CASE REPORT

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Mechanical ileus following a ruptured abdominal aneurysm

Margaretha M Tjeenk Willink, Robert Haverlag, Robert C Minnee

ABSTRACT

Introduction: Many different factors are known to be able to cause an ileus. **Case Report:** A 72-year-old male underwent an endovascular procedure to treat his ruptured abdominal aneurysm. He developed a mechanical ileus five days after surgery. During re-operation an enormous retroperitoneal hematoma was revealed, causing the obstruction. **Conclusion:** Radiological re-evaluation can be useful and operative exploration must be considered in case of imminent perforation and/or after unsuccessful (conservative) therapy of an ileus. One should be aware that a retroperitoneal hematoma following a ruptured abdominal aneurysm can, in rare cases, cause a large bowel obstruction and therefore may need surgical intervention.

Keywords: Ileus, Abdominal aneurysm, Bowel obstruction, Retroperitoneal hematoma

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INTRODUCTION

Many different factors have been identified to be able to cause an ileus. Both a paralytic ileus and a mechanical ileus (i.e., bowel obstruction) are known complications after surgery [1]. Causes of a postoperative ileus include medication, metabolic, neurogenic, infectious or obstructive issues such as adhesions.

A large bowel obstruction due to a retroperitoneal hematoma following a ruptured abdominal aneurysm however is rare. To our knowledge no publication has ever described a similar case.

CASE REPORT

A 72-year-old male presented with pain in his lower back. The patient reported an acute onset with abdominal discomfort. His medical history consisted of total hip replacement on the left side, total knee replacement on the right side, transient ischemic attack and spinal disc herniation. He had no history of abdominal surgery or other medical problems. Furthermore, he was not taking any medication, and both social- and family history were of no additional value. The vital signs were normal. Physical examination revealed a painful pulsating mass in the abdomen. Laboratory findings, including C-reactive protein, leukocyte and hemoglobin levels were normal. A contrast-enhanced computed tomography (CT) scan showed a descending thoracic aortic dissection and a ruptured abdominal aorta aneurysm infrarenally. The patient was admitted to the hospital and underwent an emergency endovascular procedure to treat both the dissection and the ruptured aneurysm. Five days after the operation, he developed an ileus. He reported abdominal discomfort with nausea and vomiting. Bowel sounds were high pitched. His abdomen was distended with a painful right lower quadrant during palpation. Laboratory studies included (normal adult range): hemoglobin 6.3

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g/dL (8.5 – 11.0 g/dL), leucocytes $17.0 \times 10^9/L$ (4 to 10), thrombocytes $359 \times 10^9/L$ (150 to 400), and C-reactive protein (CRP) 223 mg/L (<10). Plain abdominal X-ray showed a dilated cecum suspected of a volvulus (Figure 1). A colonoscopy was performed showing only fecal contamination of the colon, which was treated with enema's. A computed tomography scan of the abdomen was performed which confirmed distension of the cecum without showing a possible cause. Due to insufficient effect after conservative treatment a laparotomy was performed 12 days after the initial operation, during which a large retroperitoneal hematoma causing a mechanical obstruction by compressing the large bowel, was revealed. The cecum was distended to a diameter of ± 15 cm. No gangrene was seen and the ileocecal valve was competent. However, due to an imminent perforation of the cecum based on a large serosal tear, an ileocecal resection had to be done, leaving the patient with an ileostomy (Figure 2).

Patient was discharged without any additional complications.

Figure 2: Distended bowel during laparotomy.

Figure 1: X-ray showing distended bowel.

DISCUSSION

This is the first publication reporting a large bowel obstruction due to a retroperitoneal hematoma, following endovascular repair of a ruptured abdominal aneurysm.

Politoske described a case of a ruptured abdominal aneurysm presenting as an obstruction of the left colon [2]. Duodenal and small bowel obstructions have been seen more frequently after infrarenal aortic aneurysm repair [3]. The reported incidence of duodenal obstruction

ranges from less than 1–2.5% and is always located in the third or fourth part of the duodenum [4, 5]. Lord suggest that the obstruction is usually caused by perigraft collagenous adhesions and is probably less likely to occur if the mobilized duodenum is not replaced directly over the aorta during the resuturing of the retroperitoneum [6].

Both an ileus and mechanical bowel obstructions are known complications after surgery [1]. Malinzak et al. found that these gastrointestinal complications are seen with a similar frequency after endovascular aneurysm repair as after open aortic repair [7]. Especially, after large vascular procedures such as abdominal aortic aneurysm repair one must also consider ischemic colitis as a cause of postoperative abdominal discomfort [8].

A retroperitoneal hematoma, sometimes present after abdominal aneurysm repair, hardly ever requires surgery. In case it causes an ileus, usually due to peritoneal irritation [9], continuous nasogastric suction should be employed and total parenteral nutrition initiated. Radiological re-evaluation can be useful and operative exploration must be considered in case of possible obstruction, imminent perforation and/or after unsuccessful conservative therapy.

CONCLUSION

One should be aware that a retroperitoneal hematoma following a ruptured abdominal aneurysm can, in rare cases, cause a large bowel obstruction and therefore may need surgical intervention.

Author Contributions

Margaretha M Tjeenk Willink – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Robert Haverlag – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Robert C Minnee – Substantial contributions to conception and design, acquisition of data, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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