

# CONTENTS

Preface	xv
PART I: ALKALINE REFLUX GASTRITIS	
Alkaline Reflux Gastritis: Mechanism of Injury	201
JOHN W. HARMON, BARBARA L. BASS, AND SHMUEL BATZRI	
<p>"Alkaline reflux gastritis" is a misnomer for postgastrectomy gastritis because some acid secretion persists in most gastrectomy patients. The interactions between this acid and refluxed bile account for the mucosal injury and suggest therapeutic strategies.</p>	
Detection and Measurement of Duodenogastric Reflux (Alkaline Reflux)	207
TIMOTHY H. BROWN	
<p>Duodenogastric reflux can be a difficult condition to diagnose and a number of techniques have been developed to measure this. The historical development of duodenogastric reflux measurement, and the current methods of assessment, which include gastric aspiration and bile acid measurement, HIDA scintigraphy and 24 hour gastric pH monitoring, are reviewed.</p>	
Endoscopic Diagnosis of Alkaline Reflux Gastritis	221
TALMADGE A. BOWDEN, JR.	
<p>The endoscopic characteristics of alkaline reflux gastritis are observable enterogastric reflux, bile pooling, bile staining of the gastric mucosa and conspicuous erythema, edema, and friability of the gastric remnant. When these findings are strongly correlated with the histological picture of foveolar hyperplasia and combined with scintigraphic detection of enterogastric reflux and positive provocative testing, the end product should be a more homogeneous group of patients who are likely to respond to various treatments for symptomatic reflux.</p>	

## Primary Enterogastric Reflux Gastritis

GEORGE F. GOWEN

Patients aged 30-60 years who have constant burning mid epigastric pain, worse after meals and associated with nausea bilious regurgitation and vomiting should be evaluated for enterogastric reflux gastritis and esophagitis. They will have endoscopic evidence of a bile pool in the stomach, histologic evidence of gastritis or ulcer submucosal fibrosis. Hypochlorhydria, weight loss and anemia develop as the disease progresses.

## Harmful Effects of Enterogastric Reflux in the Stomach

WALLACE P. RITCHIE, JR.

The gastric mucosa contains a series of interrelated "resistance" mechanisms that serve to protect it from a very hostile ambient environment. Certain factors in upper intestinal content, particularly the bile acids, can overwhelm some or all of these mechanisms with a variety of untoward physiologic consequences. Clinical disease entities putatively ascribed to excessive enterogastric reflux include type I benign gastric ulcer, posttraumatic stress ulcer, and the elusive postgastrectomy syndrome, alkaline reflux gastritis.

## The Duodenal Switch Operation for Duodenogastric Reflux

PAUL WILSON, MARCO ANSELMINO, AND RONALD A. HINDER

The duodenal switch operation is a suprapapillary Roux-en-Y duodenojejunostomy that leaves the antroduodenal unit intact while diverting pancreatobiliary secretions into the proximal jejunum. The benefits of the duodenal switch arise from the minimal dissection required, lack of need for a vagotomy and the preservation of the intact stomach in continuity with the proximal duodenum.

## Special Comment

JOHN P. DELANEY

## Surgical Treatment of Alkaline Reflux Gastritis

JOHN L. SAWYERS AND J. LYNWOOD HERRINGTON, JR.

Patients should have gastric emptying studies as part of the preoperative evaluation for a Roux-en-Y procedure. If delayed emptying is present, a high (75% to 80%) subtotal gastrectomy rather than an antrectomy is done. The results in the early years after the Roux-en-Y remedial operation have been good in most patients; however, the percentage of satisfactory results has gradually decreased to 60% over a 15 year follow up period.

## Special Comment

MARK A. MALANGONI

## Surgical Treatment of Alkaline Reflux Gastritis

THOMAS N. WALSH AND THOMAS P. J. HENNESSY

Gastric pH monitoring when analyzed in conjunction with esophageal pH profiles is of great value in assessment of patients for surgical treatment. We continue to favor Roux-en-Y reconstruction for patients with enterogastric reflux after gastric operations.

- Special Comment 272  
THOMAS R. GADACZ, WENDY BRICK, AND SHERYL DECKER
- The Role of Provocative Testing to Select Patients for Surgical Treatment of Alkaline (Bile) Reflux Gastritis 275  
LYNT B. JOHNSON AND ANDREW L. WARSHAW
- Accurate diagnosis of alkaline (bile) reflux gastritis and selection for diversion surgery has proven to be difficult. Provocative testing by intragastric installation of sodium hydroxide is simple and more accurate than endoscopic evaluation and gastric mucosal biopsy.
- Alkaline Reflux Gastritis: An Analysis of the Failures of Biliary Diversion Procedures 281  
OLIVIER F. HUBER AND CARLOS A. PELLEGRINI
- The mean failure rate of revisional operations for postoperative alkaline reflux gastritis is 33%. To improve these results, patients must be carefully selected. Associated functional or anatomic gastric emptying disorders should be identified by preoperative testing. The indications for synchronous vagotomy must be carefully balanced and the risk of a postoperative Roux syndrome should be considered.
- PART II: DELAYED GASTRIC EMPTYING AFTER GASTRIC SURGERY 290
- The Effects of Vagotomy, Gastrectomy, and the Roux-en-Y Anastomosis on Gastric Motility and Emptying  
LELAN F. SILLIN AND ALAN WOODWARD
- The normal control of gastric emptying is a complex phenomenon dependent on the continuity of the innervated stomach and small intestine. Surgical disruption of the integrity of the gastrointestinal tract and its vagal innervation produces complex changes in the motility of the gut and alters the rate of luminal transit.
- Treatment of Gastric Stasis in the Early Postoperative Period 302  
GERALD M. LARSON
- Delayed gastric emptying is a problem in 5-20% of patients after gastric surgery. In this article an approach to treating postoperative gastric stasis is provided with special emphasis on the value of nutritional support, the role of drug therapy, and the decision to reoperate.
- Etiology and Treatment of the Roux Syndrome 308  
STEPHEN B. VOGEL AND MICHAEL P. HOCKING
- Is the Roux syndrome caused by stasis in the stomach, the Roux limb or both? Our bias favors a clinically distinct syndrome separate from the postvagotomy atony and postgastrectomy gastroparesis. We are currently evaluating a group of patients with combined alkaline gastritis and delayed gastric emptying by conversion to an 80% Billroth II gastric resection and a distal Braun enteroenterostomy to avoid a Roux-en-Y.

## Electrical Pacing for Altered Gastric Emptying After Gastric Operations

JAMES M. BECKER AND NATHANIEL J. SOPER

Gastric operations may result in disorders of gastrointestinal motor function which are refractory to conventional dietary or pharmacologic therapy. Motility is controlled by electrical potential changes known as pacesetter potentials which determine the time, direction, and speed of smooth muscle contraction. They can be controlled by electrical stimulation of the bowel, thereby altering gastrointestinal motility. Experimental studies have demonstrated the safety of gastrointestinal electrical pacing and its potential in treating these postoperative disorders of motility.

## Five Types of Partial Obstruction Causing Delayed Gastric Emptying After the Roux Y Anastomosis

GEORGE F. GOWEN

Thirty percent of patients following the Roux-Y anastomosis may develop delayed gastric emptying. Five types of obstruction have been identified and once corrected, the patients have normal gastric emptying. Upper GI endoscopy is the most accurate method of diagnosis since it allows identification of the site and cause of the obstruction, and in two of the five types (I,IV) it allows endoscopic correction of the problem.

## Alternative Operations for the Treatment of Alkaline Reflux Gastritis

ROBERT C. MCINTYRE, JR. AND GREG VAN STIEGMANN

Alternatives to the Roux-en-Y procedure include jejunal interposition, and the Tanner 19 procedure. A newer technique suited for patients with a Billroth II and a gastrojejunostomy is exclusion jejunoduodenostomy. Exclusion jejunoduodenostomy is our choice for patients with previous gastrojejunostomy or Billroth II reconstruction who have normal gastric emptying and no symptoms of the dumping syndrome.

## Gut Hormones and Prokinetic Drugs as Treatment of Gastric Stasis After Gastric Operations

B. MARK EVERS

Postoperative gastric stasis is uncommon but not rare. Treatment options are limited; however, gastric prokinetic agents should be considered as an alternative to surgery.

## Special Comment

BRUCE SCHIRMER

## Anticipating and Avoiding Postgastrectomy Stasis Problems

KEVIN E. BEHRNS, AND MICHAEL G. SARR

Acute or chronic gastric stasis is the result of physiologic pathophysiologic disturbances in normal gastric motor activity. Appropriate medical management or the need for operative intervention requires an understanding of the factors influencing gastric motility. Certain gastric motor disorders can be anticipated or potentially avoided.

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Special Comment J. DAVID RICHARDSON	366
Surgical Treatment of Delayed Gastric Emptying After Gastric Operations TADEUSZ POPIELA AND JAN KULIG	368
<p>In a series of 2200 patients who had gastric operations, delayed gastric emptying during the first 14 days occurred in 51 patients (2.3%) and responded in most instances to conservative therapy. Delayed gastric emptying persisting for 14 or more days occurred in 191 patients (8.6%) and was more likely to occur following remedial operations for previous gastric surgery and after operations for obstructive disease.</p>	
Special Comment PHILIP E. DONAHUE	381
Index	383