CASE REPORT

Elective Laparoscopic Repair after Colonoscopic Decompression for Incarcerated Morgagni Hernia

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Plain radiographs of an 88-year-old woman who had experienced vomiting and abdominal distention for 3 days revealed a severely obstructed ileus, and abdominopelvic computed tomography revealed an incarcerated Morgagni hernia. The endoscope was passed through the constrictions from the diaphragmatic indentations and a thin catheter was placed for decompression. The obstructive ileus regressed markedly after the procedure; the patient underwent elective laparoscopic repair of the hernia 1 week later. This is believed to be the first case of endoscopic preoperative decompression for an incarcerated Morgagni hernia. (*Gut and Liver* 2009;3:318-320)

Key Words: Hernia, Diaphragmatic; Decompression; Colonoscopy

INTRODUCTION

Incarcerated hernia frequently requires emergency surgery since it is associated with intestinal obstruction and ischemia. However, emergency surgery for intestinal obstruction has a high mortality and morbidity.^{1,2} Recently, we were able to perform elective laparoscopic repair of a Morgagni hernia causing obstructive ileus in a very elderly patient by preoperative colonoscopic placement of a transanal decompression tube. This is believed to be the first endoscopic preoperative decompression for incarcerated Morgagni hernia.

CASE REPORT

The patient was an 88-year-old woman who had experienced vomiting and abdominal distention for three days. Blood pressure was 100/80 mm Hg and pulse rate 90/min. There was diffuse abdominal tenderness on physical examination. Plain radiographs showed up an inverted U-shaped pocket of air in the lower mediastinum, and dilated bowel loops (Fig. 1). Abdominopelvic CT revealed an incarcerated transverse colonic loop through the diaphragm (Fig. 2). Emergency colonoscopy for decompression demonstrated two luminal constriction sites with

Fig. 1. Initial plain radiograph of the abdomen. Arrows indicate the diaphragmatic hernia.

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Fig. 2. Abdominal computed tomography revealing herniation of the transverse colon through the diaphragm and a severely dilated small intestine and proximal colon.

Fig. 4. Insertion of a catheter for decompression through the endoscope.

Fig. 3. Endoscopic view of the distal constriction.

Fig. 5. Plain abdominal radiograph taken 1 day after the decompression procedure.

convergence of mucosal folds at the transverse colon (Fig. 3); these were consistent with the diaphragmatic indentations of the incarcerated hernia seen by fluoroscopy. We were able to pass the endoscope (GIF-XQ240; Olympus Optical Co., Tokyo, Japan) through the constrictions with resistance and see the dilated large bowel proximal to the constrictions. However, the endoscope could not be advanced further because of the presence of a walking stick-shaped loop.

Transanal decompression by inserting an 18 Fr Levine tube over the guidewire after removing the endoscope failed since the tube could not be advanced beyond the

first constriction. Accordingly we placed a thinner catheter (ENBD-7-LIGUORY, 7 Fr, 250 cm; Cook Medical Inc., Winston-Salem, NC, USA), which is designed for nasal biliary drainage, through the working channel of the endoscope beyond the constrictions (Fig. 4). The catheter was irrigated periodically with normal saline to prevent obstruction, and the intestinal contents and gas were drained successfully. Follow up abdominal radiograph the next day demonstrated marked regression of the obstructive ileus (Fig. 5) and the patient was able to undergo elective laparoscopic repair of the hernia after a week.

Laparoscopy revealed omental herniation restricted to

the anteromedial portion of the left diaphragm, and integrity of the bowel. The omentum was reduced into the abdomen, the hernia sac was excised, and the defect was repaired with a 5×6 cm mesh patch (Proceed Surgical Mesh, Ethicon Inc., Somerville, NJ, USA). The patient was discharged without complication three days after the operation.

DISCUSSION

Morgagni hernia is a diaphragmatic hernia that accounts for 3% of total intestinal obstructions.³ Repair can be performed either by transthoracic or transabdominal approach, and good results with laparoscopic transabdominal repair have been reported recently.^{3,4} Colostomy (or ileostomy), followed by a second operation for its repair, is performed in many cases of colonic obstruction since primary anastomosis is not always feasible.⁵ However, we were able to safely perform one-step elective laparoscopic repair for the patient with advanced age by endoscopic decompression; this procedure relieved the symptoms of obstruction, led to medical recovery and a favorable bowel preparation.

Drainage was successful even though we could place only a thin catheter beyond the constrictions. In fact, catheters of small diameter have the great advantage that they can be positioned through the endoscope. Drainage can be effective in spite of the narrow lumen of the catheter if it is prevented from causing obstruction by, for example, periodic irrigation. Thus, when it is difficult to position a transanal decompression tube of large diameter

by the Seldinger technique, insertion of a catheter of smaller diameter through the endoscope can be a useful option.

Finally, this case suggests that appropriate endoscopic placement of a decompression tube for incarcerated Morgagni hernia permits elective and less invasive laparoscopic repair in patients at greater risk from emergency surgery.

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