Anterior Seromyotomy with Posterior Truncal Vagotomy in Chronic Duodenal Ulcer

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Abstract
Anterior seromyotomy with posterior truncal vagotomy was carried out on 25 patients with chronic duodenal ulcer to evaluate its effectiveness as an acid reducing procedure. There was a 76.7% and 76.8% reduction in basal and maximal acid output respectively (augmented histamine test). Twenty-three patients were asymptomatic at 4 - 6 years' follow-up, while two patients had delayed gastric emptying not necessitating reoperation. There was no mortality. This procedure is a reasonable alternative to highly selective vagotomy.

Key words: Highly selective vagotomy, acid output.

Introduction
Highly selective vagotomy (HSV) gained acceptance in the treatment of chronic duodenal ulcer because it achieves cure or control of the ulcer without disturbing or mutilating the normal anatomy of the upper gastrointestinal tract. Lesser curve superficial seromyotomy was introduced in 1979 to avoid the drawbacks of HSV like the risk of perforation, ischemic necrosis of the lesser curve, inadequate gastric denervation and damage to the nerve of Latarjet. The procedure was modified by Walker and Taylor in 1982. While effectively reducing acid secretion, the procedure proved difficult, particularly when posterior wall seromyotomy was performed in obese patients with narrow costal angle; there was also the risk of leaving some nerve fibres intact. This difficulty was overcome by combining anterior seromyotomy with posterior truncal vagotomy.

The present study was carried out to evaluate the effectiveness of anterior seromyotomy with posterior truncal vagotomy as an acid reducing procedure in the treatment of chronic duodenal ulcer.

Material and Methods
The procedure was carried out on 25 patients (18 males, 7 females; aged 19-55 years, mean 37) with proven chronic duodenal ulcer who had history of ulcer pain (20 cases) and repeated melena (22) or hematemesis (12). The diagnosis was confirmed on barium meal examination (15) and endoscopy (10). The procedure was carried out elecctively and only in uncomplicated cases. Patients with severe duodenal ulcer scarring detected per-operative were also excluded.

An augmented histamine test (0.04 mg/kg body weight) was performed before operation and on the 10th post-operative day. Basal (BAO) and maximal (MAO) acid output were calculated.

The operation was carried out as described by Taylor et al. The abdomen was opened by an upper midline incision. Both anterior and posterior vagal trunks were identified and placed in slings. Posterior truncal vagotomy was carried out. The anterior surface of the stomach was stretched and a 0.5 to 1 cm incision made parallel to the lesser curvature, dividing the serosa and muscle from 7 cm proximal to the pylorus, up across the gastro-esophageal junction, and laterally towards the fundus. Five to six superficial prominent vessels encountered in the line of incision were ligated and divided. An overlap repair of seromyotomy was carried out by a stay stitch taken from the seromuscular layer to the left of the myotomy to overlap the medial edge of the myotomy in an oblique fashion.

Results
Hemoglobin levels ranged from 8.8 to 12.2 g/dl (mean ± SEM 10.4 ± 0.3).

Acid Studies
All the patients showed reduction in basal and maximal acid output after surgery.

Mean ± SEM BAO levels fell from 8.5 ± 0.8 (range 5.0 to 12.4) to 2.0 ± 0.2 (range 1.3 to 3.5) mmol/h, the mean percentage reduction being 76.7% (range 50.0 to 87.9) (P < 0.001).

Similarly, mean MAO levels fell from 20.6 ± 1.0 (range 15.0 to 25.0) to 4.8 ± 0.4 (range 2.7 to 8.0) mmol/h, the mean percentage reduction being 76.8% (range 60.2 to 87.0) (P < 0.001).

Complications
Early post-operative stasis related to the procedure occurred in one case. This however resolved conservatively. There was no operative death.
Patients were followed up regularly for 4-6 years and detailed symptomatic evaluation carried out. Twenty-three patients were asymptomatic and satisfied with their post-operative status. Two patients had delayed gastric emptying (as evidenced on barium meal examination) which however was not severe enough to warrant reoperation. The patients responded well to metoclopramide.

Discussion
Following anterior seromyotomy with posterior truncal vagotomy there was a statistically significant reduction in basal and maximal acid output. The reduction was within the range reported earlier with seromyotomy and HSV. Slight variations in the reduction obtained may be due to intersurgeon differences in achieving complete parietal cell denervation and individual variation in acid secretion and estimation.

There was no mortality and minimal morbidity. Though 4 to 6 years' follow-up may be too short to predict long-term outcome, the present study seems to confirm the effectiveness of anterior seromyotomy with posterior truncal vagotomy in reducing acid secretion. This procedure may be considered as a reasonable alternative to highly selective vagotomy.

References