

Endoscopic fenestration combined with catheterization in the treatment of a giant colonic fecalith causing bowel obstruction: a case report

Endoskopische Fenestration in Kombination mit Katheterisierung bei der Behandlung eines riesigen Kolonfäkalits, der einen Darmverschluss verursacht: Ein Fallbericht



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ABSTRACT

Obstruction of the colon caused by a fecalith is not a rare condition, but endoscopic attempts at removal of the fecalith are

often unsuccessful because of the size of the fecalith and its extremely hard stone-like consistency. We report a case of bowel obstruction of over two weeks' duration caused by a giant colonic fecalith. Conservative treatments including insertion of a gastric tube and enemas failed to resolve the obstruction. After an initial unsuccessful attempt at fecalith removal by colonoscopy using a snare, we successfully resolved the bowel obstruction over the course of subsequent colonoscopies with endoscopic fenestration of the fecalith and placement of a transrectal gastric tube for directed instillation of the enema fluid, and we were able to avoid surgical intervention in this case.

ZUSAMMENFASSUNG

Obstruktion des Dickdarms durch ein Fäkalit ist keine seltene Erkrankung. Endoskopische Versuche, den Fäkalit zu entfernen, sind jedoch aufgrund der Größe des Fäkalits und seiner extrem harten steinartigen Konsistenz oft erfolglos. In diesem Beitrag berichten wir über einen über 2 Wochen andauernden Fall von Darmverschluss durch einen Dickdarmfäkalit. Eine konservative Behandlung, einschließlich Einführen einer Magensonde und Einlaufflüssigkeit, konnte die Obstruktion nicht lösen. Anfänglich gab es erfolglose Versuche, den Fäkalit durch Darmspiegelung mithilfe einer Schlinge zu entfernen. Wir haben jedoch den Darmverschluss im Laufe der nachfolgenden Koloskopien mit endoskopischer Fäkalitfenestration, Platzierung einer transrektalen Magensonde zur gezielten Instillation der Einlaufflüssigkeit erfolgreich behoben und konnten in diesem Fall einen chirurgischen Eingriff vermeiden.

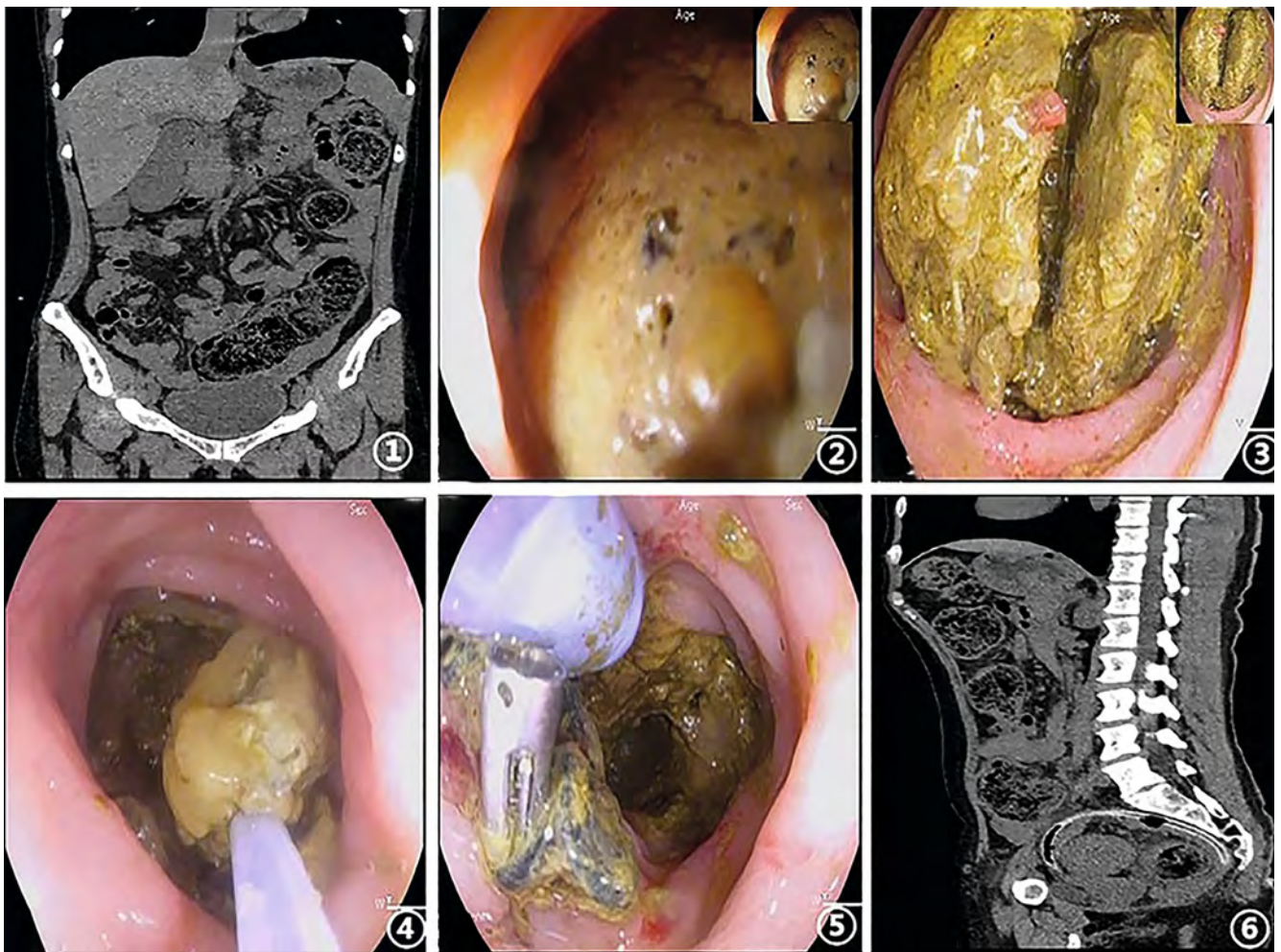
Introduction

Fecalith obstruction of the colon is not rare, and successful endoscopic treatments can avoid surgical intervention. However, endoscopic attempts at removal of the fecalith are often unsuccessful because of its size and its extremely hard stone-like consistency [1]. We herein report the case of a new technique of endoscopic treatment using a snare to fenestrate the fecalith and allow placement of a transrectal gastric tube for directed instillation of the enema fluid.

Case Report

A 41-year-old woman was admitted presenting with abdominal pain and vomiting without defecation or flatus for over two weeks. She had a surgical history remarkable for a cesarean section and subsequent surgery for lysis of adhesions. The bowel sound counts were seven counts per minute. There was left low-

er-quadrant tenderness to palpation but no rebound pain or muscle tension. An abdominal CT scan showed a large amount of fecal material in the descending and sigmoid colon with obvious dilation of the proximal colon (► Fig. 1 (1)). The gastric tube aspirate only resulted in a small amount of clear gastric fluid after three days and was subsequently removed because of the patient's intolerance. Enemas using 800 mL of warm water were performed three times/day but resulted in only a small amount of fecal residues. Five days after admission, a colonoscopy was performed, which showed that the colon was tortuous and an immovable giant fecalith blocked the cavity of the sigmoid colon (► Fig. 1 (2)). Endoscopic removal was attempted using a snare. However, there was little space for snare placement between the giant fecalith and the colonic wall. The fecalith was so hard that the snare became deformed in shape and, after repeated attempts, only a very limited amount of fecal material was able to be removed. The endoscopic visualization was hampered by the accumulation of fecal material. The procedure was aborted after about two hours. A subsequent enema yielded only a small amount of fecal



► **Fig. 1** The process of treatment for a giant colonic fecalith causing bowel obstruction. (1) Abdominal CT scan showed a large amount of fecal residues in the descending and sigmoid colon with obvious dilation of the proximal colon; (2) An immovable giant fecalith blocked the sigmoid colon cavity; (3) Fenestration of the center of the fecalith; (4) After fenestration, a snare was used for attempt extraction of the fecalith; (5) A gastric tube was inserted and fixed by surgical suture and clips; (6) After the second colonoscopy, the abdominal CT scan showed that the gastric tube was located below the fecalith.

material, so a repeat endoscopic treatment was performed three days later. Given that the snare was unsuccessfully used to trap the fecalith on the first attempt, we modified the technique. The steel wire of the snare was retracted into the sheath, and the sheath tube itself was used to fenestrate the fecalith longitudinally in the middle line of fecalith. We then deployed the snare from the fecalith using the previously created fenestration tract (► **Fig. 1** (3)). After repeating the sequence of fenestration, snare insertion, and removal of fecal material, a significantly larger amount of fecal material was extracted compared to the previous attempt (► **Fig. 1** (4)). However, the residual fecalith was still unable to be moved. We then passed a gastric tube inserted just beside the fenestration, whose head was fixed by a No. 0 surgical suture and two clips (► **Fig. 1** (5)). The second procedure took two hours. The gastric tube placed during the colonoscopy was then used for instillation of fluid for an enema treatment. However, the gastric tube fell out one day later. It was replaced during a third colonoscopy procedure and secured using a single clip and a No. 4 surgical suture (► **Fig. 1** (6)). After the re-insertion of the gastric tube, it was used for instillation of 200 mL warm water as an enema three times/day. A large amount of fecal material was evacuated over the following five days. The patient's symptoms improved, and the distention of the colon was alleviated. As the abdominal distension and pain were relieved, the patient was instructed to be given 20 mL of sesame oil orally, three times per day. Seven days after the second catheterization, the gastric tube fell out once again. A colonoscopy was performed and successfully reached the terminal ileum, and no tumor or residual fecalith was found. The patient had an uneventful subsequent recovery with no further episodes of bowel obstruction.

Discussion

Obstruction of the colon caused by a fecalith is not a rare condition, but endoscopic attempts at removal of the fecalith are often unsuccessful because of the size of the fecalith and its extremely hard stone-like consistency. In recent years, an increasing number of endoscopic treatments using techniques such as lithocrush baskets, intracorporeal pneumatic/ultrasound lithotripters, and electrohydraulic lithotripsy have been reported [2, 3, 4]. Some hospitals do not have access to these techniques. The dilation of the colon that is caused by bowel obstruction makes it difficult to perform laparoscopic surgery, which is a minimally invasive surgical method. Furthermore, when the fecalith is located in the sig-

moid colon, it may be difficult to perform a surgical anastomosis because of the higher risk of subsequent fistula formation. Successful endoscopic treatments can avoid surgical intervention, so we report the case of a new technique of endoscopic treatment using a snare to fenestrate the fecalith and allow placement of a gastric tube with several advantages. Endoscopic fenestration using a snare can be an effective treatment when initial extraction attempts using the snare fail. We recommend attempting to extract as much fecalith as possible, using the snare to morselize the fecalith if necessary. This should be accompanied with the use of enemas to further soften the fecalith. Secondly, the falling off of the gastric tube is related to the extremely thick fixed suture that affects the force of the clip on the tissue. Therefore, it is recommended that securing the gastric tube be performed with a thinner suture, or dental floss, compared to a thicker suture. With fenestration and catheterization, the enema liquid can reach and further penetrate into the fecalith more successfully. This is more efficacious and requires a smaller volume of fluid than a conventional enema (200 mL vs. 800 mL), which is more comfortable for the patient and more convenient for the staff. It is important to note that endoscopic treatment is only appropriate in cases without acute complete bowel obstruction or peritonitis. Because the overall treatment process has a relatively long duration, it is necessary to carefully monitor the patient's condition and rapidly respond to changes that may necessitate urgent surgical intervention.

Conflict of Interest

The authors declare that they have no conflict of interest.

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