LAPAROSCOPIC POSTERIOR TRUNCAL VAGOTOMY AND ANTERIOR HIGHLY SELECTIVE VAGOTOMY - A CASE REPORT

C K Kum, P Goh

ABSTRACT

Laparoscopic vagotomy provides a viable alternative to expensive long-term treatment with H2 antagonists in patients with intractable peptic ulcer disease. The minimally invasive procedure offers reduced postoperative discomfort and improved cosmesis. Here, we report our first case of the posterior truncal vagotomy and anterior highly selective vagotomy performed laparoscopically for the first time in Asia. The surgery was uneventful. Diet was resumed on day 3 and the patient was discharged on day 4. Post-vagotomy acid secretion tests on the third week revealed a dramatic decrease in acid production. With further experience, laparoscopic vagotomy can be an attractive alternative to long term medication in peptic ulcer disease.

Keywords: Laparoscopy, Vagotomy, Laparoscopic vagotomy, Highly selective vagotomy, Peptic ulcer.

INTRODUCTION

The advent of laparoscopic highly selective vagotomy has provided patients with ulcer diathesis a viable alternative to long term dependency on H2 antagonists. Laparoscopic surgery, in contrast to conventional open surgery, is characterized by short postoperative recovery, brief hospitalization and negligible scars. We report our first case of laparoscopic highly selective vagotomy performed with minimal discomfort to the patient. With this new technique, the disadvantages of ulcer-related surgery are markedly reduced and thus the threshold for selecting patients with intractable ulcer diathesis for surgical treatment should be lowered too.

CASE REPORT

A 47-year-old Chinese man was referred to us for evaluation for his peptic ulcer diathesis. He had a four year history of ulcer disease with multiple endoscopically confirmed recurrences of the ulcer despite adequate treatment with H2 antagonists. The most recent endoscopically revealed one small prepyloric and two small duodenal ulcers. The patient was keen on surgical treatment to alleviate his symptoms. Acid secretion tests were performed prior to surgery (Table I). Laparoscopic posterior truncal vagotomy and anterior highly selective vagotomy was successfully performed. The total duration of the procedure was 150 mins. Postoperatively, the patient was able to have solids on the second day and normal diet the next day. He was discharged on the fourth day. Acid secretion tests with insulin stimulation three weeks later revealed a dramatic improvement (Table I).

Operative Procedure

The objective was to denervate the acid-secreting parietal cells of the stomach with preservation of the pyloric sphinctor control. This was achieved by transecting the main posterior vagus nerve and only branches of the anterior vagus nerve to the lower esophagus, fundus and body of the stomach. The branches of the anterior vagus nerve to the pylorus were preserved (Fig 1).

Table I - Preoperative and postoperative acid secretion levels

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<th>Preop*</th>
<th>Postop#</th>
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<tr>
<td></td>
<td>(meq/hr)</td>
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<tr>
<td>Basal Acid Output</td>
<td>20.44</td>
<td>3.18</td>
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<tr>
<td>Peak Acid Output</td>
<td>36.12</td>
<td>2.56</td>
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<tr>
<td>Maximum Acid Output</td>
<td>33.55</td>
<td>2.25</td>
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* Pentagastrin stimulation
# Insulin stimulation

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Fig 1 - Posterior Truncal Vagotomy and Anterior Highly Selective Vagotomy

The patient was put under general anaesthesia in the usual supine position. Pneumoperitoneum was created with carbon dioxide via a Veress needle inserted through a supraumbilical incision. When an intraperitoneal pressure of 14mmHg was reached, a 11mm trocar was inserted into the supraumbilical site and the laparoscope was introduced. Two more 11mm and three 5mm trocars were also introduced at sites shown in Fig 2.
The anterior vagus nerve was identified at the lower end of the esophagus and traced caudad. Branches of the nerve to the lesser curve of the stomach were doubly clipped and ligated. The dissection was carried up to 7 cm from the pylorus. A final check was made to ensure that the lower esophagus was cleared of all nerve branches except the anterior vagus nerve.

**DISCUSSION**

Until recently, surgical treatment of peptic ulcer disease has necessitated laparotomy with its attendant major drawbacks. Thus surgery was reserved as a last resort only for those with intractable disease or for those who developed complications. The operation of choice for elective cases is highly selective vagotomy which is effective in reducing acid output with the least derangement of normal physiology. The classical technique of highly selective vagotomy is difficult to perform laparoscopically. However, techniques whereby posterior truncal vagotomy together with interruption of the anterior nerve fibres either by an anterior seromyotomy or direct ligation are feasible laparoscopically. Both these methods have been shown by open surgery to be effective in reducing acid secretion with preservation of adequate gastric emptying. Mouiel and Katkhouda demonstrated the feasibility of performing anterior seromyotomy laparoscopically. In our patient, we used the method described by Zucker whereby the fibres from the anterior nerve of Latarjet to the lesser curve are individually ligated. The effectiveness of the technique was attested by the impressive results of decrease in acid secretion and normal gastric emptying.

The development of this minimally invasive procedure associated with little postop discomfort, short hospitalization and cosmetic scars will have a significant impact on the overall management of peptic ulcer disease. The threshold for considering patients for surgery should be lowered proportional to the reduction in morbidity associated with less invasive surgery.

**REFERENCES**