

Surgery of The Stomach (5)

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Management of gastric carcinoma

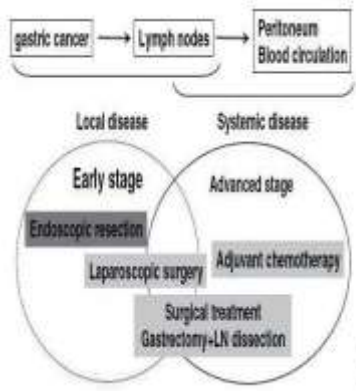
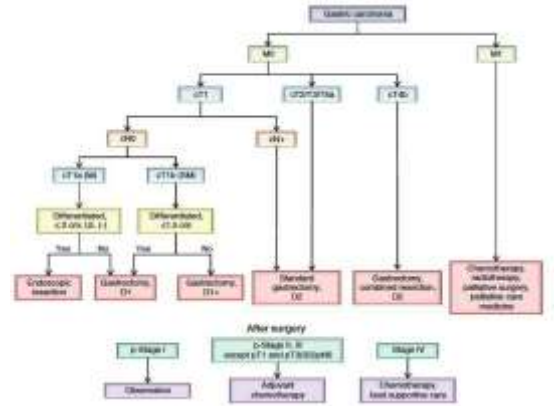


Fig. 1. Treatment strategy for gastric cancer. LN, lymph node



Extent of Lymphadenectomy

The Japanese have labeled all the lymph node stations which potentially drain the stomach. Generally these are grouped into level N1 (e.g., stations 1–6), level N2 (e.g., stations 7–11), and level N3 (e.g., stations 12–16) nodes. The nodal stations defined as level N1, N2, and N3 varies depending on the location of the tumor. In general, N1 nodes are within 3 cm of the tumor, N2 nodes are along the celiac branches and N3 nodes are the most distant from the tumor (portal triad, retropancreatic, mesenteric root, middle colic, para-aortic). The operation described above, by far the most commonly performed procedure in the United States for gastric cancer, is called a D1 resection because it removes the tumor and the N1 nodes. The standard operation for gastric cancer in the Orient is the D2 gastrectomy, which involves a more extensive lymphadenectomy (removal of N1 and N2 nodes). In addition to the tissue removed in a D1 resection, the standard D2 gastrectomy removes the peritoneal layer over the pancreas and anterior mesocolon, along with nodes along the hepatic and splenic arteries, and the crural nodes. Splenectomy and distal pancreatectomy are not routinely performed, because clearly this has been shown to increase the morbidity of the operation. Randomized prospective trials have not confirmed a survival advantage for the more extensive lymphadenectomy, but the morbidity and mortality in the D2 group was higher

LN number		Anterior	Middle	Site of cancer	
				Cardia	Cardia and esophagus
1	Right cardia	N1	N1	N2	N1
2	Left cardia	N1	N1	N2	N1
3	Lower curve	N1	N1	N2	N1
4a	Stom gastric	N1	N1	N2	N1
4b	Left gastroepiploic	N1	N1	N2	N1
4c	Right gastroepiploic	N1	N1	N2	N2
5	Suprapyloric	N1	N1	N2	N2
6	Infrapyloric	N1	N1	N2	N2
7	Left gastric artery	N2	N2	N2	N2
8a	Anterior hepatic artery	N2	N2	N2	N2
9	Coeliac artery	N2	N2	N2	N2
10	Splenic hilum		N2	N2	N2
11	Splenic artery		N2	N2	N2
12	Intrahepatic			N2	N2
13	Crural nodes			N2	N1
14	Lower esophageal				N2
15	Supradiaaphragmatic				N2

The nodes in boxes 13–14 are not routinely removed in a D1 or D2 gastrectomy.

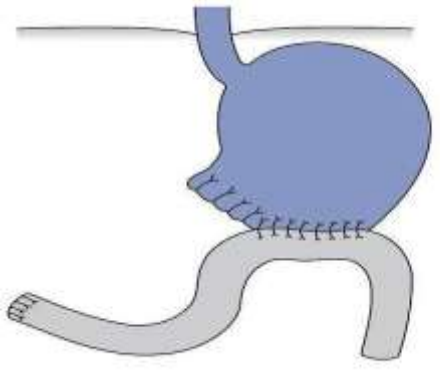
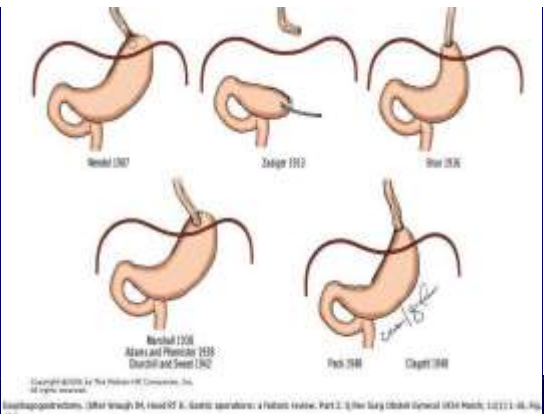
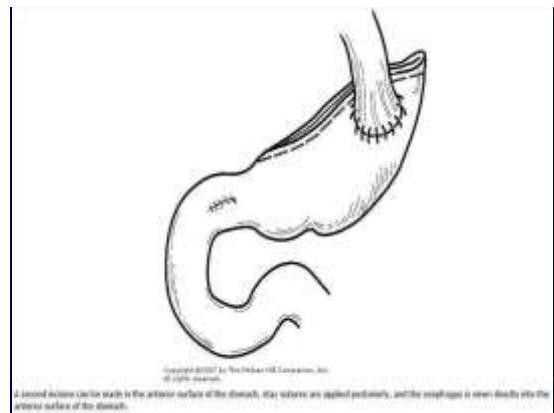
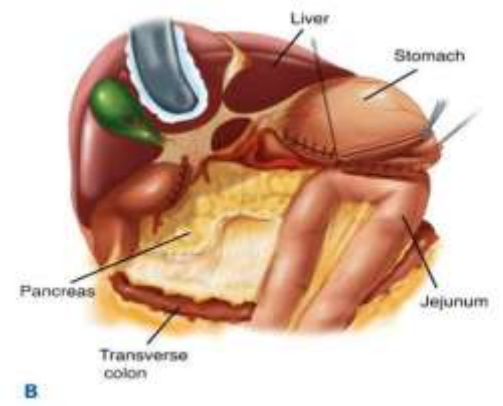


Figure 3-7 • Billroth II reconstruction after antral gastric cancer resection.



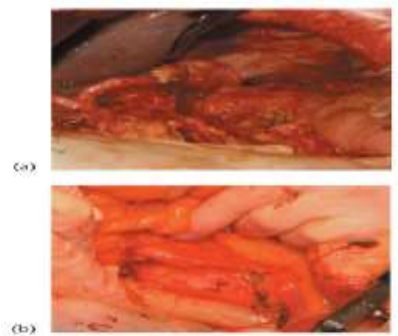
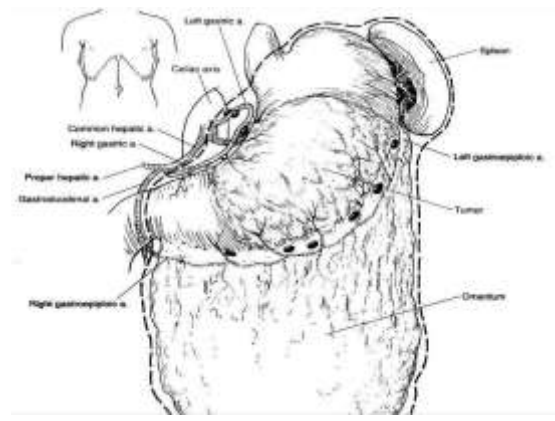
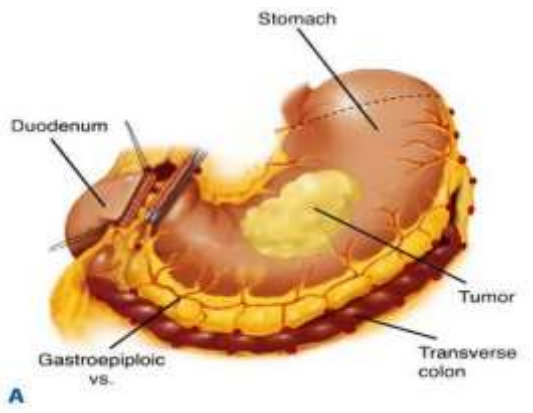
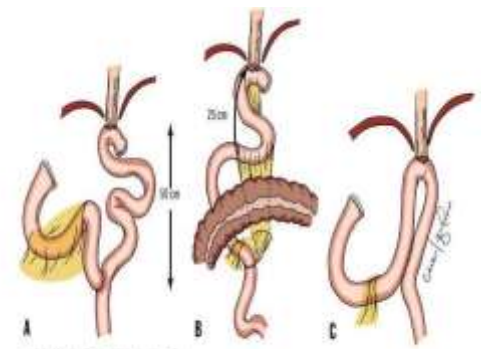


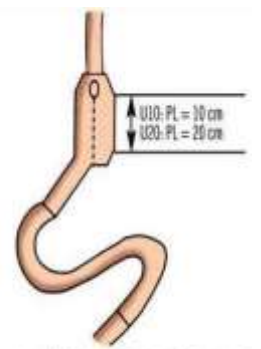
Figure 26.12 D₂ total gastrectomy with level 2 nodal clearance for gastric cancer: (a) nodal clearance of supracolic compartment showing the bare common hepatic and splenic arteries; (b) nodal clearance of infracolic compartment exposing aorta and vena cava.



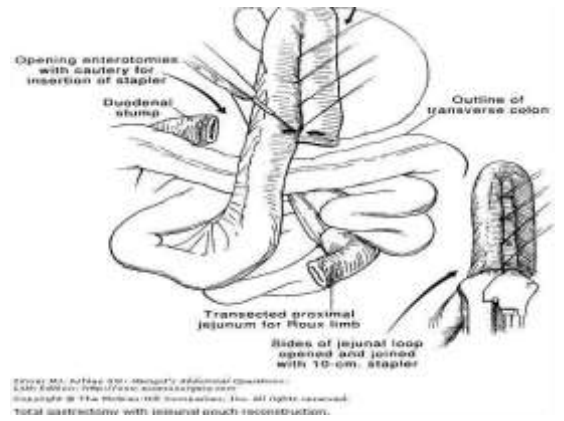
Source: (Kurozumi) FC, Anderson DR, Miller TR, Quinn RL, Hunter JG, Pollack RE. *Schwartz's Principles of Surgery*, 9th Edition. <http://www.accessmedicine.com>. Copyright © The McGraw-Hill Companies, Inc. All rights reserved.
Reconstruction after total gastrectomy. Jejunal pouch (not shown here) should be considered.



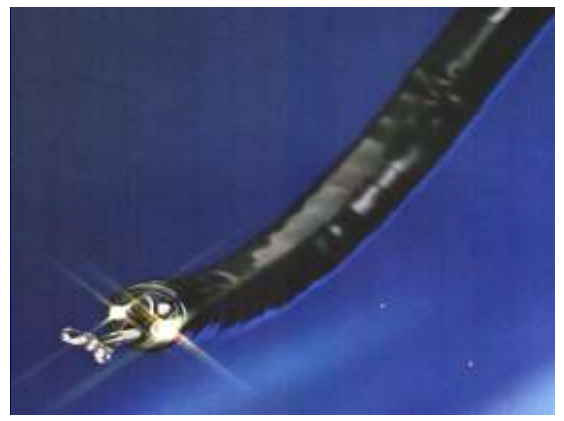
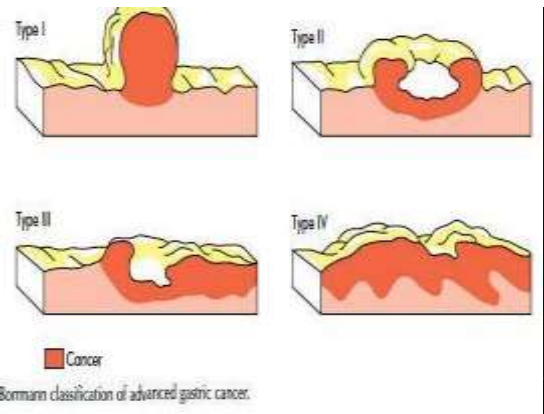
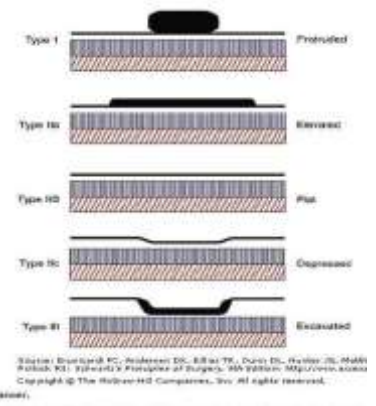
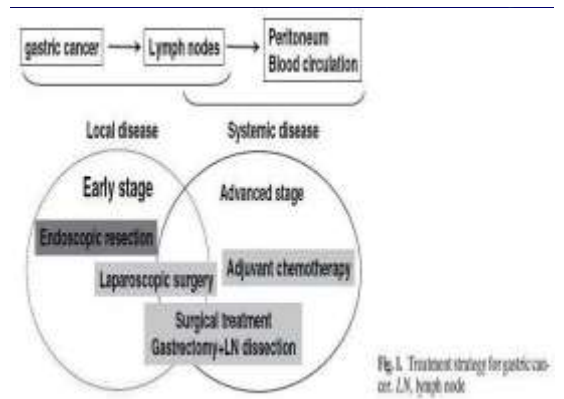
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Reconstructive procedures for total gastrectomy: A, Roux-Y; B, jejunum interposition; C, Omega gastrojejunostomy. (After Wyse LM, Wastell C. *Surgery of the Stomach and Duodenum*, 4th ed. Boston: LBA, 1985, pp 254.)

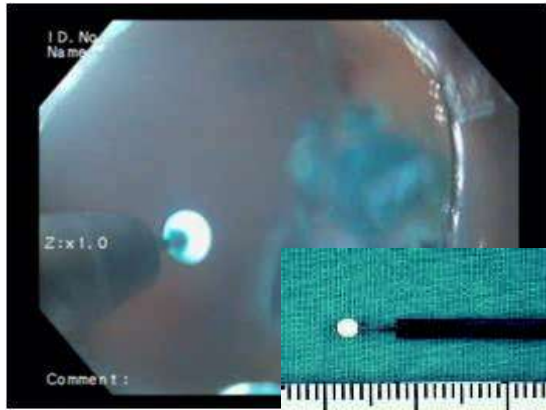
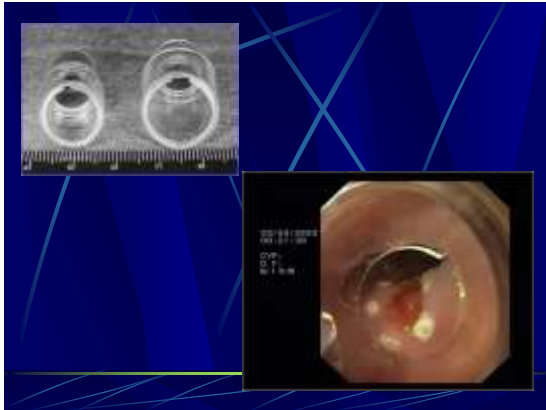
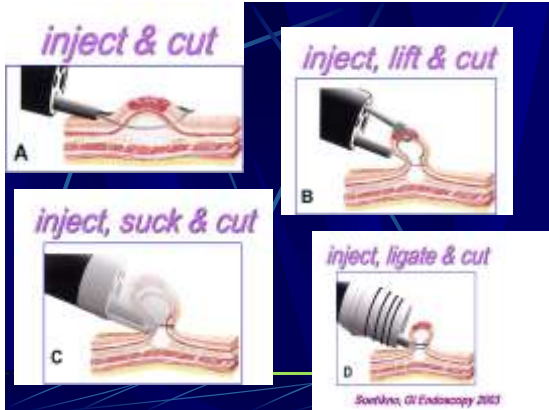
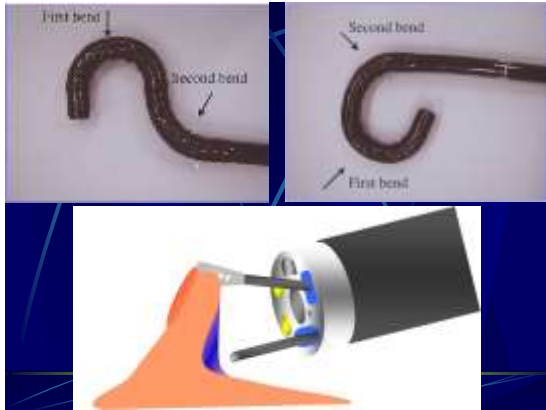


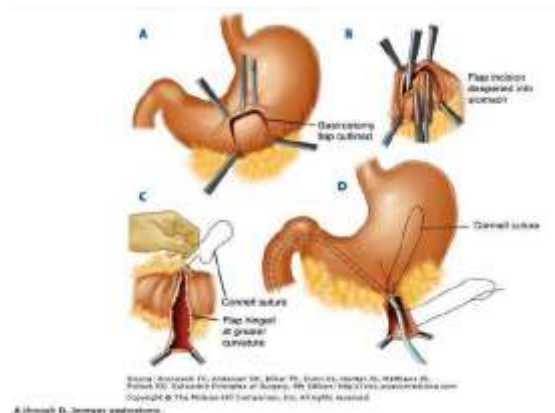
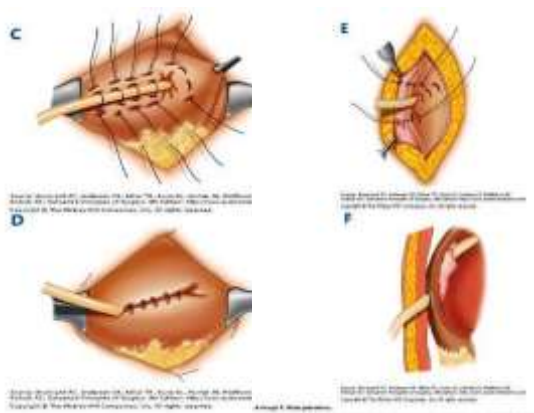
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Jejunum pouch: small and large pouch versions with 10 cm and 20 cm pouch lengths. PL, pouch length.



Advanced therapy for early gastric carcinoma
Endoscopic sub mucosal resection (ESR)







Bariatric surgery and the stomach

Table 27-1 Classification of Obesity by Body Mass Index (BMI)

Classification	BMI Range (kg/m ²)
Normal weight	20-25
Overweight	26-29
Obese	30-34
Severely obese	35-49
Superobese	≥50

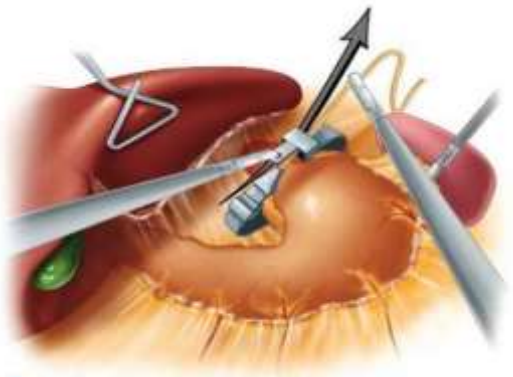
Table 27-3 Types of Commonly Performed Bariatric Operations by Mechanism of Action

Restrictive
Laparoscopic adjustable gastric banding (LAGB)
Sleeve gastrectomy (SG)
Vertical banded gastroplasty (VBG)*
Malabsorptive
Biliopancreatic diversion (BPD)
Jejunoleal bypass (JIB)*
Combined restrictive and malabsorptive
Roux-en-Y gastric bypass (RYGB)
BPD with duodenal switch (DS)

* Now rarely performed and of historic interest only.



Source: Brunicardi PG, Anderson DR, Billiar TR, Dunn P, eds. *Textbook of Surgery: Principles and Practice*, 8th edn. Copyright © The McGraw-Hill Companies, Inc. All rights reserved.

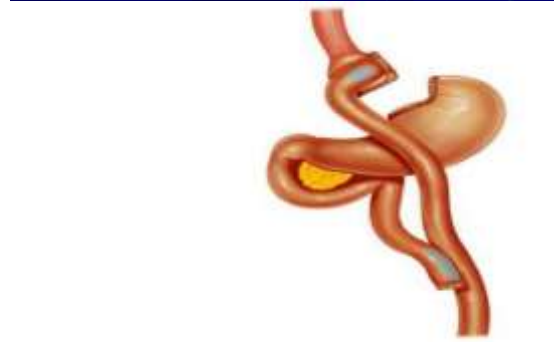


A



Duodenal switch operation.

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Configuration of gastric bypass.

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Configuration of biliopancreatic diversion.

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Configuration of the duodenal switch.

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Completed sleeve gastrectomy.

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