Laparoscopic Nissen Fundoplication: The "Right Posterior" Approach

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The main steps for performing a laparoscopic Nissen fundoplication are described: They start with a "right approach" by dissection of the high lesser curve, near the esophagogastric junction. Then the posterior surface of the stomach is easily visualized by the "posterior approach." The fat pad and both vagal trunks are displaced to the right, avoiding any vagal injury. Two to three short gastric vessels are divided, leaving a loose gastric fundus. A 360° total symmetric and geometric fundoplication is then performed, including the esophageal wall in the most proximal and distal stitch. A final stitch for an anterior fundophrenopexy is performed. This surgical approach has been used in 225 patients with severe chronic pathologic reflux with a 1.3% conversion rate, no mortality, and only one significant postoperative complication. Late evaluation at 5 years after surgery has shown excellent or good results in 85% and fair or poor results in 15% of the patients. (J GASTROINTEST SURG 2005;9:985–991)

KEY WORDS: Laparoscopic, Nissen fundoplication, reflux esophagitis

Nissen fundoplication is the "gold standard" procedure in most surgical centers to treat pathologic gastroesophageal reflux.[1] The laparoscopic approach has shown excellent results in patients with noncomplicated reflux esophagitis and has replaced completely the open approach.[1,2] According to the literature from dedicated centers in North America and Europe, the standard Nissen fundoplication includes the following steps:

- Division of short gastric vessels from a left approach allowing the mobilization of the gastric fundus. However, with this approach, the posterior short gastric vessels are not divided, making this mobilization incomplete.
- Opening of the lesser omentum usually dividing the hepatic branch of the left (anterior) vagal nerve, which represents a risk of late gallstone disease.[3]
- Isolation of the abdominal esophagus through a careful dissection between the right crus and the posterior wall of the esophagus.

With these steps, a floppy wrap can be obtained; nevertheless, one or both vagal trunks may be included in the plication, as well as the gross fatty tissue.

The purpose of the present report is to show how we perform a laparoscopic Nissen fundoplication by a different surgical approach, to see clearly all structures of the esophagogastric junction, to keep fatty tissue away from the plication, to construct a symmetrical plication, and to preserve intact both vagal trunks outside the wrap.

METHODS

We approach the esophagogastric junction via what we call "the right posterior approach." We start the operation by dissecting the lesser curve (right approach) 2–3 cm distal to the esophagogastric junction, just where the anterior and posterior layers of the lesser omentum insert into the lesser curvature.

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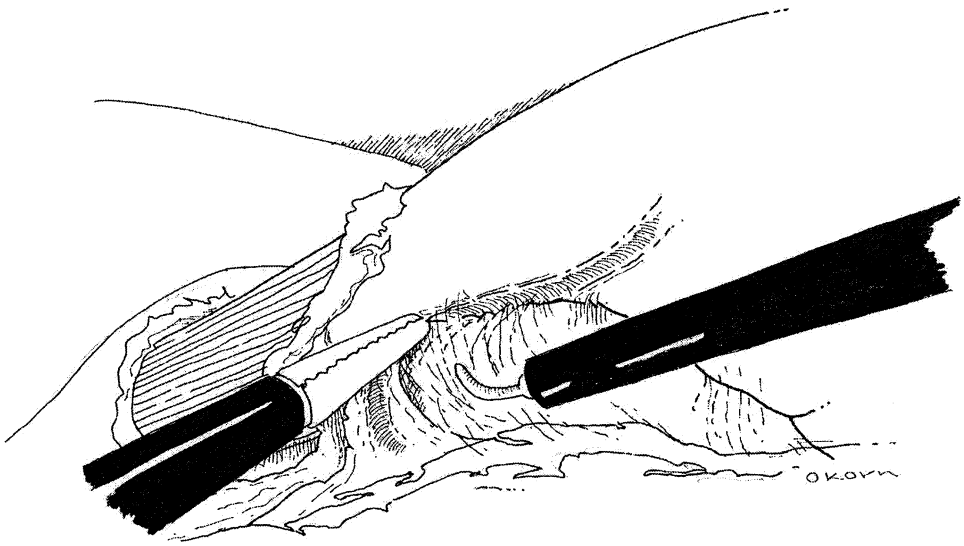

Fig. 1. The beginning of the operation via the "right approach" starts with the section of the anterior and posterior layer of the lesser omentum along the proximal lesser curve, 2–3 cm distal to the cardia.

In this way, we are sure to preserve Latarjet's nerve (Fig. 1). The phrenoesophageal ligament and the fat pad are dissected from the esophagogastric junction and are displaced to the right, including the anterior and posterior vagal trunks, together with the celiac and hepatic branches. Then by the posterior wall of the

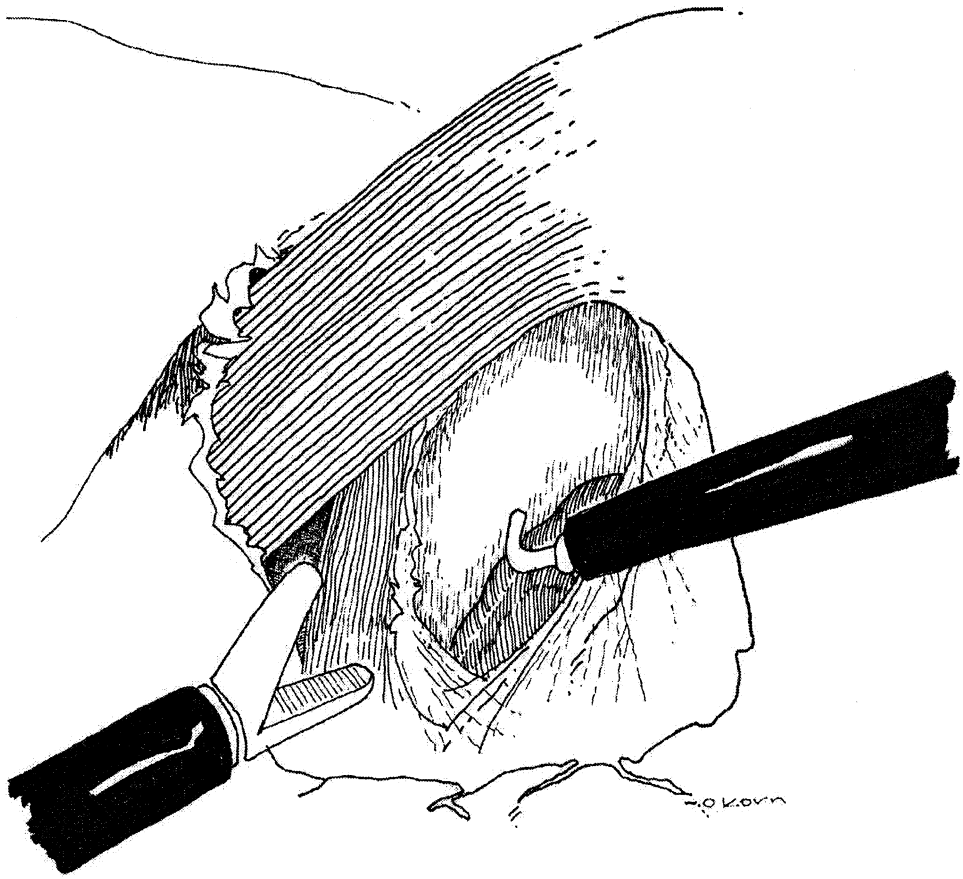

Fig. 2. The "posterior approach" to the short gastric vessels behind the posterior surface of the stomach allows a very clear view of the first short gastric vessels.