

## Endoscopic closure of a rectal diverticulum perforation during a diagnostic colonoscopy

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### Introduction

Finding of rectal diverticula is particularly infrequent, with a frequency < 0.1% of cases of diverticulosis (1). The risk of colonic perforation ranges from 0.005% and 0.7% with differences between diagnostic and therapeutic procedures (2). Perforation of a rectal diverticulum during a colonoscopy has been described in only one report (3). Managements of endoscopic perforation vary from conservative treatment to surgical intervention with the majority of patients requiring laparotomy for repair the defect. Immediate closure of a perforation is mandatory to limit bacterial contamination and consequent sepsis. Endoscopic closure of an iatrogenic perforation smaller than 20 mm is performed both with Through-The-Scope (TTS) clipping-devices and Over-The-Scope Clips (OTSC) System. Both techniques are likely to be effective with similar success rates (93% and 89% respectively) (4). The most recent endoloop/clips technique, successfully used for the first time by Endo *et al.* (5) to close gastric perforations, in some reports has been documented to have satisfactory results in closing iatrogenic perforations (6). In this report, we describe a successful repair of a rectal perforation caused by the maneuver of retro-flexion of the colonoscope during a diagnostic colonoscopy by using the endoloop/clips technique.

### Case report

A 83-year-old male was referred to our Endoscopy Unit for a screening colonoscopy. During colonoscopy, two small rectal diverticula, located just above the third valve of Houston were immediately noted (Fig. 1). During the rectal retro-flexion maneuver, the instrument force on the rectal wall accidentally caused a perforation of one of rectal diverticula. The defect was immediately recognized and quickly closed using six rotating clips. An endoloop was placed grouping the six clips and tightened slowly to bring perforation edges closer and reinforce the closure. The patient immediately underwent an abdominal x-ray and an abdominal and pelvic TC scan revealing a pneumo-peritoneum with sub-hepatic free air (Fig. 2). The patient was promptly kept nothing by mouth with iv fluids, peripheral parenteral nutrition and large spectrum antibiotics. The patient experienced an ordinary recovery without complications. An abdominal and pelvic CT scan was repeated on post-colonoscopy day 7, showing resolution of radiological signs of perforation. Patient returned to an oral diet on day 8 and was finally discharged on day 10 without complaints.

### Discussion

In our case report, patient presented three rare conditions/events : rectal diverticula, an iatrogenic perforation



Fig. 1

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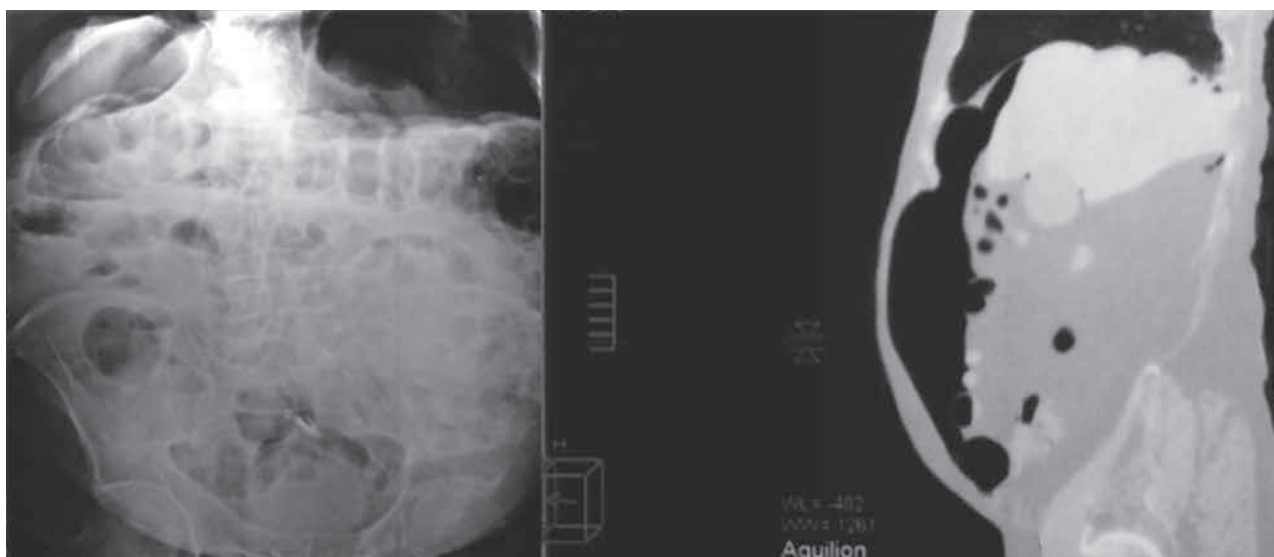


Fig. 2

during a diagnostic colonoscopy and the presence of a pneumo-peritoneum, maybe consequent to the site of perforation, the one third superior of rectum covered by peritoneum. During the procedure, the perforation was immediately recognized and closed by using TTS clips and endoloop. These endoscopic devices are available in the majority of Endoscopy Units all over the world and most endoscopists have a good training for its routinely use. The endoloop/clips technique resulted to be an effective, safe and cost-effective procedure to close an iatrogenic perforation. By a correct positioning of these devices on wall defects, surgery could be avoided in such cases in which clinical and laboratorial findings during recovery tend to improvement.

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