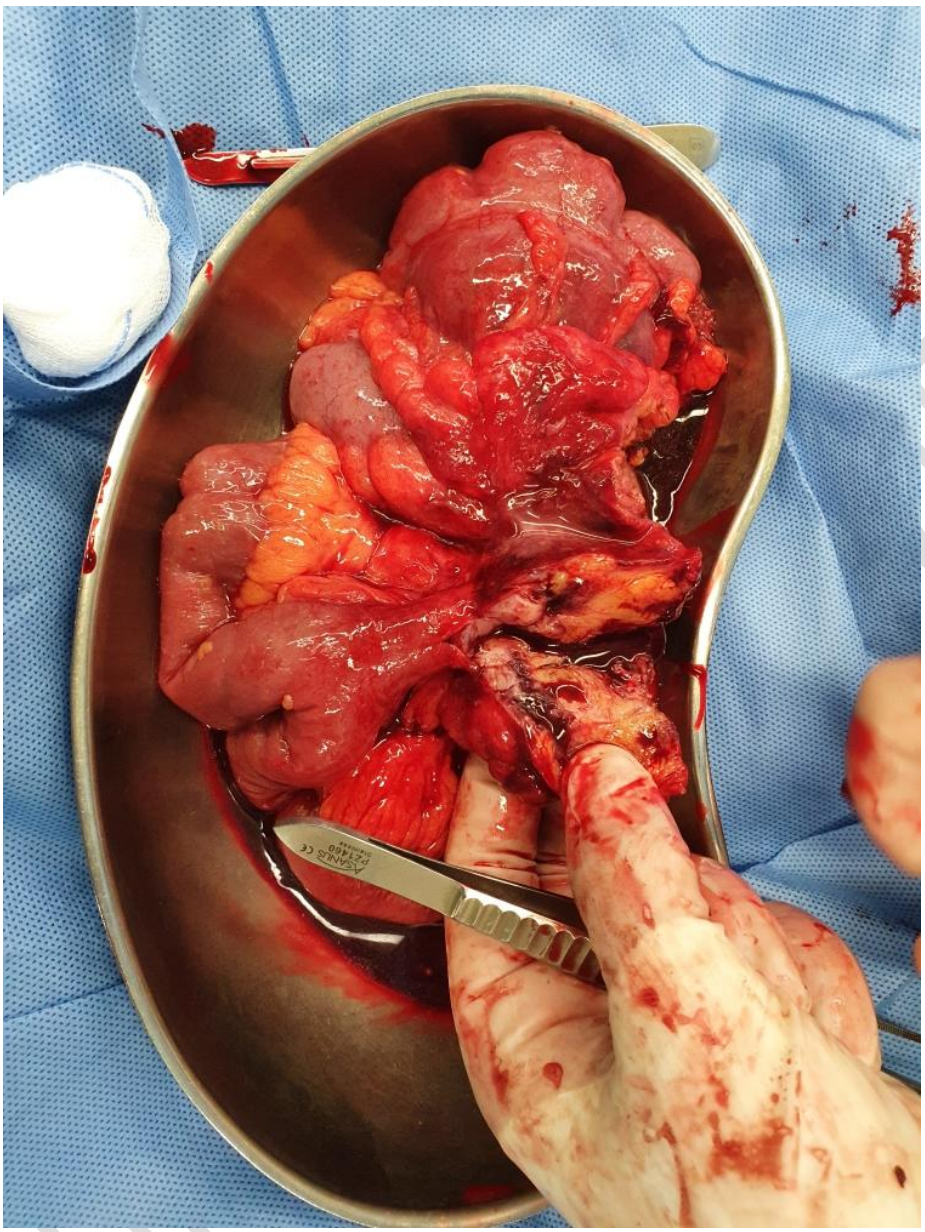

Figure 2: The transected tumor, which was a little similar to neuroendocrine tumor.