

Case Report

Laparoscopic Repair of Ascending Colon Perforation Associated with a Foreign Body

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Laparoscopy is widely used as a diagnostic tool in the setting of an acute abdomen. We report on a 50-year-old male who suffered from right lower quadrant abdominal pain that proved by laparoscopy to be due to a toothpick perforating the ascending colon. The toothpick was removed, and simple closure of the ascending colon with laparoscopy was performed. The postoperative course was unremarkable in this case. We believe that laparoscopy is a powerful diagnostic and therapeutic tool for patients with acute abdominal pain, helping to avoid an unnecessary laparotomy. [*J Soc Colon Rectal Surgeon (Taiwan) 2002;13:143-146*]

Key Words

Colon perforation;
Foreign body;
Laparoscopy

Laparoscopy (LAPS) is fast becoming a useful diagnostic tool for patients with acute abdominal pain.¹ There are clear advantages for patients who undergo this minimally invasive procedure rather than submitting to open surgery.² Some emergency abdominal situations, such as appendicitis, Meckel's diverticulum, perforated ulcer, cholecystitis, ischemic bowel, and some female pelvic diseases, can easily be diagnosed and treated laparoscopically. Diagnostic noninvasive procedures, such as radiological studies, are not always conclusive. Furthermore, they are expensive and are not possible to perform in all hospital situations, 24 hours a day. LAPS is the only minimally invasive technique that can both establish an adequate diagnosis and treat the causative pathology simultaneously. The diagnostic accuracy of LAPS was 89-100%.¹² The accuracy of this approach is particularly evident if we consider the cases of pelvic disease (mostly gynecological). Herein we describe a case of ascending colon perforation by a toothpick that was

diagnosed and successfully treated laparoscopically in our surgical department.

Case Report

A 50-year-old man was admitted to the En-Chu-Kong Hospital with persistent right lower quadrant (RLQ) abdominal pain for 2 days. His past medical history showed that he had received an appendectomy at 38 years of age. Physical examination revealed a body temperature of 36.9 °C, blood pressure of 129/69 mmHg, and pulse rate of 74. The abdomen was distended with obvious RLQ tenderness and muscle guarding. Bowel sounds were hypoactive, and no abdominal mass was palpable. The white blood cell count was 12,900/ul; other laboratory values including blood chemistry and electrolytes were all within normal limits. Plain abdominal roentgenography showed normal findings.

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He underwent a laparoscopic examination under general anesthesia and tracheal intubation. Pneumoperitoneum was established at an intraabdominal pressure of 15 mmHg. Two working ports (10 and 5 mm) were set on the umbilicus and right lower quadrant of the abdomen, and the video port (for a 2 mm camera) was placed in the suprapubic area. Upon exploration of the abdominal cavity, we found that a toothpick had penetrated through the wall of the ascending colon and become fixed on the parietal peritoneum (Fig. 1). No obvious intra-abdominal abscess was identified in the pericecal area or on an ileal loop. The toothpick was removed, and the perforation hole was repaired with 2/0 interrupted polyglactin sutures (Vicryl) using the intracorporeal suture technique. Finally, a rubber drain tube was left in the Douglas pouch. The postoperative course was smooth. Oral intake was begun on postoperative day 2, and the patient was discharged on postoperative day 4.

Discussion

In recent years, laparoscopy has gained wide ac-

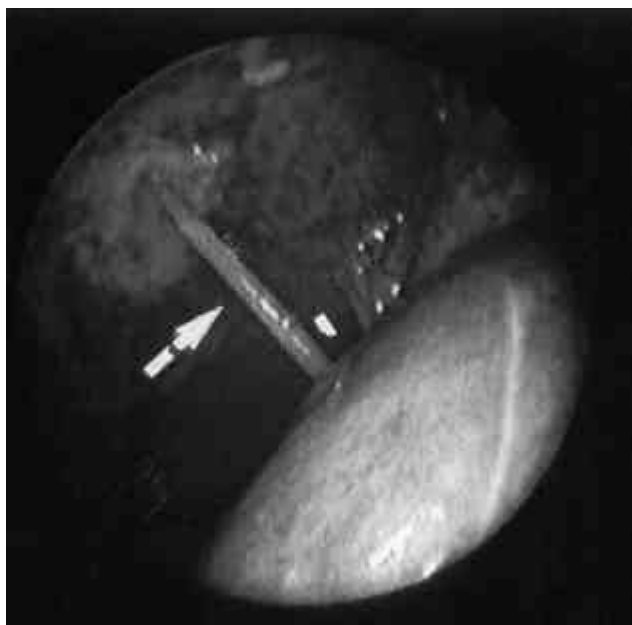


Fig. 1. Toothpick (ar row) which had penetrated through the wall of the ascending colon and become fixed on the parietal peritoneum.

ceptance as a diagnostic and therapeutic tool for patients presenting with acute abdominal pain³⁻⁵. The advantage of a laparoscopic approach is that it is possible to make a correct diagnosis of the causative pathology and prevent an unnecessary laparotomy. Other noninvasive diagnostic procedures, such as radiologic studies, are not always conclusive^{5,6}. In patients with peritonitis, the laparoscopic approach can provide a good visual field to access the entire abdominal cavity, including lavage and drainage if needed. Finally, it reduces the suffering of the patient due to the pain of the wound, and shortens the hospital stay.⁷

The use of laparoscopy for diagnosis and treatment of acute abdominal pain due to foreign body bowel perforation was reported by Christensen¹ and Iannelli,⁸ but both of them reported on fish bone perforation through the small bowel (one through Meckel's diverticulum and the other through the ileum). The case we report is the first patient who suffered from an ascending colon perforation due to a toothpick who received treatment under laparoscopy throughout the entire procedure.

The choice of simple closure of the ascending colon perforation in the absence of evident abscess or septic condition was safe. When considering primary repair of colon injuries, the important concerns are whether the repair will leak and the consequences of a leaking repair. The cumulative experience in the literature provides useful data to address these two concerns. According to the review data of the Curran,¹³ the overall leak rate in 2,627 primary repairs was 2.4%: 1.3% for 1,507 simple suture repairs and 5.7% for 335 cases of resection and anastomosis. Forty-two per cent of the published retrospective series reported no leaks at all. Current leak rates from elective colon surgery are between 1.6% and 3.4% (average 2.1%) for ileocolic or colocolic anastomosis, and 0% to 32% (average 4.6%) for colorectal anastomosis. The study concluded that the mortality and morbidity rates after primary colon repair is similar to those who received colostomy. Diverting colostomy is unnecessary if the peritoneal cavity is well irrigated and well drained.⁹⁻¹¹

In conclusion, laparoscopy is a safe and feasible procedure for diagnosis and treatment of patients with acute abdominal pain. It is necessary of a well-trained,

experienced laparoscopic surgeon to perform these procedures. We believe that laparoscopy should be used routinely in any emergency abdominal situation when the diagnosis is not clear.

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