Colon Presentation in the Era of the Surgical Endoscopist- A Case Series of a Cohort of Patients from Barbados

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ABSTRACT

Colon preservation in the era of the surgical endoscopist- A Case series of a Cohort of Patients from Barbados.

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BACKGROUND

Endoscopic resection has been a common procedure for the removal of simple colorectal polyps for decades. Subsequently, more advanced procedures were developed to treat more complex rectal polyps and currently with advancements in endoscopic equipment, the difficult colonic polyp can now be resected with combined laparoscopic and endoscopic procedures

CASE REPORT

We report on our initial experience utilizing colonoscopic assisted laparoscopic wedge resection (CAL-WR) for the removal of benign complex colonic polyps at a laparoscopic center in Barbados. The case report involves three patients with caecal polyps who were referred for colectomy. These patients were deemed appropriate for colon preservation given the size of the lesion, the benign histologic diagnosis and the location of the lesions within the caecum. All cases were performed under general anaesthesia and the patients were discharged the following day. Subsequent histology confirmed benign pathology in all patients.

DISCUSSION

Colon preservation is a feasible option for patients with benign colorectal polyps. CAL-WR is an appropriate procedure for these patients and is feasible in our setting because no additional advanced endoscopic skills or equipment are required.

INTRODUCTION

Barbados has one of the highest incidences of colon cancer in the world at 25.1 cases per 100,000 (1). There is increasing access to screening on the island to reduce this trend. The removal of benign complex polyps with colonoscopic assisted laparoscopic wedge resection (CAL-WR) is uniquely suited to our setting as it does not require additional skills. We describe our initial experience with this technique in our low resource setting and offer a review of the literature to guide future endeavors at wider implementation in similar locations

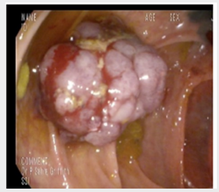
METHOD & MATERIALS

- *All patients underwent screening colonoscopies and were found to have complex polyps, not amenable to standard polypectomy techniques due to their size or location.*
- *The procedures were performed using basic endoscopic and laparoscopic equipment in the operating theater. The patients were placed in the modified lithotomy position after induction of general anesthesia and placement of a urinary catheter.*
- *Pneumoperitoneum was created with a Veress needle to a pressure limit of 12 mmHg and a 4-port array with the camera at the umbilicus to facilitate mobilization of the right colon. The colonoscope was then advanced to the site of the polyp with air insufflation.*
- *Patients were either discharged same day or day 1 post op.*

RESULTS

Case #1

- *A 66-year-old male noted on screening colonoscopy to have a sub-centimeter polyp at 20cm and a 6cm sessile polyp to the ascending colon. Histologic examination suggested tubular adenoma with low grade dysplasia. A CELS approach was undertaken.*
- *The polyp was noted to be on a narrow stalk and was removed with a hot snare. Figure 1 shows the lesion prior to removal while Figure 2 shows the base post removal.*
- *The laparoscopic view was employed to confirm bowel integrity and perform a leak test which was negative. He was discharged the same day.*
- *Histology confirmed a tubular adenoma with focal high-grade dysplasia and the margins were free.*





Case#2

- *A 75-year-old female presented to a gastroenterologist for a surveillance colonoscopy after endoscopic removal of a tubulovillous rectal polyp in 2007. Subsequent reviews in 2010 were normal but the patient was lost to follow up for 9 years. A flat lateral spreading polyp to the caecum was noted and biopsied on her return in 2021.*
- *Preoperative histology confirmed a tubulovillous adenoma with low grade dysplasia and she was referred for surgical removal.*
- *The caecum, appendix and terminal ileum were mobilized prior to placement of the scope during CAL-WR.*
- *The stapler was aligned ensuring that the polyp was encompassed in the specimen and confirmed via the endoscopic view.*
- *Histology of the specimen showed a tubular adenoma with low grade dysplasia.*

Case #3

- *A 50-year-old female with a family history of colon cancer was noted to have an adenomatous polyp at the appendiceal orifice on screening colonoscopy. The preoperative histological diagnosis was tubular adenoma with low grade dysplasia on biopsy .*
- *A wedge resection of the polyp enbloc with the appendix was performed.*
- *The ileocecal valve was cannulated to ensure that there was no tight occlusion.*
- *The histology confirmed a tubular adenoma with focal high-grade dysplasia.*

DISCUSSIONS

- *CAL-WR can represent a bridge towards more advanced CELS techniques such as full thickness laparo-endoscopic excision (FLEX) (3).*

Table 1-Guidelines for universal implementation of CELS.(4,5).

Preop	Previous endoscopic evaluation to identify the lesion
	Located within the caecum away from the ileocaecal valve
	Pedunculated polyp stalk > 20 mm or stalk thickness > 5 mm*
	Nonpedunculated polyps > 20 mm*
	Only additional right-sided polyps for removal at the same procedure*
	Preop histologic diagnosis
intraop	Endoscopic and Laparoscopic equipment available
	Endoscopic stapler
	Placement of trocars prior to endoscopy
	Mobilisation of the caecum, appendix and terminal ileum
	Air insufflation acceptable: CO_2 insufflation preferred

Indications for Advanced Endoscopic Techniques(5)

- *Nonpedunculated lesions greater than 20mm → endoscopic mucosal resection and prophylactic defect closure for right sided lesions.*
- *Pedunculated lesions with the criteria listed in Table 1 should be managed with detachable loops or clips.*

Alternative to Endoscopic Mucosal/Submucosal Resection

- *CAL-WR is a viable alternative for these lesions when the appropriate equipment or skillset for endoscopic removal is not available locally.*
- *CAL-WR is associated with decreased length of hospital stay, morbidity and mortality.*
- *Risks associated with this procedure include bleeding, perforation, and staple line leak (6).*
- *CELS has a statistically significant decrease in complication rates especially in the Clavien-Dindo Class I-II compared to surgical resection (7).*

Preop Histologic Diagnosis-Benign vs Malignant Polyps

- *Features with higher incidence of malignancy are lateral spreading lesions and the presence of ulceration (8,9).*
- *Visual inspection alone has the potential to miss a malignancy in as much as a third of cases (10).*
- *Rates of a missed malignancy range between 1.5% and 25% (10).*

Air vs CO2 insufflation

- *CO2 insufflation has been shown to absorb faster than air potentially decreasing the amount and duration of distention as well as decrease patient discomfort (11).*
- *CO2 insufflation can facilitate longer procedures and reduce the difficulties associated with bowel distension.*

Trocar Placement

- *Placement prior to insufflation can reduce bowel injury, facilitate adhesiolysis and mobilization of the caecum and aid in the endoscopic removal of the polyp.*

CONCLUSION

Current evidence suggests that CAL-WR can be safely implemented even in the low resource setting with good outcomes for patients.

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