

Combined endoscopic and laparoscopic removal of colonic polyps

Interventional procedures guidance

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Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the [Yellow Card Scheme](#).

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful

discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

1 Recommendations

- 1.1 Current evidence on the safety and efficacy of combined endoscopic and laparoscopic removal of colonic polyps is adequate. Therefore this procedure may be used with normal arrangements for clinical governance, consent and audit.
- 1.2 This procedure should be done only by teams experienced in laparoscopic colonic surgery and complex interventional endoscopy.

2 Indications and current treatments

- 2.1 Colonic polyps are mucosal lesions that project into the lumen of the large bowel. Most colonic polyps cause no symptoms but they may cause rectal bleeding, mucus in stools, abdominal pain and rarely diarrhoea or constipation. If left untreated, there is a small risk (approximately 1 in 10) that polyps may develop into bowel cancer after several years.
- 2.2 Colonic polyps are usually removed by endoscopic snaring. Polyps that cannot be removed endoscopically are typically large, broad-based, or situated in anatomically inaccessible areas (such as behind mucosal folds) where attempted endoscopic removal could result in bowel perforation. Polyps that are unsuitable for endoscopic removal need open or laparoscopic bowel resection.

3 The procedure

- 3.1 Combined endoscopic and laparoscopic removal of colonic polyps is used to excise polyps that are unsuitable or high-risk for endoscopic removal, without the need for open surgery or segmental laparoscopic resection. The procedure aims to provide enhanced visualisation and enable the colon to be manoeuvred and controlled during resection of the polyp.
- 3.2 The procedure is done with the patient under general anaesthesia. The position of the polyp is noted by making intraluminal and extraluminal marks around the polyp using endoscopic coagulation and laparoscopic diathermy respectively. Alternatively, the location of the polyp can be marked using endoscopic tattooing. Sutures are placed laparoscopically (extraluminally) at the marked sites around the polyp. The sutures are then drawn together to invert a fold, containing the polyp, into the colonic lumen. The inversion site is then laparoscopically oversewn and the protruding tissue, including the polyp, is removed endoscopically. Alternatively, a wedge excision of the marked polyp is done laparoscopically and the polyp retrieved and removed from one of the laparoscopic port sites. It is then sent for histopathological examination.

4 Efficacy

This section describes efficacy outcomes from the published literature that the committee considered as part of the evidence about this procedure. For more detailed information on the evidence, see the [interventional procedure overview](#).

- 4.1 In a non-randomised comparative study of 123 patients treated by laparoscopic-assisted endoscopic polypectomy (n=25), endoscopic mucosal resection (n=30) or laparoscopic colectomy (n=68) successful removal of polyps was reported in 76%, 77% and 100% of patients respectively. In a case series of 30 patients treated by laparoscopic-assisted endoscopic polypectomy successful removal of polyps was reported in 73% (22/30) of patients. In these patients, all resection margins were clear. In a case series of 23 patients treated either by laparoscopic-assisted endoscopic polypectomy or endoscopy-assisted laparoscopic wedge resection successful removal of polyps was reported in 87%

(20/23) of patients.

- 4.2 In a case series of 146 patients treated by various combined endoscopic and laparoscopic approaches (including laparoscopic-assisted endoscopic polypectomy [n=8], endoscopy-assisted wedge resection [n=72], endoscopy-assisted transluminal resection [n=40] and endoscopy-assisted segmental resection [n=26]) 1 recurrence of a tubulovillous adenoma was reported at mean follow-up of 2.9 years.
- 4.3 In a case series of 176 patients treated by laparoscopic-monitored endoscopic polypectomy no recurrence of resected polyps was observed at median follow-up of 65 months.
- 4.4 The specialist advisers listed key efficacy outcomes as complete polyp excision allowing for complete pathological assessment, recurrence, reduced morbidity compared against standard laparoscopic resection or traditional surgery, avoidance of major laparoscopic resection and maintenance of bowel function.

5 Safety

This section describes safety outcomes from the published literature that the committee considered as part of the evidence about this procedure. For more detailed information on the evidence, see the [interventional procedure overview](#).

- 5.1 Conversion to open surgery was needed in 5% (7/146) of patients in a case series of 146 patients treated by various combined endoscopic and laparoscopic approaches (including laparoscopic-assisted endoscopic polypectomy [n=8], endoscopy-assisted wedge resection [n=72], endoscopy-assisted transluminal resection [n=40] and endoscopy-assisted segmental resection [n=26]). The reasons for conversion to open surgery were 3 incidents of suspected malignant tumours, 1 bowel perforation, 2 difficult closures of the resection site and 1 incomplete resection of a polyp.
- 5.2 Conversion to a 'formal resection' was needed in 2% (4/176) of patients in a case series of 176 patients treated by laparoscopic-monitored endoscopic polypectomy, because of failure of the combined approach: the authors did not

state whether formal resection was performed laparoscopically or by open surgery.

- 5.3 Wound infections were observed in 10% (14/146) of patients in the case series of 146 patients treated by various combined endoscopic and laparoscopic approaches. In the same study, intra-abdominal abscesses were reported in 3% (4/146) of patients: CT-guided drainage of abscesses was needed in 3 patients and 1 patient needed reoperation.
- 5.4 Postoperative bleeding, which resolved with conservative treatment, was reported in 3% (1/30) of patients in a case series of 30 patients treated by laparoscopic-assisted endoscopic polypectomy: details of treatment were not provided. In the same study, urinary retention was observed in 7% (2/30) of patients.
- 5.5 Atelectasis was reported in 5% (9/176) of patients in a case series of 176 patients treated by laparoscopic-monitored endoscopic polypectomy (time of occurrence not reported). In the same study, seroma was observed in 2% (3/176) of patients and ileus was observed in 2% (4/176) of patients.
- 5.6 Specialist advisers stated that inflammatory responses to tattoo ink in adjacent tissues, difficulty with laparoscopy because of gross colonic distension from colonoscopy and bleeding after polypectomy were anecdotal adverse events. Specialist advisers listed theoretical adverse events as incomplete resection, bleeding that may be difficult to control intraluminally, bowel perforation, anastomotic leak, faecal contamination, infection, missed malignancy, tumour spillage and loss of colonic circumference rendering simple closure difficult or impossible.

6 Committee comments

- 6.1 The committee noted that the literature included a range of procedures involving various combinations of endoscopic and laparoscopic techniques for removing colonic polyps. It was advised that these represented a sequence of possible interventions for colonic polyps.

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Endorsing organisation

This guidance has been endorsed by [Healthcare Improvement Scotland](#).

Accreditation

