Percutaneous endoscopic cecostomy: alternative solution in severe constipation – case report

Perkutana endoskopska cekostoma: alternativna možnost pri hudi obstipaciji – prikaz primera

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***Ključne besede**: perkutana endoskopska cekostomija, zaprtje, uvodna metoda*

ABSTRACT

Percutaneous endoscopic cecostomy (PEC) is a minimally invasive endoscopic procedure with the placement of the tube directly into the colon, that allows us therapeutic interventions. We present the case of a patient with tetraplegia, who suffered from chronic constipation. Chronic constipation is a common problem in patients with spinal and neuromuscular disorders. These patients are generally less favoured candidates for surgical interventions, so in patients where conservative measures fail, PEC represents a less invasive option for the improvement of symptoms.

IZVLEČEK

Perkutana endoskopska cekostomija (PEC) je minimalno invaziven endoskopski poseg z namestitvijo tubusa direktno v debelo črevo, kar nam omogoča terapevtske posege. Predstavljamo primer bolnika s tetraplegijo, ki je trpel za kroničnim zaprtjem. Kronično zaprtje je pogosta težava pri bolnikih s hrbteničnimi in živčno-mišičnimi obolenji. Ti bolniki so na splošno manj priljubljeni kandidati za kirurške posege, zato pri bolnikih, pri katerih konzervativni ukrepi ne uspejo, PEC predstavlja manj invazivno možnost za izboljšanje simptomov.

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INTRODUCTION

Chronic constipation is a frequent challenge in patients with spinal cord injuries, lesions, and neuromuscular disorders (1). The first step in the treatment of severe constipation is conservative management with dietary measures, discontinuation of medications that cause obstipation, correction of fluid and electrolyte disturbances, and use of laxatives. If symptoms persist, retrograde or antegrade lavage may be an option. Furthermore, the use of prokinetic agents and endoscopic decompression can also lead to resolution of symptoms, but results are often transient (2, 3, 4). Consequently, many patients need other therapeutic options, but since they usually have many comorbidities, they are at great risk for potential major complications following surgical interventions such as traditional surgical cecostomy. In these clinical settings, percutaneous endoscopic cecostomy (PEC) offers a less invasive treatment option, moreover, there is no risk of administering general anaesthesia (2, 5, 6).

Percutaneous endoscopic cecostomy was first described by Ponsky and colleagues in 1986 as an alternative to surgically or radiographically placed cecostomy (2, 7). Since then, the use of procedures has gradually increased. However, the procedure is still not widely used, most likely because of unfamiliarity with the procedure and its indications (2).

We report the case of a patient with severe constipation, whose symptoms were ultimately relieved by PEC placement.

CASE REPORT

A 56-year-old male with tetraplegia after a traumatic spinal cord injury in 2010 was admitted to our centre because of a urinary infection and evidence of prolonged constipation. He was administered intravenous antibiotics and showed a decrease in inflammatory parameters, nevertheless, his abdominal symptoms persisted. There were signs of abdominal distension and radiographic imaging (X-ray of the abdomen, abdominal CT) excluded mechanical obstruction or other organic pathology but showed meteorism and an excessively wide colon (Figure 1). During hospitalisation, extensive conservative measures were carried out (use of lactulose, prokinetic agents such as neostigmine, rectal tube insertion, repeated enemas), and several endoscopic decompressions were performed, but with a very limited effect. Surgical intervention was not feasible due to high perioperative risk assessment, therefore the decision for PEC placement was taken.

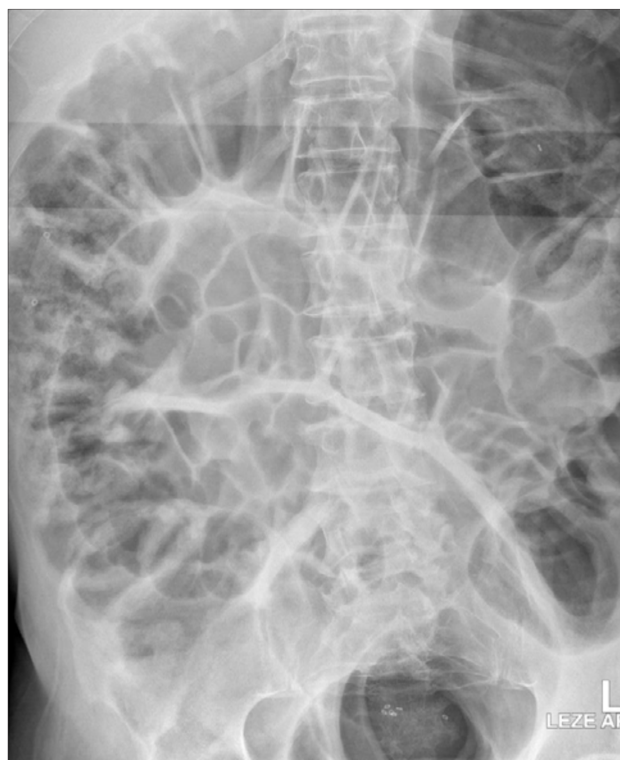

Figure 1. X-ray of the abdomen before the procedure showed meteorism and an excessively wide colon

The patient was given oral bowel preparation in a standard dose before the procedure and periprocedural antibiotic prophylaxis with intravenous metronidazole and gentamicin was administered. The procedure was conducted with conscious sedation with midazolam and fentanyl. The colonoscope was introduced into the right colon and then advanced to the cecum, with transillumination of the abdominal wall to identify a suitable puncture site. The correct position was verified by caecal indentation with direct digital pressure on the abdominal wall. The abdominal wall was prepared and anaesthetized in a sterile

fashion. Placement of four colopexy sutures, from the Pexact (Fresenius) gastrostomy system, was carried out under direct endoscopic vision. The centre of the colopexy site was punctured with an introducer needle and a thread was inserted (Figure 2). The thread was grasped with the snare and then withdrawn from the colon with the colonoscope. A standard percutaneous endoscopic gastrostomy tube (Freka Ch20) was then affixed to the thread and slowly pulled and trailed through the colon (pulled-through method), exiting the abdominal wall, where it was secured with external bolsters (Figure 3). The correct position was confirmed by reinsertion of the colonoscope.

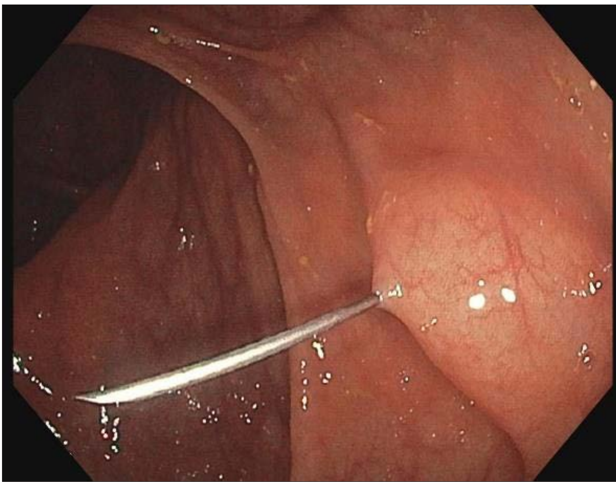

Figure 2. insertion of introducer needle

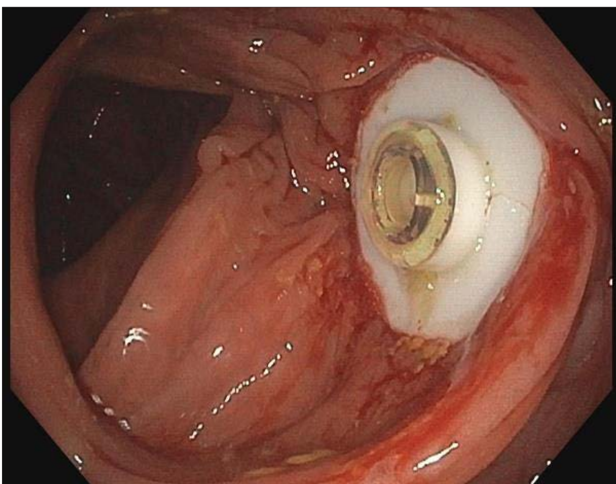

Figure 3. placement of percutaneous endoscopic tube

There were no adverse events after the procedure, and antibiotic prophylaxis was administered for a total of five days. Symptoms resolved quickly, and the patient was discharged to home care, with instructions to apply lactulose through the cecostomy tube for treatment of constipation.

DISCUSSION

PEC placement gives us another therapeutic option in patients with chronic constipation. However, there are many other indications for PEC placement, such as acute colonic pseudo-obstruction (Ogilvie's syndrome), chronic intestinal pseudo-obstruction, and for application of anterograde enemas in other colonic motility disorders (2, 3, 5). Contraindications for PEC placement are active colitis or ileocolitis, severe electrolyte disturbances, coagulopathy, anterior abdominal infection and sepsis, colonic ischemia, mechanical intestinal obstruction, and excessive abdominal wall fat with failure of transillumination (1, 8).

There was scarce information and guidelines other than case reports and retrospective case series on this topic. However, in 2020 the European Society of Gastrointestinal Endoscopy (ESGE) published guidelines for the endoscopic management of gastrointestinal motility disorders, which included patients with intractable constipation and Ogilvie's syndrome. Its main aim was to guide the technique and management of percutaneous endoscopic cecostomy tube placement. In patients with intractable constipation the recommendations state that before any endoscopic treatment, an extensive use of conservative treatment with medical therapies or retrograde enemas must take place. If the decision for PEC is made, the bowel must be properly prepared with diet and polyethylene glycol solution before the procedure. Antibiotic prophylaxis is recommended 1 hour before the procedure and for 3 days post-procedure given potential faecal contamination and should follow local protocol. There are three main techniques for percutaneous endoscopic cecostomy: the pull-through method, the introducer (push) method, and laparoscopically assisted percutaneous endoscopic cecostomy (LAPEC). In all techniques, ESGE recommends fixing the cecum to the abdominal wall to prevent leaks and infectious adverse events. If technically feasible the cecum is the pre-

ferred location for PEC placement (3). Albeit many advantages over surgery, this procedure is not without its risks. The complications following the procedure are usually minor, but serious complications, such as faecal peritonitis, may occur (2, 9). PEC is a viable treatment option, which should be reserved for selected patients after multidisciplinary assessment and should be performed by well-trained operators in tertiary referral centres (10).

CONCLUSION

PEC has been shown as a well-tolerated alternative for a selected group of patients with chronic constipation in which conservative treatment has failed or who are not candidates for surgical intervention.

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