

Homemade Endoloop

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Abstract

Although polypectomies are very common procedures in endoscopy, they are not without complications. The most common complication is bleeding following the procedure. Numerous strategies have been developed to prevent bleeding. One of these, the use of an endoloop, has had good results for polyps with very long or thick pedicles. Nevertheless, since commercial endoloop kits for this procedure are very expensive and in short supply, they are not widely used in Colombia. In this article we present a low cost design developed by Dr. Sakai in Sao Paul Brazil for an endoloop that can be made in house, and we present our experience with this tool.

Keywords

Endoloop, polypectomy, gastrointestinal bleeding.

INTRODUCTION

It has been proven that polyps are the precursors of colorectal cancer and that resection through colonoscopy has decreased the incidence of colorectal cancer (1). Colonoscopy with polypectomy is commonly performed in endoscopy rooms, but post-procedure bleeding and perforations are the procedure's greatest complications (2). These complications are especially common (up to 10% of cases) when colonic polyps have large pedicles (3-5). Endoscopic techniques that have been developed to prevent bleeding include an adrenaline injection into the polyps' pedicle, the use of an endoloop, and the use of hemoclips (6).

Large pedicled colonic polyps are the most likely to present both early and late bleeding following polypectomy because of the presence of large blood vessels in the bases of these polyps (4).

The endoloop is especially useful for prevention of bleeding and closure of perforations. Designed originally

by Pontecorvo in 1986, (8) it is currently in wide use and has been proven effective in appropriately selected patients. (8, 9) Unfortunately, its market price is over one-thousand dollars and each loop can cost more than fifty dollars. The result of high cost and low availability in our environment is that this method is rarely used. This paper presents a homemade endoloop design that only costs one dollar, and it presents our experience with this device.

MANUFACTURE

1. How to create the loop:

- Take 20 centimeters of 25 lb. nylon line and begin to tie a knot.
- Cross the line under the left segment to form an "X" (figure 1).
- Then wrap the same end up, over and around the line two times.
- Take the same end and pull the knot as tightly as possible. This makes the loop that allows us to turn and

close (Figure 2). The right side will be taken by the polypectomy loop.

2. Take the handle from a disposable gastrosomy loop and unscrew the neck so that metal is exposed. Introduce 2-3 cm of the bottom of the knot tied in Step 1 through the polypectomy loop and tie it over the casing (Figure 3). The casing will hold the knot and allow us to close the loop when the polyp is in its center.



Figure 1. Note the Nylon x-shaped crossing.



Figure 2. Observe that the loop can be closed.

Clinical case 1

A 58 year old patient presented acute abdominal pain and a possible sigmoid volvulus. A colonoscopy showed the presence of a large lipoma that created an intussusception and which 100% of the intestinal opening. However, the mucous of the surrounding colon was normal (Figure 4). Since the patient had multiple comorbidities, the family rejected any high risk surgical interventions. This led

to medical management. Endoscopic intervention eight days later found a large lipoma that occupied 40% of the intestinal opening. Due to the high risk of another intussusception, the possibility of endoscopic management was explained to the family. They agreed to the procedure. An endoloop is placed to bind the lesion, abandon it and achieve its collapse as a second intention. The entire lesion was enclosed by the endoloop and secured (Figure 5). Once secured in the loop, the polypectomy loop was closed. The lesion began to show cyanosis because of the snare, and once it was completely tightened it was removed.



Figure 3. Polypectomy handle closing over the loop, ready to use.

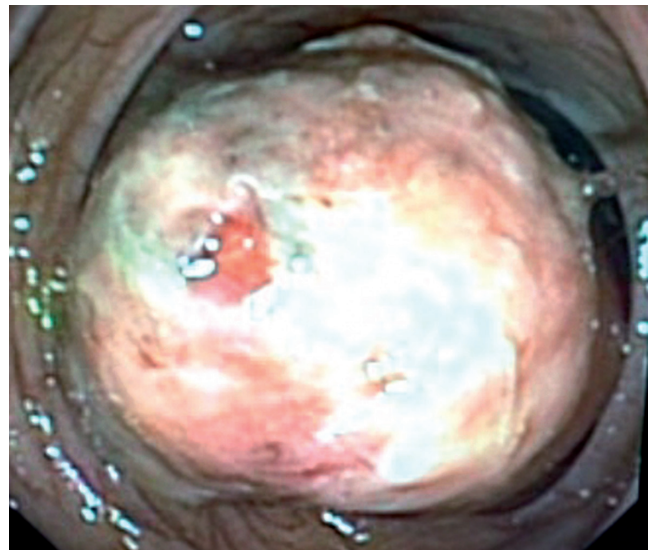


Figure 4. Large mass in the sigmoid colon compatible with a lipoma that obstructs 100% of the intestinal opening creating intussusception.

Three months later during the endoscopic control, all that remained was a scar. The patient's symptoms have completely disappeared. (Figure 6).



Figure 5. Observe the endoloop completely surrounding the base of this large lesion before tightening.



Figure 6. Endoscopic view. Observe the remaining stump of the previous large lesion.

Clinical case 2

A colonoscopy in a 50 year old patient found a large pedicled polyp. An endoloop polypectomy was performed to prevent bleeding. The loop was opened and the entire head of the polyp is caught. The loop was placed as close to the pedicle as possible and closed. This created cyanosis in the head of the polyp. The polyp above the endoloop was then resected leading to a successful polypectomy (Figures 7 and 8). No evidence of re-bleeding was observed in a check-up one month later.

Clinical case 3

A colonoscopy in a 71 year old patient found a large pedicled polyp. Endoscopic polypectomy was performed. A

loop was placed around the base of the polyp and its pedicle. Once trapped by the loop, the loop was closed generating cyanosis in the lesion's head. The polyp was cut above the loop, but pedicle remained. Leaving such a residual lesion with a large blood vessel in its interior was out of the question (Figure 9), so it was decided to use a second endoloop to remove it in order to control any risk of bleeding.

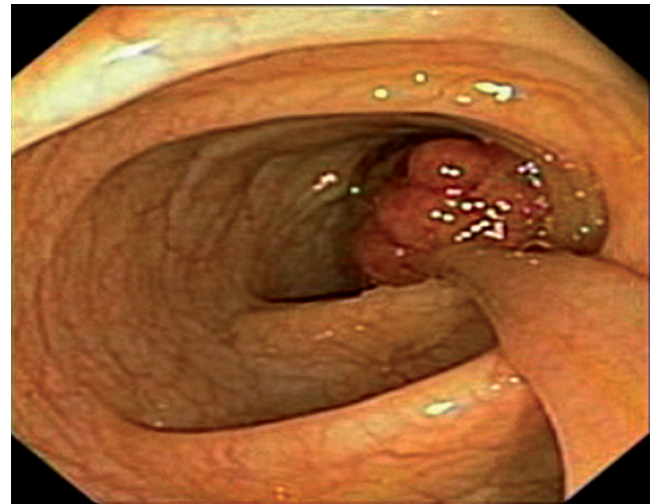


Figure 7. A large polyp in the colon is being trapped by the endoloop prior to resection by endoloop polypectomy.

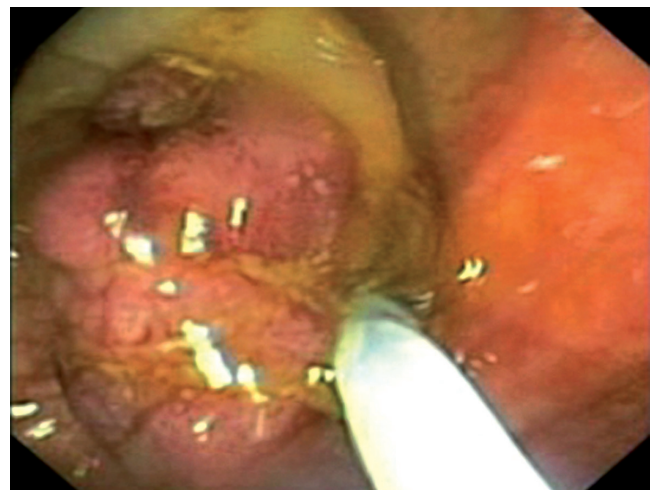


Figure 8. Closing the loop over the base of the lesion, observe the cyanosis generated over the polyp.

CONCLUSIONS

This in-house manufactured endoloop is easy to make, easy to use, very cheap (less than a dollar), very useful and very safe. It is important to highlight, however, that the use of this device requires getting to know it and positive results depend on choosing appropriate candidates for this treatment.

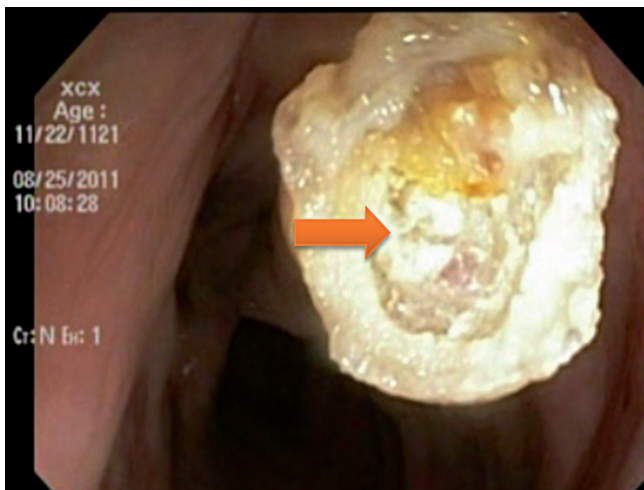


Figure 9. Observe the large size of the polyp's pedicle after resection and the size of the blood vessels.

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