NATIONAL INSTITUTE FOR CLINICAL EXCELLENCE

INTERVENTIONAL PROCEDURES PROGRAMME

Interventional procedure overview of laparoendogastric surgery

Introduction
This overview has been prepared to assist members of IPAC advise on the safety and efficacy of an interventional procedure previously reviewed by SERNIP. It is based on a rapid survey of published literature, review of the procedure by one or more specialist advisor(s) and review of the content of the SERNIP file. It should not be regarded as a definitive assessment of the procedure.

Procedure name
Laparoendogastric surgery
Synonyms: laparoscopic endogastric surgery; laparoscopic endoluminal surgery; endo-organ gastric surgery; laparoendoscopic gastric surgery

SERNIP procedure number
43

Specialty society
British Society of Gastroenterology

Indication(s)
Gastric polyps; gastric wall tumours (lymphomas, leiomyomas leiomyosarcomas, carcinoids); gastric cancer; Dieulafoy's lesion (arterial malformation); intractable gastroduonenal ulcers. Large or advanced gastric cancers are rarely suitable for this kind of procedure.

Lesions located in the fundus of the stomach, the gastrooesophageal junction, and near the pylorus are accessible by this technique. Lesions on the greater and lesser curvatures are relatively inaccessible.

Summary of procedure
Laparoendogastric surgery is a minimally invasive approach to surgery for gastric wall lesions, and attempts to avoid resection of the full thickness of stomach wall.

With the patient under general anaesthetic, the surgeon passes an endoscope through the oesophagus into the stomach. A laparoscope is inserted through a small incision in the upper abdominal wall, passed into the stomach, and surgery is performed from inside.

Traditional approaches to gastric surgery are resection operations through a laparotomy incision or laparoscopy. Laparoendogastric procedures are said to reduce operating time, postoperative pain, blood loss and length of hospital stay.

Literature review

Appraisal criteria

We searched for studies including people who had laparoscopy for the treatment of endoluminal or intramural lesions in the stomach.

We excluded studies only reporting on procedures involving resection of at least part of the full thickness of the stomach wall.

We excluded studies about laparoendoscopic management of perforated gastroduodenal ulcer.

List of studies found

We found no controlled studies.

We identified 9 case series including 2 or more people. We extracted data from the three case series including 5 or more people.[1-3] The annex provides references to the smaller studies.

Summary of key efficacy and safety findings (1)

Authors, location, date, patients	Key efficacy findings	Key safety findings	Key reliability and validity issues
Choi YB[1] Case series Seoul, Korea 1995 to1998 n=32 adults with gastric submucosal lesions (31 benign, 1 malignant), age 23 to 67 Procedure: wedge resection (n=21) intragastric surgery (n=10); proximal gastrectomy (n=1)	Hospital inpatient stay: 6 to 7 days Recurrence at follow up (time period not provided): 0 (one patient with malignant disease was followed up for 42 months)	Complications (number of patients): • deaths (0) • bleeding (0) • obstruction (0) • conversion to laparotomy (1) • staple line leak day 1 (1)	Uncontrolled case series All the people had submucosal lesions, all except one benign 10 patients had intragastric surgery
Walsh RM[2] Case series Cleveland, Ohio, USA Date not stated (published 2001). n=10 adults, with benign submucosal tumours, age 34 to 72 Procedure: intragastric enucleation without full thickness excision; one patient had full thickness excision	Median hospital stay: 4 days Local recurrence at mean follow up 12 months (range 1 to 32 months): 0 patients	Complications (number of patients): • conversions to laparotomy (0) • other complications (0)	Small uncontrolled case series
Hepworth CC[3] Case series Colchester, UK Date not stated (published 2000) n=9 adults with submucosal tumours, age 47 to 83 Procedure: intragastric removal of tumour, without full thickness excision	Mean hospital stay in people who did not have laparotomy: 3 days All patients eating, drinking and walking the day following the procedure	Complications (number of patients): • conversions to laparotomy because unable to remove tumour (2) • deaths (0) • bleeding (0) • leakage (0)	Small uncontrolled case series

Summary of key efficacy and safety findings (2)

Authors, location, date, patients	Key efficacy findings	Key safety findings	Key reliability and validity issues
Ohashi SS Case series Date 1993 to 1994 n=8 people with mucosal or submucosal gastric lesions: gastric cancer (n=6); leiomyoma (n=1); giant polyp (n=1), age 65 to 82 Procedure: endogastric removal of lesions	Mean hospital stay 5 days Eating and drinking 2nd or 3rd postoperative day No recurrences at mean follow up 9 months	No conversions to open surgery	Small uncontrolled case series

Validity and generalisability of the studies
We found only small uncontrolled case series of laparoscopic endogastric surgery. There is little information available on long term follow up. The efficacy of the procedure compared with conventional open laparotomy or laparoscopic partial gastrectomy remains uncertain.

While the complication rates were low, times to oral intake short, hospital stays short and recurrence rates low, the case series are small so lack precision to show the frequency of complications reliably.

Bazian comments
A key risk of the procedure is inadequate resection leading to recurrence, so long term follow up is important in the evaluation of effectiveness.

Specialist advisor's opinion / advisors' opinions
Specialist advice was sought from the British Society of Gastroenterology

Specialist Advisors stated that laparoendogastric surgery was a very new procedure carried out by very few specialist centres throughout the world. The technique is not widely disseminated, and there are few opportunities for training.

Issues for consideration by IPAC
None other than those discussed above

References

1. Choi YB, Oh ST. Laparoscopy in the management of gastric submucosal tumors. Surgical Endoscopy 2000; 14(8):741-745.

2. Walsh RM, Heniford BT. Laparoendoscopic treatment of gastric stromal tumors. Seminars in Laparoscopic Surgery 2001; 8(3):189-194.

3. Hepworth CC, Menzies D, Motson RW. Minimally invasive surgery for posterior gastric stromal tumors. Surgical Endoscopy 2000; 14(4):349-353.

4. Ohashi S. Laparoscopic intraluminal (intragastric) surgery for early gastric cancer. A new concept in laparoscopic surgery. Surgical Endoscopy 1995;9:169-171

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Annex: references for relevant studies excluded from summary table

References	Number of patients
Weiner R, Rosch W, Wagner D. Laparoscopic-gastroscopic intragastric stomach surgery [German]. Langenbecks Archiv fur Chirurgie - Supplement - Kongressband 1997; 114:1242-1243	3
Vogt DM, Curet MJ, Zucker KA. Laparoscopic management of gastric diverticula. Journal of Laparoendoscopic & Advanced Surgical Techniques-Part A 1999; 9(5):405-410	2
Tagaya N, Mikami H, Igarashi A, Ishikawa K, Kogure H, Ohyama O. Laparoscopic local resection for benign nonepithelial gastric tumors. Journal of Laparoendoscopic & Advanced Surgical Techniques-Part A 1997; 7(1):53-58	2