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CASE REPORT | COLON

# Polypectomy for Recurrent Inflammatory Cap Polyposis Combined with Argon Plasma Coagulation

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## ABSTRACT

A 15-year-old adolescent boy presented with chronic constipation, difficulty in defecation, and episodic bloody stools. A rectal mass lesion was digitally palpated. Colonoscopy showed a large circumferential polypoid lesion of the mid-rectum. Snare polypectomy was performed, and histopathology confirmed a diagnosis of benign inflammatory cap polyposis. At 3-month follow-up, sigmoidoscopy showed multiple recurrences of polyps at the site of the previous rectal polypectomy, which were removed by combined hot snare polypectomy and argon plasma coagulation. At 1-year follow-up, the patient was symptom-free and had no more episodes of bloody stool. Follow-up sigmoidoscopy showed a post-polypectomy rectal mucosal scar without recurrent polypoid lesions.

## INTRODUCTION

There are many causes of recurrent bloody stools in young adults, the most common being hemorrhoids, inflammatory bowel disease, and tumors. The presence of a circumferential mass lesion in the rectum or lower bowel requires the exclusion of malignancy, even in a young adult. Benign inflammatory cap polyposis, or cap polyposis, is a rare condition that was first described in 1985 and has been reported only rarely in the literature.[1] At this time, there are no clinical guidelines for the treatment and follow-up of patients with colorectal cap polyposis.

## CASE REPORT

A 15-year-old adolescent boy presented with chronic constipation, difficulty in defecation, and episodic bloody and yellowish stools. He denied using any mechanical methods to improve his constipation and had not used enemas. On examination, digital rectal examination identified a polypoid rectal mass.

Laboratory investigations included hemoglobin 13.6 g/dL. Barium enema was unremarkable. Colonoscopy showed a circumferential polypoid lesion protruding into and occupying the entire mid to lower rectal lumen. The surface of the polyps showed tortuous and dilated small blood vessels (Figure 1). The remaining rectum and colon were otherwise macroscopically normal.

The polypoid lesion was removed using hot snare polypectomy of the rectum. Histopathology showed that the polyps were benign, consisting of chronic inflammatory cells and an ulcerated surface covered in fibrinous exudate, which formed a polyp cap. There were also groups of proliferating and congested blood vessels admixed with

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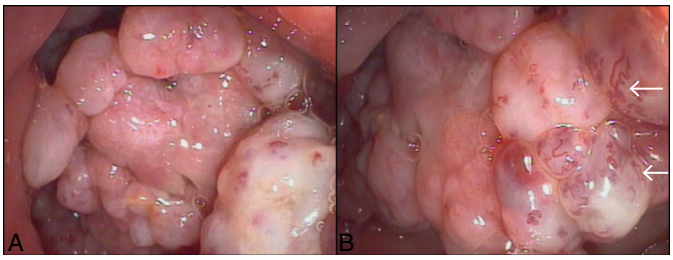


**Figure 1.** (A) Endoscopic colonoscopy showing a large polypoid lesion protruding into the entire lumen of the rectum. (B) Cap polyposis with characteristic surface blood vessels that are tortuous and dilated (white arrows).

mixed inflammatory cells, together with foci of hemorrhage and scattered groups of hemosiderin-laden macrophages. The polyp cap was covered by an admixture of fibrin, mucus, and acute inflammatory cells. No malignancy or infectious organisms were identified. (Figure 2).

At 3-month follow-up, the patient underwent repeat sigmoidoscopy, which showed recurrence of polypoid rectal lesions with white exudate at the previous polypectomy site. Repeat polypectomy was performed using combined hot snare polypectomy and argon plasma coagulation to obliterate small mucosal nodules (Figure 3). The patient was also treated with a senna laxative.

At 1-year follow-up, the patient was symptom-free and reported no more episodes of bloody stool. Follow-up sigmoidoscopy showed a post-polypectomy rectal mucosal scar without recurrent polypoid lesions (Figure 4).

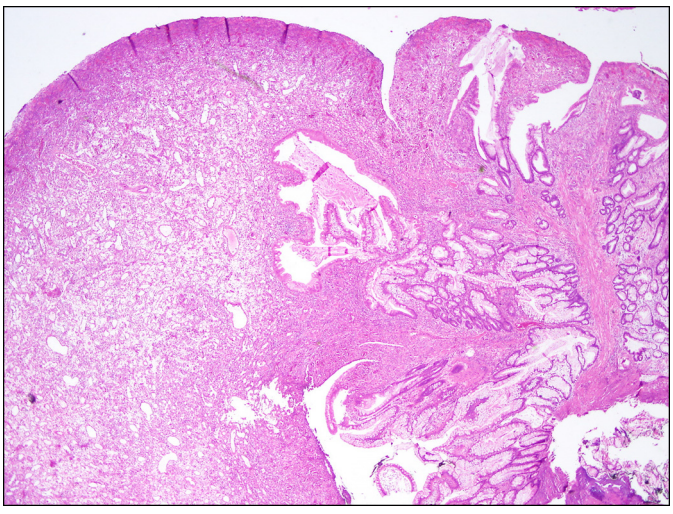

**Figure 2.** Photomicroscopy showing a low-power light histopathology image of a benign polypoid colonic lesion with a fibrinous surface, or 'cap,' and surface ulceration, with superficial new vessels and mixed inflammatory cells. Hematoxylin and eosin (×100).

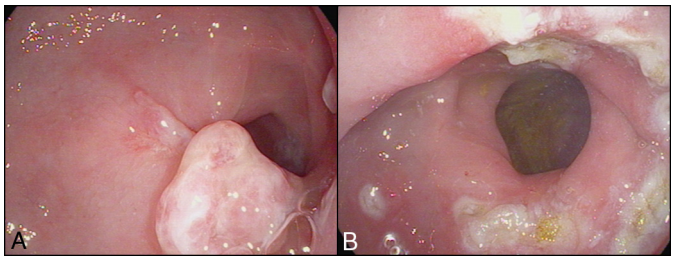


**Figure 3.** (A) Endoscopic colonoscopy showing a new polypoid lesion in the lower rectum with white exudate. (B) Endoscopic colonoscopy shows the appearance of the colonic mucosa following argon plasma coagulation of an area of cap polyposis presenting with small nodules.

## DISCUSSION

Benign inflammatory recto-sigmoid cap polyposis was first described in 1985 by Williams et al.[1] Cap polyposis is a benign inflammatory non-neoplastic condition that results in polyps containing acute and chronic inflammation, usually found in the rectum and sigmoid colon. The most common clinical manifestations of cap polyposis are tenesmus, difficulty in defecation, and hematochezia.[2]

The theories of the etiology of cap polyposis include chronic mucosal irritation, which is similar to solitary rectal ulcer syndrome, and a secondary inflammatory response from conditions including intussusception, rectal prolapse, and rectocele.[3] Recto-sigmoid cap polyposis can lead to anemia from chronic blood loss, or to hypoalbuminemia from protein loss.[4-7]

Endoscopic findings in cap polyposis have described the typical lesion as consisting of multiple polypoid lesions covered with mucus or exudate in the rectum and sigmoid colon. The differential diagnosis of the lesions includes ulcerative colitis with severe inflammatory polyposis, tubulovillous adenoma,

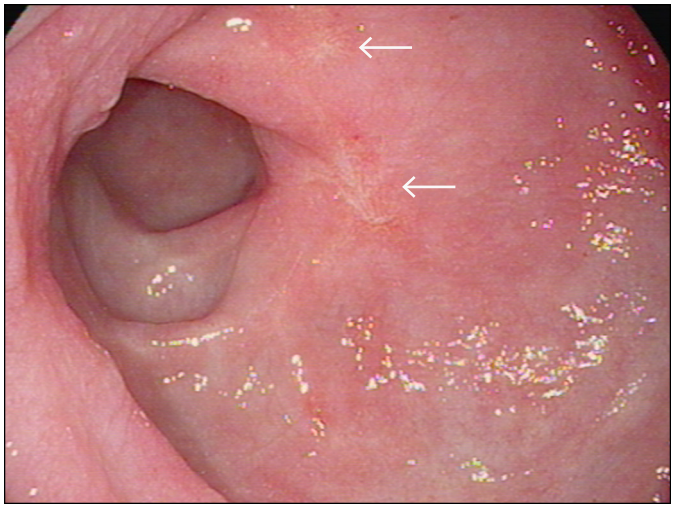

**Figure 4.** Follow-up endoscopic colonoscopy shows a rectal scar (white arrows). No recurrent polyps are identified.

malignancy, and infection, such as amoebic colitis. Further investigation with endorectal ultrasound, magnetic resonance imaging, or histology may be needed. The histopathology of cap polyposis is typical and, as in this case, consists of elongated dilated and tortuous hyperplastic gland crypts with inflammatory cell infiltrates and vascular dilatation.[3] The mucosal surface of the polyp is ulcerated and is covered by a fibrinopurulent exudate that forms the cap of the polyp. These polyps secrete large amounts of non-sulfated mucins that are different from the mucus secreted by normal colorectal glandular cells.[8,9]

There are no clinical guidelines for the management of cap polyposis. Repeated colonoscopy with piecemeal snare polypectomy can be done easily, given that the typical location of cap polyposis is the rectum. Combined with the use of laxatives and biofeedback therapy, argon plasma coagulation can be applied to obliterate the remnants of the polyps. There have been some reports on the use of metronidazole in the treatment of cap polyposis to reduce inflammation, as well as reports that eradication of *Helicobacter pylori* in patients with cap polyposis leads to improvement of rectal lesions.[10-13] However, it has also been reported that cap polyposis did not improve after eradication of *H. pylori* until treatment with an enema containing 3 mg betamethasone.[14] There have also been reports of cap polyposis that is unresponsive to betamethasone enema as well as a complete regimen of infliximab.[15,16] Surgery and polypectomy are the primary treatment options for patients with recurrent cap polyposis who are unresponsive to medication.[17]

Inflammatory cap polyposis is a rare non-neoplastic condition that primarily involves the rectum and sigmoid colon. Cap polyposis can be diagnosed with endoscopic and histologic findings. There are no clinical management guidelines for cap polyposis, so there is no definitive treatment. Endoscopic polypectomy can be performed to relieve patient symptoms, and other treatment modalities can be considered. In this case, the young man with rectal cap polyposis was treated successfully with combined hot snare polypectomy and argon plasma coagulation.

## DISCLOSURES

Author contributions: S. Anuchapreeda and P. Aumpansub wrote and revised the manuscript. P. Phengsuthi, T. Ratanachuek, and N. Wisedopas revised the manuscript. S. Anuchapreeda is the article guarantor.

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