

## Can Colonoscopic Band Ligation (Without Resection) Be an Effective and Complication Free Technique in Pedunculated Large Polyp Treatment?

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### Abbreviations:

EBL: Endoscopic band ligation; MBL: Multiband ligators; CBL: Colonoscopic band ligator

### Keywords:

Colorectal polyp; Endoscopic band ligation;  
Colonoscopic band ligator

## 1. Abstract

Endoscopic Band Ligation (EBL) is effective for treatment of both variceal and non-variceal upper-gastrointestinal hemorrhage. There have been only case reports on the use of EBL in the colorectal polyps. In this report, we present our experience with the EBL (without resection) for the treatment of a large pedunculated colorectal polyps in three cases as a salvage treatment when our alternative treatment option wasn't available. In these cases, we used the Colonoscopic Band Ligator (CBL) which we designed and produced not the standard multiband ligators (MBL).

**1.1. Case 1:** Colonoscopy was performed in 72-year-old man (receiving anticoagulant) because of iron deficiency anemia. Two large pedunculated polyps (adenomatous polyp) were identified and treated with CBL for colonoscopy without complication.

**1.2. Case 2:** Colonoscopy was performed in 55-year-old woman because of history of colorectal carcinoma in her family. A pedunculated polyp (adenomatous polyp) was identified and treated with three band effectively by CBL without complication.

**1.3. Case 3:** 52-year-old female patient was referred to our hospital because of a giant polyp occluding the lumen from another center. A pedunculated polyp (tubular adenoma) almost occluding the lumen was identified and treated with CBL without complication. Control biopsies were taken from scar areas in all patients and none of them

had dysplastic findings. In the light of our experience, treatment with CBL is promising in terms of applicability and development.

## 2. Introduction

Increasing numbers of early stage colorectal cancers and precancerous adenomatous lesions, polypoidal type lesions, and flat and depressed type lesions can be visualised and treated endoscopically. Endoscopic Polypectomy (EP) is indicated for pedunculated or semipedunculated polyps [1]. EP is becoming increasingly safe and ambitious, although this treatment comes with a price tag: complications secondary to polypectomy. These complications are more frequent in sessile polyps, and in those over 2 cm in size. They can generally be grouped into two types: hemorrhages and perforation [2]. Endoscopic Band Ligation (EBL) is effective for treatment of both variceal and non-variceal upper-gastrointestinal hemorrhage. Ibanez-Sanz et al. report that EBL without resection is an easy and safe technique that should be considered in patients with multiple morbidities and small superficial upper gastrointestinal (UGI) lesions [3]. There have been only case reports on the use of EBL in the colon polyps [4]. We previously produced our own Colonoscopic Band Ligator (CBL) using some silicon and plastic materials used in the automotive industry (Figure 1a). CBL had a larger (front-diameter 16mm) and conical cap than standard Multiband Ligators (MBL). And we used the CBL in cases with hemorrhoid, bleeding colorectal lesions, and we had effective results before. In this report, we present

our experience with the EBL (without resection) for the treatment of a large pedunculated colorectal polyps in three cases as a salvage treatment when our alternative treatment option wasn't available [6].



**Figure 1a:** Handmade colonoscopic band ligator attached to the colonoscope.

### 3. Case 1

Colonoscopy was performed in first case because of iron deficiency anemia. 72-year-old man had been receiving coumadin and aspirin because of coronary vascular disease and atrial fibrillation. Giant polyps (35-mm and 30-mm) with thick peduncule were seen in the descending colon at 55 cm distance to the anal verge. The biopsies were taken from all polyps (Histopathological evaluation revealed adenomatous polyp). Conventional EP with snare was performed to one of the polyps. However, the procedure was stopped due to patient intolerance. The next day the procedure was repeated. But EP could not apply due to electrocauter device malfunction. CBL procedure was decided in two polyps. Using a colonoscope with a CBL attached to the tip, we positioned the polyp in the center of the cap. The polyp was then suctioned and into the cap of the CBL, and bands were released. The procedure was repeated the other one. The treatment with CBL was quite successful without complication. After then the patient was discharged in a stable position. After one month, control colonoscopy was performed. It was observed that the polyps were completely lost, superficial ulcers were observed at the edge of the scar area. Multiple biopsies were taken from this area. Histopathological evaluation revealed reactive changes and superficial inflammation. Dysplastic finding was not observed. (Figures 1b and 1c) show the 35mm diameter polyp before and after (one month) treatment. (Figures 1d and 1e) show the 30mm diameter polyp before and after (one month) treatment.



**Figure 1b:** Endoscopic appearance of a 35-mm pedunculated colorectal polyp in Case 1.



**Figure 1c:** Endoscopic evaluation one month later showed that the scar area and superficial ulcer in Case 1.



**Figure 1d:** Endoscopic appearance of a 30-mm pedunculated colorectal polyp in Case 1.



**Figure 1e:** Endoscopic evaluation one month later showed that the scar area and superficial ulcer in Case 1.

### 4. Case 2

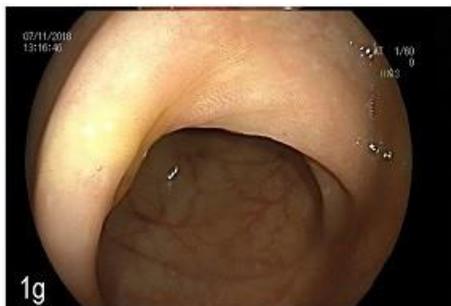
Colonoscopy was performed in 55-year-old woman because of history of colorectal carcinoma in her family. A 25-mm pedunculated polyp (adenomatous polyp) was identified at the descending colon at 40 cm distance to the anal verge. The biopsies were taken from polyp (Histopathological evaluation revealed adenomatous polyp). CBL procedure was decided in these case due to electrocauter device malfunction. The polyp was then suctioned and into the cap of the CBL, and three bands were released. The pedunculated polyp treated effectively without complication. Patient was discharged in a stable position at the same day. After one month, control colonoscopy was performed. It was observed that the polyp was completely lost. Multiple biopsies were taken at the edge of the scar area. Histopathological evaluation revealed reactive changes and dysplastic finding was not observed. Figures 1f and 1g show the polyp before and after (one month) treatment.

### 5. Case 3

52-year-old female patient was referred to our hospital because of a giant polyp occluding the lumen from another center. Colonoscopy was performed. 35-mm long pedunculated large polyp almost occluding the lumen was seen in the splenic flexure at 95 cm to the anal verge (Histopathological evaluation revealed tubular adenoma). We thought the standard EP with snare was technically difficult in the case and decided to do CBL procedure firstly. Although the polyp was large, the procedure was successful. Color and ischemic changes in the polyp were promptly observed. Therefore, we decided to follow up without resection. After one month, control colonoscopy was performed. It was observed that the polyp was completely lost, minimal superficial erosion was observed. Multiple biopsies were taken from this area. Dysplastic finding was not observed in histopathological evaluation. (Figures 1h and 1i) show the polyp before and after (one month) treatment.



**Figure 1f:** Endoscopic appearance of a pedunculated colorectal polyp in Case 2.



**Figure 1g:** Control colonoscopy showed completely lost of polyp in Case 2.



**Figure 1h:** Endoscopic appearance of a pedunculated colorectal polyp in Case 3.



**Figure 1i:** Control colonoscopy showed completely lost of polyp in Case 3.

### 6. Discussion

According to our literature screening, this kind of technique has not been reported. According to guidelines EP is indicated for pedunculated or semipedunculated polyps, and endoscopic mucosal resection (EMR) is indicated for sessile polyps or superficial lesions. Endoscopic submucosal dissection (ESD) is indicated for lesions requiring endoscopic en bloc resection, although the lesions cannot be resected en bloc by snare techniques [1]. The general conclusion is that the MBL devices in the small intestine and the right colon are not safe and is probably safe in the thick left colon [5]. No information is available EBL or use of CBL in the treatment of polyps in guidelines. According to our observations, the advantages of the use of CBL are as follows:

- It is an easy-to-implement technique
- It provides treatment for every colonic area that the colonoscope can reach
- It has a low risk of bleeding and perforation
- It is quite cost-effective treatment option

The disadvantages of treatment with CBL in such cases are as follows:

- The histology of a tumor can't be evaluated accurately because the tumor falls off spontaneously after band ligation
- The recurrence risk of lesions of treatment with this technique is uncertain.

The treatment with CBL in such cases may be an assistant procedure to EP, ESD or EMR. This method may be helpful for the prevention of complications such as bleeding and perforation, especially in patients using anticoagulants. Ibanez-Sanz et al. report that management of early small lesions in UGI with EBL without use of electrocautery appears to be a safe, effective, simple and widely available technique in patients who are not good candidates for surgery [3]. We agree with Ibanez Sanz's report. In addition, we think that EBL (or CBL) treatment without dissection may be safe technique in the left colon. The treatment with CBL may be used as an alternative for the treatment of pedunculated polyps in selected cases, if EP is not possible.

## 7. Conclusion

In the light of our experience, treatment with CBL is promising in terms of applicability and development.

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