

# Endoscopic Diagnosis of Recurrent Peptic Ulcer Due to Retained Antrum

Pages with reference to book, From 24 To 25

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## Introduction

Recurrent, peptic ulcer following surgery has a 3% to 10% recurrence rate.<sup>1</sup> Recurrence is due to one of the following causes: incomplete vagotomy, failure of gastric drainage, inadequate gastric resection, Zollinger-Ellison syndrome, hyperplasia of the antral gastric-secreting cells or due to use of non-absorbable sutures. Lack of or incomplete vagotomy has been the most common cause. Gastric ulcer may follow vagotomy and drainage or proximal gastric vagotomy without drainage, and is presumably due to gastric stasis.<sup>2</sup> A less common cause could be retained antrum mucosa when Biliroth II anastomosis is done.<sup>3,4</sup> Fiberoptic endoscopy has been found to be superior over radiology for diagnosis of a recurrent ulcer<sup>5,6</sup>.

## Case Report

J.C.H. a 52-year-old male who was diagnosed as a case of acute gastritis in January, 1968, was admitted for GI bleeding and a duodenal ulcer, in June the same year. In August 1968, he underwent surgery when 75% of his stomach was removed. After this, the patient continued to have off and on black stools until 1974. At that time he had massive GI bleeding with passage of black stools and hematemesis. Prior to that patient was taking antacids as needed and he also had taken some aspirin containing antacids. He was also taking two to three beers per day and up to six to eight glasses of beer over the weekends. In upper GI series there was a suspicion of marginal ulcer and proximal portion of the duodenum looked very suspicious of retained antrum (Fig).



**Fig. Duodenum looking suspicious of retained antrum.**

Upper GI fiberoptic endoscopy was done which revealed a marginal ulcer. The rest of the stomach showed hyperemia with no definite hemorrhagic gastritis. The scope was then advanced into the afferent loop of the anastomosis and biopsy was taken from the most proximal portion of the duodenum. The biopsy revealed gastric antrum mucosa. Due to the presence of retained antral mucosa the patient underwent surgery and one inch of the proximal portion of the duodenum was removed and frozen sections were done. After being assured of no gastric cells in the duodenum, the stump was closed. Tissues removed revealed presence of scarring and gastric antral mucosa. Bilateral vagotomy

was also done. After the operation the patient did very well until 1977 when he was readmitted with GI bleeding. At that time, he had started drinking more heavily. Endoscopy revealed hemorrhagic gastritis and a small marginal ulcer. He was treated conservatively and was strongly advised to stop drinking to which he did adhere. To date, the patient has no recurrence of GI bleeding and is free of symptoms. Hematocrit and hemoglobin have been checked at various times and have been found to be normal.

## Discussion

A recent study by Sakai and his colleagues<sup>7</sup> indicate the prevalence of retained antrum in patients with recurrent ulcer, following Billroth II gastrectomy, to be 26%. At present, literature does not provide any guidelines for the diagnosis of recurrent peptic ulcer. Many methods such as gastric analysis have been used. However, values expected for postgastrectomy patients have not been currently determined.<sup>8</sup> Accurate collection of gastric juices is also difficult in postgastrectomy states.

Recognizing the ulcerogenic properties of retained antrum, surgeons have been more careful in resecting the gastric antrum, totally. However, under certain circumstances such as post-inflammatory scarring and deformation in the regional anatomy, it is difficult to identify the pyloric ring.

Other reasons for retained antrum are carelessness on the part of the surgeon, or some other alteration such as antral mucosa which may extend up to 0.5 cm distal to the pyloric ring<sup>9</sup>.

When antrum is exposed to alkaline media it leads to production of gastrin which in turn stimulates the secretion of acid from the stomach. Retained antral mucosa with Billroth II gastrojejunostomy will be exposed at all times to alkaline media. This will lead to hypersecretion of gastrin which will result in hypersecretion of acid from the gastric mucosa and a recurrent ulcer.

After B-II type gastrectomy the occurrence of elevated acid output accompanied by high levels of circulating gastrin, strongly suggests the presence of retained antrum. The clinical picture will be of a recurrent ulcer. It will be very similar to the Zollinger-Ellison syndrome.<sup>8</sup>

Correct differential diagnosis is very important for adequate treatment which is different for each pathology. In case of retained antrum surgical removal is the best choice, however, preoperative differentiation may be quite difficult because the radiological studies frequently fail to establish the diagnosis of retained antrum<sup>8,10,11</sup>. Basal gastrinemia in both conditions is usually high and a significant number of cases have overlapping values. Patients with Zollinger-Ellison syndrome tend to have a higher basal gastrinemia. Intravenous secretin infusion, which reduces gastrin secretion in patients with retained antrum and induces gastrinaemia in patients with gastrinoma<sup>12,13</sup> is very useful for differential diagnosis. However, a positive result is present in 90% of the cases<sup>9</sup>.

Fiberoptic endoscopy has made a great contribution in establishing the diagnosis of recurrent post-surgical ulcer. Its indication for diagnosis of retained antrum has not been considered and in the literature there are few reports<sup>14,15</sup>

The above-reported case and the cases discussed by Sakai and associates<sup>7</sup> indicate the usefulness of the test. They were able to reach the duodenal stump in 20 (86%) out of 23 patients with recurrent peptic ulcer. Failure to reach the end of the duodenal stump was due to a long afferent loop or stricture due to scarring. The endoscopic picture of retained gastric antrum is quite singular. In contrast to duodenal mucosa it is smoother and reddish. After the diagnosis has been made, the definite treatment would be removal of all the antral tissue from the duodenum before closing the duodenal stump. This can be made certain by doing a frozen section of the circumference of the duodenal stump during surgery for microscopic examination. If gastric antrum is found in the biopsy during surgery a more distal duodenal resection is done and dissected tissue is examined microscopically until all gastric tissue is removed from the duodenal stump.

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