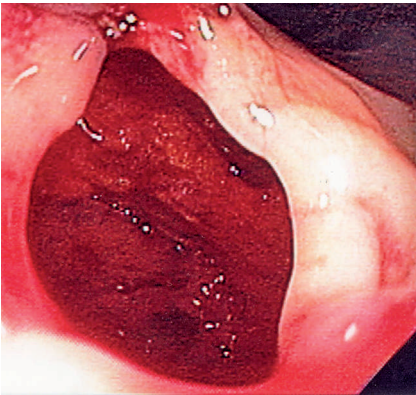
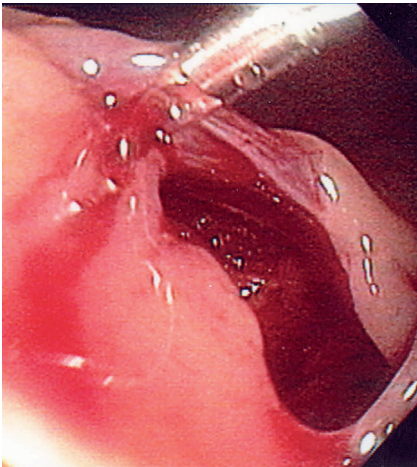


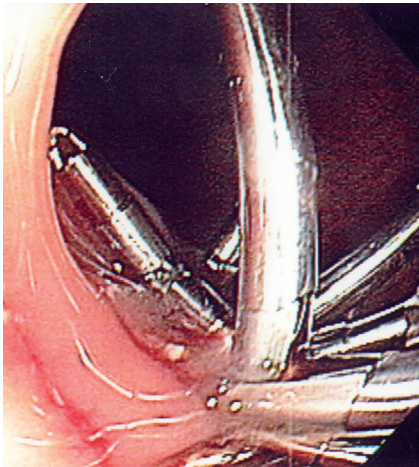
Perforation upon retroflexion:  
an endoscopic complication and repair



**Fig. 1** Forward view of the rectal perforation and bowel lumen (upper right corner).



**Fig. 2** Initiation of endoscopic repair of the perforation using endoclips, starting at the end of the perforation.



**Fig. 3** Complete closure of perforation using endoclips.

**Table 1** Details of case reports/series regarding rectal perforations upon retroflexion.

Reference	Patient age, years	Perforation size, cm	Distance of perforation from anal verge, cm	Location in relation to peritoneal reflection	Management	Length of hospital stay, days	Outcome
Chu et al. [1]	76	2	7	Below	Conservative with IV antibiotics	6	Favorable
Chu et al. [1]	54	3	8	Below	Conservative with IV antibiotics	21	Favorable
Chu et al. [1]	79	2	5	Below	Conservative with IV antibiotics	10	Favorable
Ahlawat et al. [2]	60	1–1.5	6–7	Below	Endoscopic repair with conservative management and IV antibiotics	3	Favorable
Bechtold et al., present case	73	2	10–12	Above	Endoscopic repair with conservative management and IV antibiotics	5	Favorable

Retroflexion in the rectum has been reported to cause perforation in a small number of cases [1,2]. Of these, only one case, in which the perforation occurred below the peritoneal reflection, was repaired endoscopically [2]. We report a case of perforation above the peritoneal reflection upon colonoscopy retroflexion with endoscopic closure in a healthy colon.

A 73-year-old man with a history of hypertension and coronary artery disease underwent a diagnostic colonoscopy for iron-deficiency anemia. The patient's physical exam and digital rectal exam were normal. The colonoscopy revealed sigmoid diverticulosis and two small polyps, which were removed. Retroflexion of the colonoscopy was performed.

Upon straightening the colonoscope, a 2-cm circular perforation near the rectosigmoid junction, approx. 10–12 cm from the anal verge, was visualized (● Fig. 1). Upon identification, ten endoscopic clips were placed sequentially from the ends of the perforation toward the center to close the perforation (● Fig. 2 and 3). Although the patient experienced a distended abdomen and mild epigastric abdominal pain, his vital signs were within normal parameters during and after the procedure. The patient was admitted to the hospital for 5 days and given nothing by mouth for about 48 hours and antibiotics. Two weeks after discharge, he continued to do well without complaints. Four cases of rectal perforation with retroflexion have been reported, with this

case representing the fifth (● Table 1) [1,2]. Surgery or endoscopic closure with observation are the therapeutic options for such perforations.

This case represents the second successful demonstration of endoscopic repair using endoclips for a perforation formed upon retroflexion, but the first case occurred above the peritoneal reflection. In addition, this case represents the largest retroflexion-induced perforation (2 cm) to be endoscopically closed. Although colonoscopy retroflexion in the rectum improves rectal visualization, the risk of perforation is apparent and should be considered.

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**M. L. Bechtold, H. T. Hammad, M. Arif, A. Choudhary, S. R. Puli, M. R. Antillon**  
Division of Gastroenterology and Hepatology, University of Missouri School of Medicine, Columbia, Missouri, USA

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### Corresponding author

**M. L. Bechtold, MD**

Division of Gastroenterology

Five Hospital Drive, CE405

Columbia

MO 65212

USA

Fax: +1-573-8844595

bechtoldm@health.missouri.edu