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# Highly Selective Vagotomy in the Management of Perforated Duodenal Ulcer

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## Abstract

In the emergency treatment of a perforated duodenal ulcer (DU), after surgical closure of the perforation and treatment of the secondary peritonitis, highly selective vagotomy (HSV) is a valid therapy to prevent recurrence of the underlying disease.

## Introduction

Perforation is a serious complication of a duodenal ulcer, and the first target of any treatment is to resolve the acute secondary peritonitis (1,2). The surgical therapy, the most widely adopted strategy, includes oversewing of the perforation, cleansing and drainage of the peritoneum. Nevertheless, it is known that the simple closure of the perforation is followed by recurrence of the disease in more than one half of the cases, at short or long follow-up (3). For this principle reason, other therapeutic procedures have been considered. Historically, the first attempt was to proceed, in course of the emergency laparotomy, to a gastric resection, which operation can be followed by a considerable post-operative morbidity, and later by metabolic and digestive consequences.

Recently, vagotomy, just successfully experienced in the elective treatment of DU, has been extended, as complementary treatment, to the emergency management of perforation. With the most recent reports in the medical literature, the decreasing interest to this policy can be observed (4,5). The aim of the following paper is to recall attention to the value of especially of HSV in the treatment of a perforated DU.

## Methods

Our experience made in a department of general surgery, in the years 2006-2009, includes 10 cases of male patients, aged between 26 and 61 years, with a median age of 31, urgently operated by the Author, for a diffuse peritonitis, secondary to a perforated DU, as confirmed at the subsequent laparotomy.

The indication to a complementary HSV were a condition of good surgical and anaesthesiological risk,

of no-compliance with medical therapy (4 cases), and pre-existing dyspeptic symptoms (6 cases). After the successive tests, the research of *Helicobacter pylori* negative in all the patients.

The main technical points of the surgical procedure can be summarized as follows.

- Upper midline incision, exploration of the entire abdominal cavity and its careful cleansing with copious saline irrigations.
- Closure of the duodenal perforation, verifying the absence of pyloric or duodenal stenosis.
- Retraction of the left lobe of the liver, with incision of its left triangular ligament.
- Identification of the anterior Latarjet's nerve and its "crow foot" fibres.
- Two openings in the peritoneal ligaments of the stomach can be recommended: one in the lesser omentum, which permits a better exploration and cleansing of the omental bursa and the gastro-pancreatic fold, and then an easy dissection of the fine neurovascular structures directed to the lesser gastric curvature. The second opening in the peritoneum over the esophago-gastric angle of His, at the left side of the cardias, facilitates mobilization of the inferior esophagus, anteriorly and posteriorly, and dissection of the gastric fundus with section of the "criminal nerves of Grassi" (6).
- Dissection of the lesser curve of the stomach, performed in its anterior and then posterior leaflets, starting from the terminal branches of the anterior Latarjet's nerve up to the lower esophagus to meet the left paracardial peritoneal opening, previously made. The abdominal esophagus is skeletonized in its distal 5 centimeters, keeping close to its walls, and avoiding to damage the anterior and posterior main vagal trunks.
- Reconstruction of the angle of His, according to the technique of G. Guillemin (7).

All the patients had an uneventful postoperative. They have been followed-up to 2-4 years without discovering signs of recurrent peptic diseases or of gastro-esophageal reflux.

## Discussion

From a general point of view, it must be underlined that patients eligible to an emergency HSV in course

of laparotomy for a perforated DU must not present signs of impending shock, advanced peritonitis with failure of vital functions, known pre-existing organ insufficiency or advanced age. On the other hand, no-compliance or failure of previous medical treatments, and persistent signs of dyspepsia favour the indication to HSV (7-13).

From a technical point of view, it can be objected to the possibility of performing a correct HSV in the milieu of a diffuse bacterial peritonitis, with necessary precise identification of Latarjet's nerve, and also fear the possible secondary contamination of the mediastinum. In our experience, both these problems have been overcome, having verified the feasibility of a correct dissection, under direct visual control, of the neurovascular structures of the lesser gastric curvature and of the distal esophagus, always respecting the anatomical barriers with the mediastinum. The edema encountered during dissection of the peritoneal folds, and congestion of the perigastric veins did not represent serious difficulties.

Our policy is to preserve the right gastro-epiploic vascular arcade along the greater curvature and its corresponding vagal branch.

## Conclusion(s)

HSV can be considered a good indication also in perforated DU. It can be applied as an emergency management in selected cases and in good-risk patients: it protects from possible recurrence, without increasing the morbidity of an obligatory laparotomy. The anatomical conditions of diffuse peritonitis are not an absolute surgical contraindication.

This technical possibility must be remembered to the young surgeons, especially today, when HSV is no more a common operation.

## Reference(s)

1. Makela J.T., Kiviniemi H., Ohtonen P., Laitinen S.O. Factors that predict morbidity and mortality in patients with perforated peptic ulcers. *Eur.J.Surg.* 2002;168:446-451.
2. Sharma S.S., Mamtani M.R., Sharma M.S., Kulkarni H. A prospective cohort study of postoperative complications in the management of perforated peptic ulcer. *BMC Surgery* 2006;6:8.
3. Boey J., Lee N.W., Koo J. et al. Immediate definitive surgery for perforated duodenal ulcers: a prospective controlled trial. *Ann.Surg.* 1982;196:338-344.
4. Johnson A.G. Proximal gastric vagotomy. Does it

have a place in the future management of peptic ulcer? *World J.Surg* 2000; 24:254-263.

5. Gilliam A.D., Speake W.J., Lobo D.N., Beckingham I.J. Current practice of emergency vagotomy and *Helicobacter pylori* eradication for complicated peptic ulcer in the United Kingdom. *Br.J.Surg.* 2003;90:88-90.
6. Johnson A.G., Reynolds K.W. Techniques of vagotomy. Ed.Arnold,London, 1979;pg.31-33.
7. Guillemin G., Jacquemard P., Berard Ph. Et al. G2 technique: a simplified procedure of reconstitution of the angle of His, applied to the treatment of hiatus hernia and malposition of the greater tuberosity (242 cases) *J.Chir.(Paris)* 1979;116:81-92. (In French).
8. Feliciano D.V. Do perforated ulcers need an acid-decreasing surgical procedure now that omeprazole is available? *Surg. Clin.North Am.* 1992;72:369-380.
9. Donovan A.J., Berne T.V., Donovan J.A. Perforated duodenal ulcer: an alternative therapeutic plan. *Arch.Surg:*1998;133:1166-1171.
10. Stabile B.E. Redefining the role of surgery for perforated duodenal ulcer in this *Helicobacter pylori* era. *Ann.Surg.* 2000;31:159-160.
11. Chernookov A.I., Naumov B.A., Kotaev A. et al. Surgical treatment of patients with perforated peptic ulcers. *Khirurgiia (Mosk)* 2007;6:34-39 (In Russian).
12. Rishko V.V. Application of selective proximal vagotomy in surgical treatment of duodenal ulcer, complicated by perforation and reflux-esophagitis. *Klin Khir.* 2006; 2:5-7 ( In Ukrainian).
13. Tsugawa K., Koyanagy N., Hashizume M. et al. The therapeutic strategies in performing emergency surgery for gastroduodenal ulcer perforation in 130 patients over 70 years of age. *Hepatogastroenterology* 2001;48:156-162.

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