

Case Report

Atypical Small Bowel Obstruction Following Repair of Inguinal Hernia: A Case of Intestinal Stenosis of Garré

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Abstract

We here report an atypical case of small bowel obstruction ten days following repair of an inguinal hernia that had been recurrently reduced. A preoperative diagnosis of this rare intestinal stenosis of Garré is difficult, and was based on the clinical, operative and pathological findings. Forced reduction of a hernia is not recommended because of the risk of rendering its contents ischaemic with subsequent fibrotic stenosis, or reducing a strangulated bowel into the abdominal cavity with subsequent perforation and peritonitis.

Keywords: Hernia, forced reduction, fibrosis, intestinal stenosis

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Introduction

A benign stricture of the intestine is one of the rare intestinal complications seen in patients who habitually reduce their hernias or those reduced by medical practitioners (1,2,3,4,5,6,7). It is a small bowel stenosis secondary to acute ischaemia. It can follow preoperative reduction or operative reduction of an incarcerated, obstructed or strangulated hernia (8). Pre-operative diagnosis of intestinal stenosis of Garré is difficult and so this relatively rare but life-threatening surgical emergency should be kept in mind even with operative reduction of an apparently viable incarcerated, obstructed or strangulated bowel (1,2,3,4,5,6,7,8). We report a case of intestinal stenosis of Garré and also present a brief review of the literature.

Case Report

A 30-year-old male farmer was admitted semi-electively for repair of a left inguino-scrotal hernia which had been repeatedly self-reduced. He had an episode of a painful 'incarceration' of the hernia in the preceding week which was reduced under sedation by

the attending Physician at the emergency unit, on the basis that the patient could not afford an operation at the time. He had no relevant past medical or surgical history. He was a non smoker and as a farmer he lifts very heavy loads.

Under general anaesthesia, a left inguinal incision identified an indirect inguinal hernia. The sac was identified. The contents were already reduced and not inspected. The sac was isolated, ligated and cut. A modified Bassini repair was done. Post operative recovery was uneventful and he was discharged 3 days later.

A week after discharge, he was readmitted as an emergency with a sudden onset generalized abdominal pain associated with vomiting, abdominal distension and constipation. However, he passed flatus. Vital signs were normal. There were no signs of dehydration. There was neither a groin swelling nor tenderness as evidence of recurrence, and there was no peritonism. A tentative diagnosis of a sub-acute small bowel obstruction secondary to adhesions was made. Plain abdominal x-ray revealed multiple fluid levels on

the erect film and, full blood count was normal. He was managed conservatively with analgesia, nasogastric suction and intravenous fluids for 48 hours. The symptoms resolved and he was discharged after three days.

Five days after discharge, he was readmitted with severe colicky abdominal pain of increasing frequency (every 5 minutes), profuse vomiting soon after a feed and absolute constipation with no passage of flatus for two days. He had no fever but was moderately dehydrated. Vital signs were BP 120/76mmHg, pulse 86/min. The abdomen was centrally distended with visible peristalsis and hyperactive bowel sounds. There was mild generalized abdominal tenderness from the distension but no peritonism. There was no groin swelling. The rectum was empty on digital examination. The diagnosis of an unresolved small bowel obstruction was made for which he underwent an emergency laparotomy. Under general anaesthesia, a midline abdominal incision was made which revealed grossly distended small bowel loops. There were neither adhesions nor perforation. A stenosed segment of ileum about 30cm from the ileo-caecal junction with proximal dilated small intestine and a distally collapsed segment of ileum were observed. A resection of the stenosed segment and an end to end anastomosis was carried out. The specimen was sent for histopathological examination. The patient made an uneventful recovery and was discharged 10 days later. Histopathology revealed inflammatory lesions at the site of the stenosis but no malignancy nor other pathology seen. He had no further complications within two months of follow-up.

Discussion

The questions asked are: (1) What are the possible causes of intestinal obstruction after a good inguinal hernia repair? (2) What is the cause of the intestinal stenosis in this patient? (3) Should hernias be habitually reduced before surgery?

Benign fibrous stricture of the bowel following an episode of strangulation first appeared in the literature in 1784 (9). In 1892, Garré of Germany reviewed previous literature and coined the term 'intestinal stenosis' (9,10,11). This term has therefore been referred subsequently as the 'benign stenosis of Garré' following the reduction of a strangulated hernia. This ischaemic stricture can follow forceful reduction of an asymptomatic hernia, an incarcerated hernia (the contents being fixed in the sac because of their size or adhesions but bowel not strangulated or obstructed) or the inadvertent reduction of an obstructed or strangulated hernia. It can also still occur as a

complication with operative reduction of an obstructed/strangulated hernia even after observing viability (12). Accordingly, the involved segment is either resected or if circulation improves and the intestine begins to recover its normal appearance, it is replaced in the abdominal cavity, usually with complete recovery (13). The condition is probably due to either vasospasm or vaso-insufficiency within the strangulated loop, with resulting ischaemia. Although not sufficient to devitalize the bowel completely and permit perforation, this ischaemia is sufficient to cause marked fibrosis and later stricture, a process akin to the Volkmann's ischaemic contracture in the limb - a condition due to ischaemia and subsequent fibrosis (1,2). Intestinal mucosa is more vulnerable to ischaemia than the overlying seromuscular layer. The consequent mucosal ulcer heals by fibrosis causing an annular stenotic stricture of the small bowel that leads to small bowel obstruction (2,12). Rarely, the intestine perforates proximal to the stricture and the patient present with features of generalised peritonitis (7). Signs of subacute or acute intestinal obstruction occur days, weeks or months post surgical repair of the hernia depending on the degree of ischaemia (2). In the present case, the symptoms of intestinal stenosis of Garré developed 10 days after the repair of the inguinal hernia. A case of acute intestinal obstruction after a period of 15 months have been reported (7). The differential diagnosis would include post operative adhesions which should not be overlooked and in this part of the world tuberculosis of the ileum and the rare Crohn's disease.

Conservative management inevitably fails although it may give temporary relief as seen in this case (4,5,6,7,8,9). External hernia is still the commonest cause of intestinal obstruction in developing countries with strangulation rate of about 5% and 30% for inguinal and femoral hernia respectively (13). A benign Garré stenosis of the small bowel although uncommon especially as most hernias are repaired electively, is always a possible complication following repair of hernia (1,2,3,4,5,6,7). A predisposing factor for intestinal stenosis of Garré would be a delayed hernia repair with the increased risk of the local complications such as incarceration, obstruction or strangulation. The delay of hernia repair as a result of financial difficulties would also encourage self-reduction which predisposes ischaemia. The risk of developing intestinal stenosis of Garré is obviously greater following a reduction of a strangulated than an incarcerated or obstructed hernia; a femoral hernia than an inguinal hernia because of the tight femoral ring, and, with forced than an operative reduction (3,4,5,6,7,8). It is possible to forcefully push a hernia back through the abdominal wall, so apparently

reducing it, without actually pushing the contents out of the sac (reduction-en-masse) (14). If they were strangulated in the first position, they will still be strangulated in the second. It is, however, occasionally possible to reduce an obstructed hernia safely and relieve the obstruction but care is needed that the bowel is viable, the obstruction really relieved and the bowel not ruptured. The danger of reducing non-viable bowel must always be watched for. Clinically, the manual reduction of a hernia is aimed at diagnosis. It is not a therapeutic measure as it would recur almost immediately. Diagnosing a hernia by its spontaneous reduction on lying down is safer and more convenient to the patient than manual reduction (14). A patient with acute symptoms of a hernia which is irreducible or obstructed should have urgent surgery, and immediate surgery if strangulated, after prompt resuscitation (14,15). In most cases, direct approach to the hernia is appropriate. The incarcerated tissue may reduce under anaesthesia and it is unlikely, should this occur, there would be strangulation. It is debatable, therefore, whether a full laparotomy to inspect spontaneously reduced tissue from the hernia is indicated but the possibility that a gangrenous loop of bowel has dropped back into the abdominal cavity should always be kept in mind (14). This is usually readily apparent in the early postoperative period (15).

Conclusion

Habitual and/or forceful reduction of hernias by patients or physicians is not advisable as it may predispose an ischaemic insult to the bowel. A good inguinal hernia repair should always include a preliminary inspection of the contents of the hernia sac. The delay in hernia repair because of financial difficulties or poor resources in low income countries would encourage attempts at self-reduction. The benign intestinal stenosis of Garré, although uncommon, is still an important differential diagnosis for small bowel obstruction after hernia repair.

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