

EMERGENCY HAND ASSISTED LAPAROSCOPIC SURGERY (HALS) RESECTION OF A BENIGN INTRAGASTRIC STROMAL TUMOUR

Khalilullah K

A 52 years old male presented to the local casualty department, following an episode of binge drinking, with a history of malaena, upper abdominal pain and haematemesis. He was resuscitated in the emergency department and underwent endoscopy, which was inconclusive. He had a repeat episode of haematemesis while in the hospital and underwent transfusion of twelve units of packed red cells. Repeated endoscopy showed an intra gastric stromal tumour (GIST). It was decided to operate on him using Hand Assisted Laparoscopic Surgery (HALS). Emergency HALS is the first reported case in indexed literature, to deal with this sort of tumour.

KEYWORDS: Emergency - Hand Assisted Laparoscopic Surgery (HALS) - stomach - gastric leiomyoma

Pak J Med Sci October-December 2004 Vol. 20 No. 4 400-402

INTRODUCTION

Leiomyomas are the most common benign tumours of the stomach, constituting only 2% of gastric neoplasms. Morgagni first described them in 1762¹.

Less than 2% of gastric neoplasms that are resected surgically are of a smooth muscle origin². Gastric leiomyomas are encapsulated and the distinction between benign and malignant tumours may be difficult. The aggressiveness of the malignant tumour is often low².

A case is presented of a patient with a 4cm leiomyoma of the stomach arising from the posterior wall, resected by the HALS method as an emergency. We believe this is the first case reported in literature, one in which emer-

gency HALS was applied for resection of a large leiomyoma arising from the posterior stomach wall.

CASE REPORT

A 52 year old male, who is a known chronic alcoholic, was taken to Accident & Emergency department in the later part of the evening because of binge drinking with a four-day history of malaena, upper abdominal pain, four episodes of haematemesis, and dizziness, especially when standing.

He had previous history of a Mallory-Weiss tear and had obtained treatment for chronic gastritis in the past. He was not on any medication. On examination, he was anxious, tachycardic, with a pulse of 121/min, and a blood pressure at 102/62 mmHg. He had epigastric tenderness and audible bowel sounds. Other systems were unremarkable. He was optimally resuscitated and underwent emergency oesophagogastroduodenoscopy, which proved inconclusive.

On the following day, he had a further episode of haematemesis and underwent a blood transfusion. He had a repeat endoscopy, which showed a leiomyoma in the fundus of the stom-

Correspondence:

Dr. K Khalilullah
Dept. of Surgery,
St. Luke's Hospital,
Kilkenny, Eire, Ireland
E-mail: imrankhalilullah@hotmail.com

- * Received for publication: April 9, 2004
Revision received: June 9, 2004
Revision accepted: June 30, 2004

ach, an ulcer with a visible vessel on the tip of the tumour, with fresh blood in stomach, but with no active bleeding.

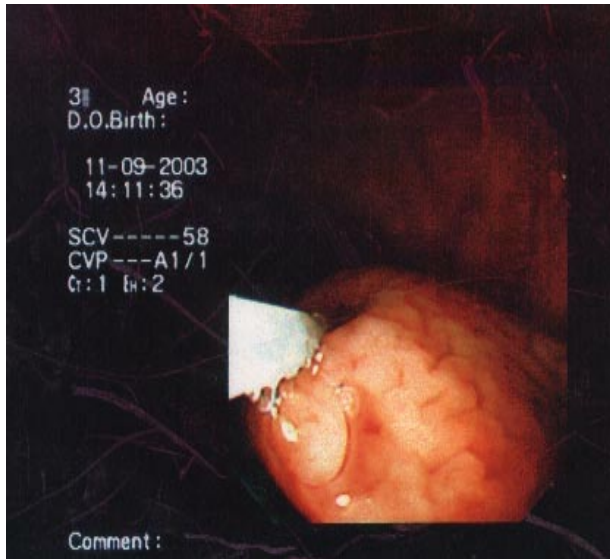


Fig.1: Endoscopic view of gastric intra stromal tumour

Subsequently, he had small amounts of haematemesis and needed a repeat blood transfusion. During the admission, he had twelve units of packed red blood cells transfused. It was then decided to operate.

PROCEDURE

Surgery was performed under general endotracheal anaesthesia. An omniport was placed through a 6.0 cm midline epigastric incision and a 30 degree scope in the left flank 1" lateral to the hand access port.

A 12mm port (for the stapler) was placed laterally in the left hypochondrium and a 5mm port inserted below and lateral to the omniport. The procedure was carried out with the left non-dominant hand of the surgeon inside the abdomen. Pneumoperitoneum was created after insertion of omniport and ports – up to 14mmHg.

After initial inspection of the peritoneal cavity, a distended stomach was revealed and tumour was identified. No other abnormality was detected. Anterior wall of the stomach was stretched over the stromal tumour by the internal hand and divided with electrosurgery.

The tumour was prolapsed through the resulting 4cm incision. The tumour measured 4cm x 3.5cm and had a wide pedicle. There was an actively bleeding artery at the bottom of the ulcer at the summit of the stromal tumour.

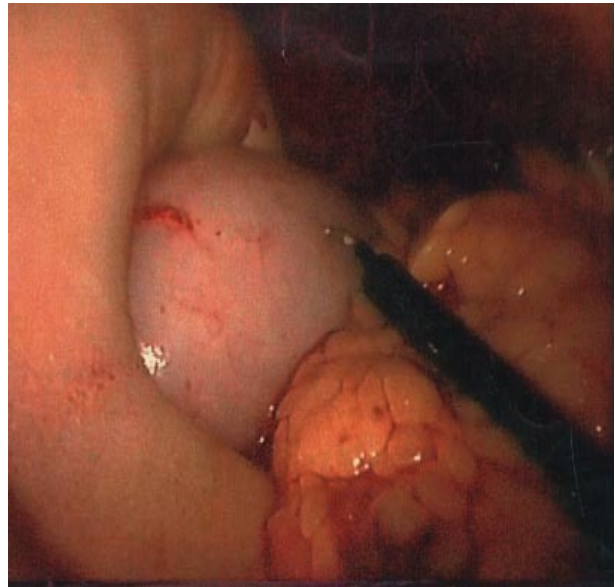


Fig. 2: Surgeon localising the tumour at the fundus of the stomach before electrosurgery

The lesion was resected using three applications of endo GIA (blue cartridge) through the normal posterior gastric wall. The tumour was then removed through the opened omniport.



Fig. 3: Gastric leiomyoma after removal from the stomach

The incision in the anterior wall of the fundus was closed with a running 2/0 vicryl using deep seromuscular bites. The assisting hand was then re-inserted and the pneumoperitoneum re-established for a thorough wash out of the peritoneal cavity and the blood clots were evacuated. Some oozing from the splenic hilum was easily controlled by Surgicel. A large drain was left leading to the gastric suture line and the splenic hilum. A standard wound closure was performed.

DISCUSSION

The techniques of minimal access gastric resection, as reported in literature, may be categorised as follows³:

- a. *Interventional flexible endoscopic approach* — superficial gastric cancer without involvement of submucosa
- b. *Laparo-endoluminal resection* — lesion posterior wall
- c. *Laparoscopic partial or total gastrectomy* — with internal reconstruction of foregut
- d. *Laparoscopic-assisted partial or total gastrectomy* — specimen extraction and reconstruction
- e. *Laparoscopic hand-assisted gastric surgery*

The above case is considered to be the first reported case in indexed literature, one in which an emergency HALS was applied for resection of a benign intrastromal gastric tumour (GIST) arising from the posterior stomach wall.

Emergency laparoscopic operation has been performed using the gasless laparoscopy technique (Laparolift)⁴.

Elective lap-assisted procedures have been undertaken for allowing a wider excision of leiomyosarcoma and securing the gastric staple line. The obvious advantages of HALS are that it recovers the tactile feeling and improves hand-eye coordination⁵. This is facilitated by shortening dissection manoeuvres, avoiding unnecessary movements, favouring the smooth traction and exposing the structures while facilitating the control of a haemorrhage, thus

reducing the conversion rate and handling of the voluminous or adherent specimen, requiring an accessory incision to retrieve the tumour. This is followed by a more positive, immediate outcome. It also offers the detection of metastatic lesions and the local staging of tumours in case of malignancy.

The laparoscopic linear stapling device greatly facilitates simultaneous division and closure of the tissues around the mass being resected, without any spillage or contamination by gastric contents, as well as without significant bleeding².

CONCLUSION

Gastrointestinal Stromal Tumours (GIST) represents about 2% of gastric neoplasms. Clinically these tumours are silent but found incidentally on endoscopy and radiological examination.

These tumours come with abdominal pain, bleeding and postprandial fullness but a diagnosis is usually made at endoscopy^{1,6,7}. Benign gastric tumours and tumours of a low-grade malignancy can be safely removed by laparoscopically-assisted-surgery.

REFERENCES

1. Di Lorenzo N, Sica GS, Gaspari AL. Laparoscopic resection of gastric leiomyoblastoma. *Surgical Endoscopy* 1996;10:662-5.
2. Llorente J. Laparoscopic gastric resection for gastric leiomyoma. *Surgical Endoscopy* 1994;8:887-9.
3. Cushieri A. Gastric resections. SAGES Primary Care Physician Information. www.sages.org/primarycare/chapter21.html
4. Siu WT, Leong HT, Li MKW. Laparoscopic resection of bleeding gastric polyps. *Surgical Endoscopy* 1997;11:283-4.
5. Targarona EM, Gracia E, Rodriguez M, Cerdan G, balague C, Garriga J, Trias M. Hand-assisted Laparoscopic Surgery. *Arch Surg* 2003;138:133-41.
6. Buyske J, McDonald M, Fernandez C, Munson JL, Sanders LE, Tsao J, Birkett DH. Minimally invasive management of low-grade and benign gastric tumors. *Surgical Endoscopy* 1997;11:1084-7.
7. Gurbuz AT, Peetz ME. Resection of a gastric leiomyoma using combined laparoscopic and gastroscopic approach. *Surgical Endoscopy* 1997; 11:285-6.