Benign Gastric and Duodenal diseases

FAHAD BAMEHRIZ, MD

Ass.Prof Collage of Medicine, King Saud University

Consultant Advanced Laparoscopic and Robotic surgery

Objectives

- Definition
- Presentation
- Diagnosis
- treatment

THE BEST REFERNCE

- CURRENT

  Diagnosis & Treatment

  Surgery

- **By Gerard M. Doherty**

PEPTIC ULCER

- Esophagus
- Duodenum
- Stomach
- Jejunum after surgical construction of agastrojejunostomy
- Ileum in relation to ectopic gastric mucosa in Meckles diverticulum

Introduction

- Men are affected three times as often as women
- Duodenal ulcers are ten times more common than gastric ulcers in young patients
- In the older age groups the frequency is about equal

Presentation

- **P**ain
- **V**omiting
- **B**leeding
- Perforation
- Obstruction

DUODENAL ULCER

- Epigastric pain : area, mid-day, noon,night
- **Daily cycle of the pain** is often characteristic
- **Relieved by food**
- Normal or increased acid secretion
- **Common in young – middle age male**
- 95% in duodenal bulb (2cm)
- 90% principle cause is **H pylori** (GNCB aeroph)

GASTRIC ULCER

- Epigastric area pain
- **Increase by food**
- **Common in 40-60 years male**
- 95% along lesser curve
- Types :

  - Type 1 : in incisura angularis & normal acid
  - Type 2: prepyloric and DU & high acid
  - Type 3: antrum duo to NSAID
  - Type 4: at GEJ

Diagnosis

- Epigastric area pain and tenderness
- **EGD**
- Gastric analysis (above 200 pg/L)(basal vs maximal)
- Gastrin serum level (severe or refractory)
- Contrast meal (show complication)

TREATMENT

- Medical Treatment (80% in 6 weeks)

  -H2 antagonsis (zantac……)

  - Proton pump inhibetors (omperazol…..)

  - H.pylori eradication (amoxicillin , clarithro..)

- Surgical Treatment

I. Vagotomy

II. Antrectomy and vagotomy

III. Subtotal gastrectomy

Complications of surgery for peptic ulcer

- Early Complications (leakage, bleeding, retension)
- Late Complications

1. Recurrent ulcer (marginal ulcer, stomal ulcer ,anastomotic ulcer)
2. Gastrojejunocolic and gastrocolic fistula
3. **Dumping syndrome**
4. Alkaline gastritis
5. Anemia (Iron defi and vitB12 …)
6. Postvagotomy diarrhea
7. Chronic gastroparesis

ZOLLINGER-ELLISON SYNDROME (Gastrinoma)

- Peptic ulcer disease (often severe) in 95%
- Gastric hypersecretion
- Elevated serum gastrin
- Single one is malignant
- Multiple is benign (MEN 1)
- GASTRIN LEVEL IS MORE THAN 500 pg/ml
- CT Scan, somatostatin scan
- Portal vein blood sample

Treatment

- Medical Treatment
- Surgical Treatment

UPPER GASTROINTESTINAL HEMORRHAGE

- Hematemesis
- Melena
- hematochezia

Causes of massive upper gastrointestinal hemorrhage

	Relative Incidence	
Common causes		
peptic ulcer		45%
Duodenal ulcer	25%	
Gastric ulcer	20%	
Esophageal varices		20%
Gastritis		20%
Mallory-Weiss syndrome		10%
Uncommon causes		5%
Gastric carcinoma		
Esophagitis		
Pancreatitis		
Hemobilia		

MALLORY-WEISS SYNDROME

- 10% of UGIB
- 1-4cm longitudinal tear in gastric mucosa at EGJ
- Forceful vomiting
- EGD
- 90% bleeding stops spontaneously by cold gastric wash, EGD- cautery, surgery

How do you manage GI bleeding ?

- **ABC** : to stabilize the patient first
- Short History & Short Physical Examination (DIRECT)
- COMMON DX
- Investigations: Blood and EGD
- Therapeutic options : EGD vs Angiogram vs Surgery

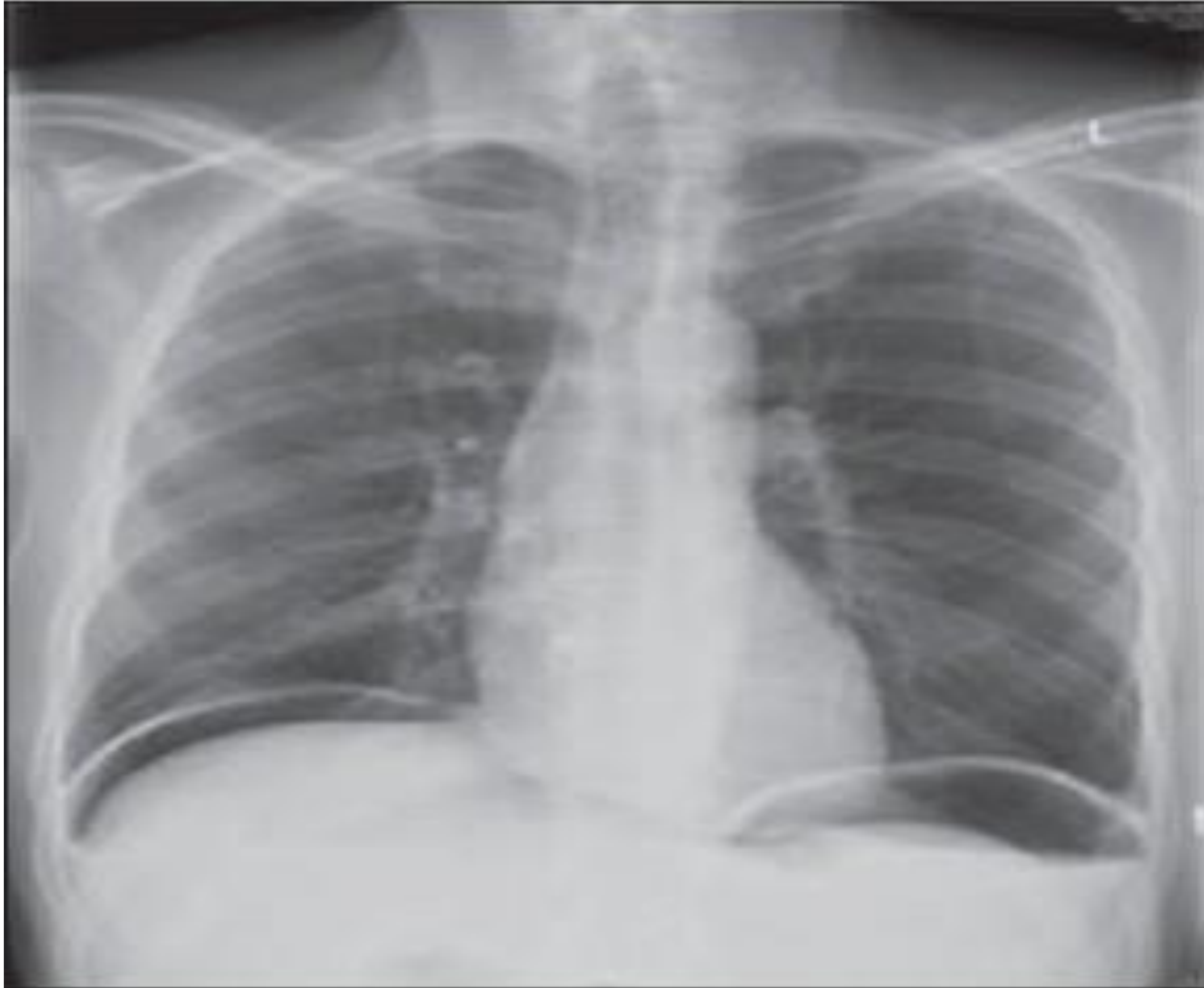
PYLORIC OBSTRUCTION DUE TO PEPTIC ULCER

- Medical Treatment
- Surgical Treatment

PERFORATED PEPTIC ULCER

- Locate anteriorly
- High risk : female, old age, gastric one
- Acute presentation
- X-ray: free air (85%) & fill 400 cc air by NGT
- Treatment : NGT, ABS, Surgery

Air under diaphragm - perforated DU



STRESS GASTRODUODENITIS, STRESS ULCER & ACUTE HEMORRHAGIC GASTRITIS

- Stress Ulcer -----shock &sepsis
- Curling' s ulcers----burns
- Cushing' s Ulcer ----CNS tumor, injury (more to perforates, high acid production
- Acute Hemorrhagic Gastritis

GASTRIC POLYPS

- Types :
  - Hyper plastic
  - Adenomatous
  - inflammatory
- Affecting distal stomach
- Presentation by anemia
- EGD
- R/O malignancy

GASTRIC LEIOMYOMAS

- Common submucosal growth
- Asymptomatic & massive bleeding
- EGD & CT Scan
- **Do not biopsy**
- Surgical wide excision

MENETRIER' S DISEASE

- **Giant hypertrophy of the gastric rugae**
- Present with hypoproteinemia
- Edema, diarrhea, weight loss
- Treatment : atropine, omperazole, H,pylori eradication …..rarely is gastrectomy

PROLAPSE OF THE GASTRIC MUCOSA

- Occasionally accompanies small gastric ulcer
- Vomiting and abdominal pain
- X-ray : antral folds into duodenum
- Antrectomy with Billroth 1

GASTRIC VOLVULUS

- Its longitudinal axis(organo-axial volvulus):

  - More common

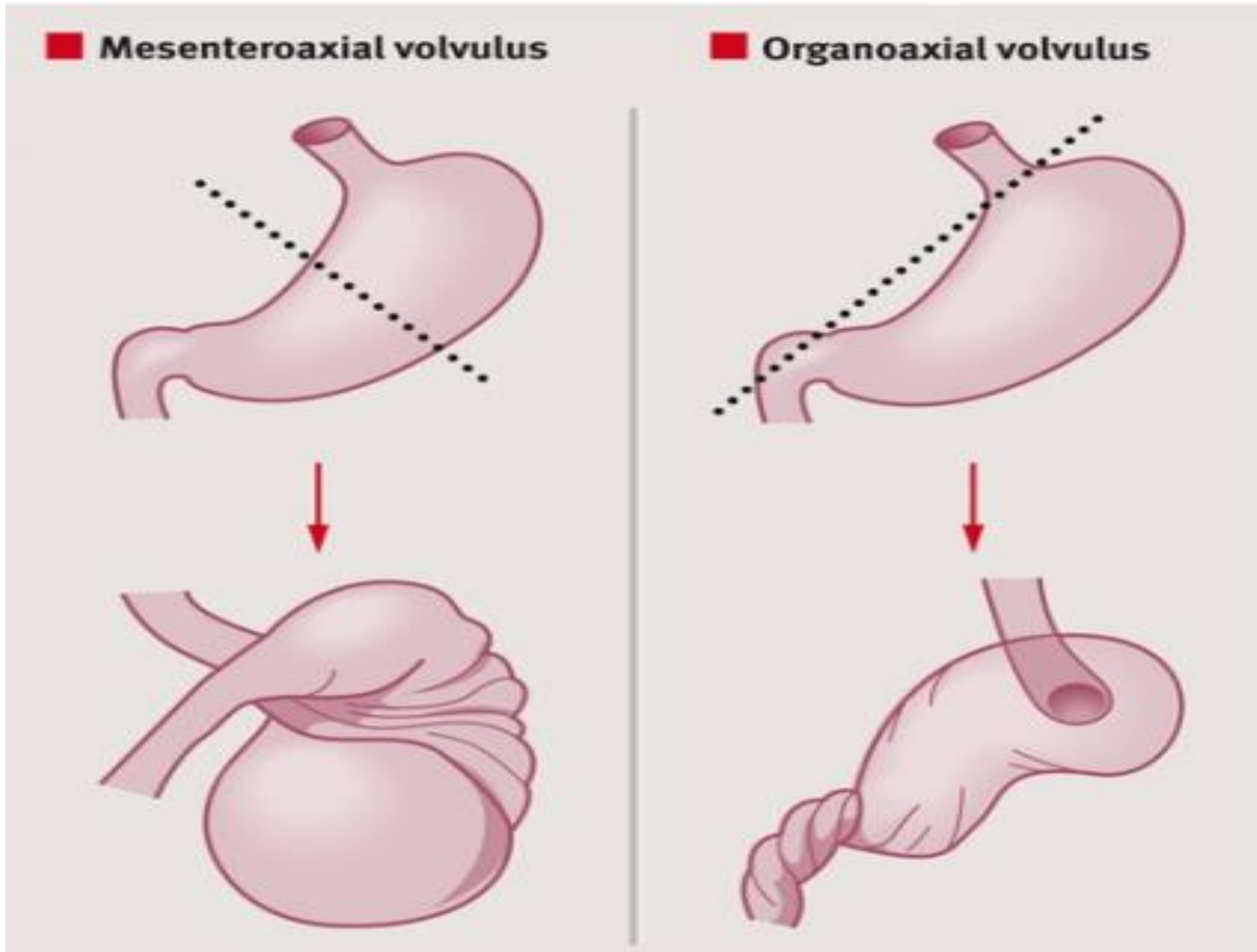
  - Associated with HH

- Line drawn from the mid lesser to the mid greater curvature(mesenterioaxial volvulus)
- Present with :
- Severe abdominal pain and Brochardt"s triad

Brochardt's triad

1. Vomiting followed by retching and then inability to vomit
2. Epigastric distention
3. Inability to pass a nasogastric tube

Types of GV



GASTRIC DIVERTICULA

- Uncommon
- Asymptomatic
- Weight loss, diarrhea
- EGD, X-ray
- ?? surgery

BEZOAR

- Concretions formed in the stomach
- Types:

  - Trichobezoars: hair

  - Phytobezoars: vegtab
- Presentation by obstruction
- EGD, X-RAY
- SURGICAL REMOVAL

DUODENAL DIVERTICULA

- 20% OF POPULATION
- Asymptomatic
- 90% medial aspect of the duodenum
- Rare before 40 years of age
- Most are solitary and 2.5 cm peri-ampullary of vater

Benign Duodenal Tumors

- Brunner's gland adenomas
- Carcinoid tumors
- Heterotopic gastric mucosa
- Villous adenomas

SUPERIOR MESENTERIC ARTERY OBSTRUTION OF THE DUODENUM

- Obstruction of the third portion of the duodenum -- compression SMA and Aorta
- Appears after rapid weight loss following injury
- Distance between two vessels is 10-20 mm

- Proximal bowel obstruction symptoms and signs
- CT Scan
- bypass

REGIONAL ENTERITIS OF THE STOMACH & DUODENUM

- Food poising
- Pain and diarrhea
- Clinical DX
- observation

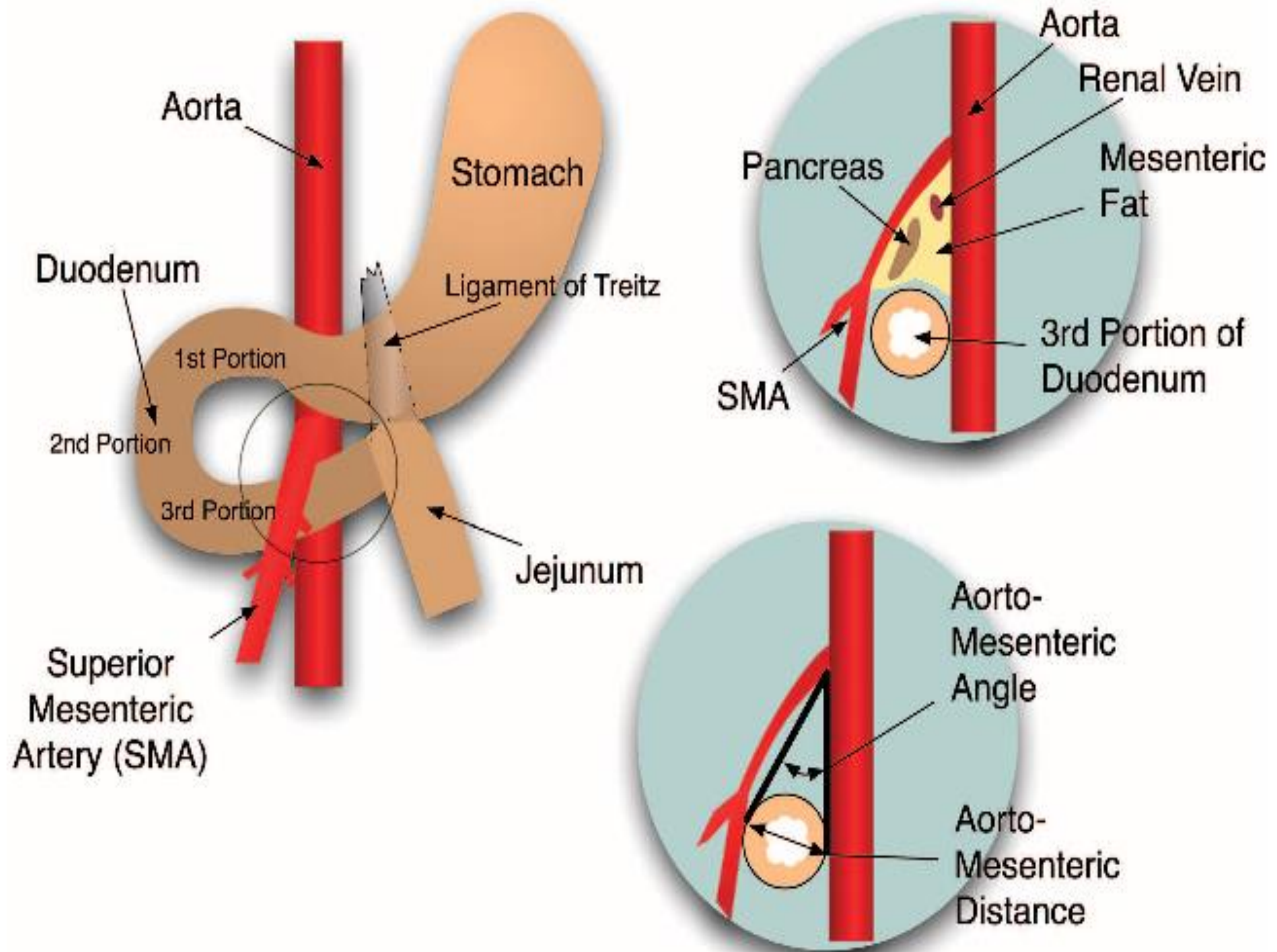
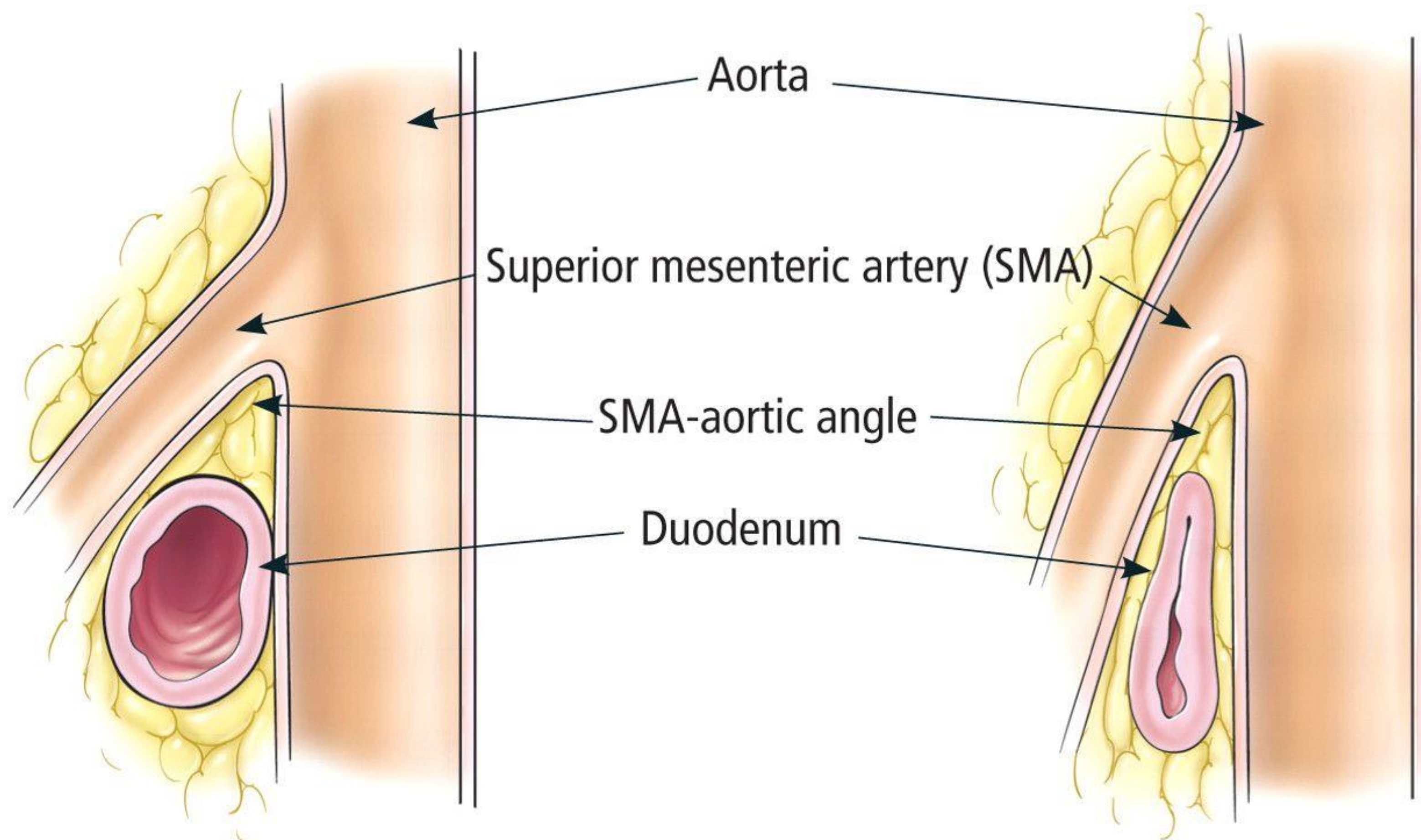


FIGURE 1 Abdominal anatomy showing aortomesenteric


Aorta
Superior mesenteric artery (SMA)
SMA-aortic angle
Duodenum

Gastric Malignant Tumor

- Carcinoma
- Lymphoma
- Leiomyomas
- GIST (GastroIntestinalStromalTumor)
- Metastases (Melanoma, OTHERS)

Gastric Carcinoma

- Incidence :

1- Old male,

2- low dietary intake of vegetable&F, High starch

- Presentation: Pain, Vomiting, Bleeding

GC TYPES

- ADENOCARCINOMA
- SQUAMOUS CELL TUMOR

GC Adenocarcinoma Types

- Ulcerating carcinoma (25%)
- Polypoid carcinoma (25%)
- Superficial Spreading carcinoma (15%)
- Linitis plastica (10%)
- Advanced carcinoma (35%)

- Intestinal type vs Diffuse type

GC Diagnosis

- Clinical presentation
- EGD & BIOPSY
- Staging : TNM

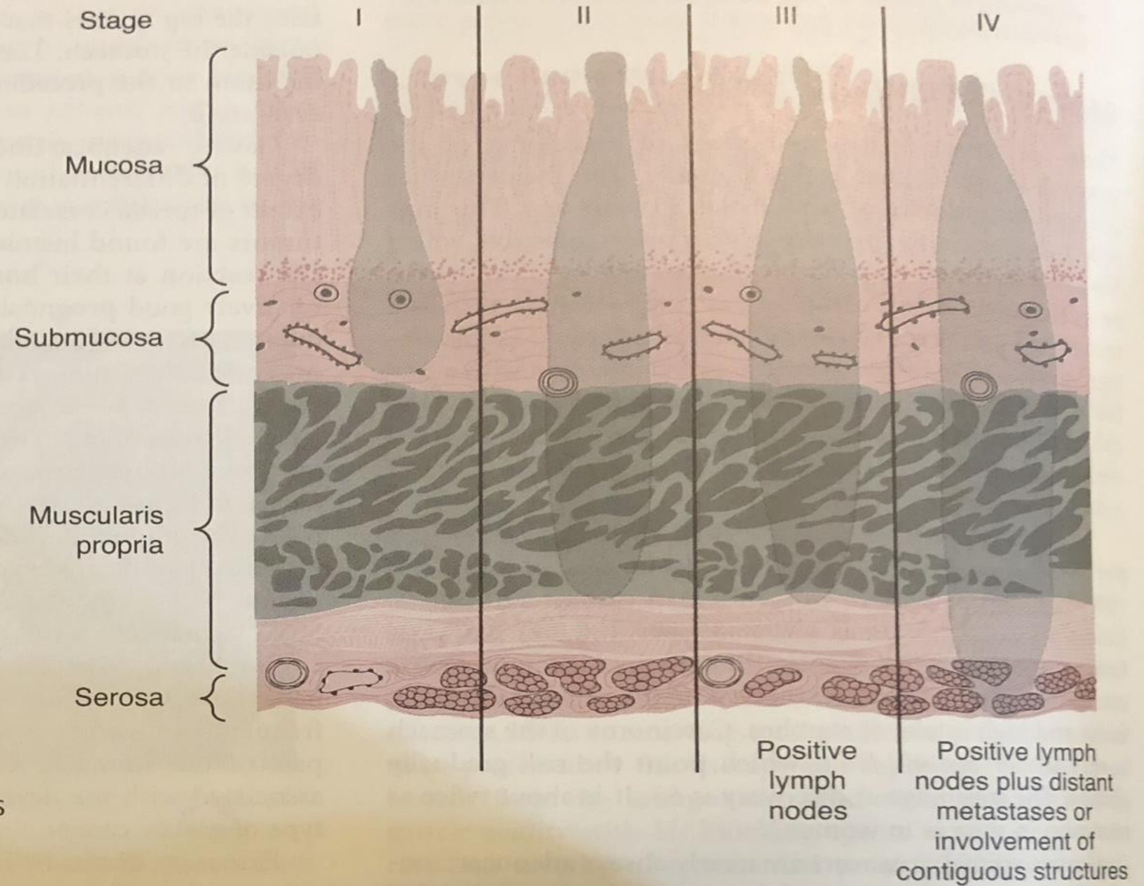
1- Clinical examination

2- CT scan Chest, Abdomin, Pelvis

3- Others (Alkalin pho, Bone scan, PET

4- TUMOR MARKER : CEA

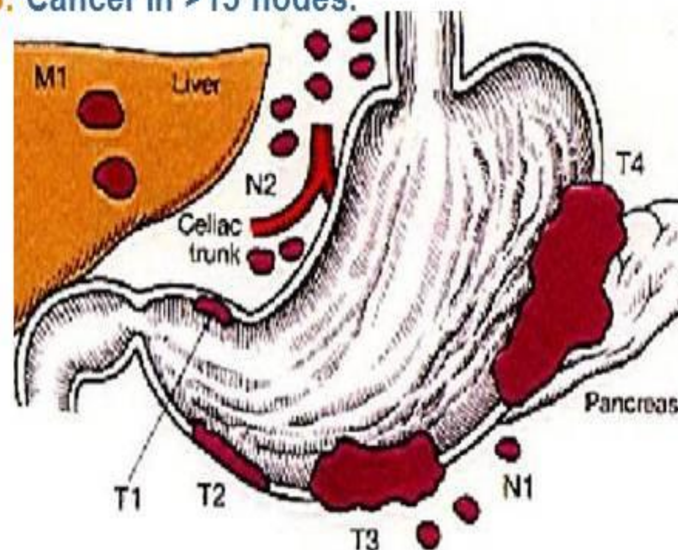
Gastric carcinoma



▲ **Figure 23–9.** Staging system for gastric carcinoma. The darkly shadowed areas represent cancers with different depths of mucosal penetration.

TNM Staging Classification

T (Tumor size and penetration)	N (Cancer spread to nearby lymph nodes)	M (Spread to other parts of the body—metastasis)
Tis: Tumor "in situ:" caught very early and has not grown beyond stomach lining.	N0: Cancer has not spread to nodes.	M0: No metastasis
T1: Tumor has grown through lining and into connective tissue.	N1: Cancer in 1 to 6 nodes.	M1: Metastasis
T2: Tumor has grown into thick inner muscle.	N2: Cancer in 7 to 15 nodes.	
T3: Tumor has spread through outer lining but not to any nearby organs or tissues.	N3: Cancer in >15 nodes.	
T4: Tumor has spread into nearby tissues or organs.		



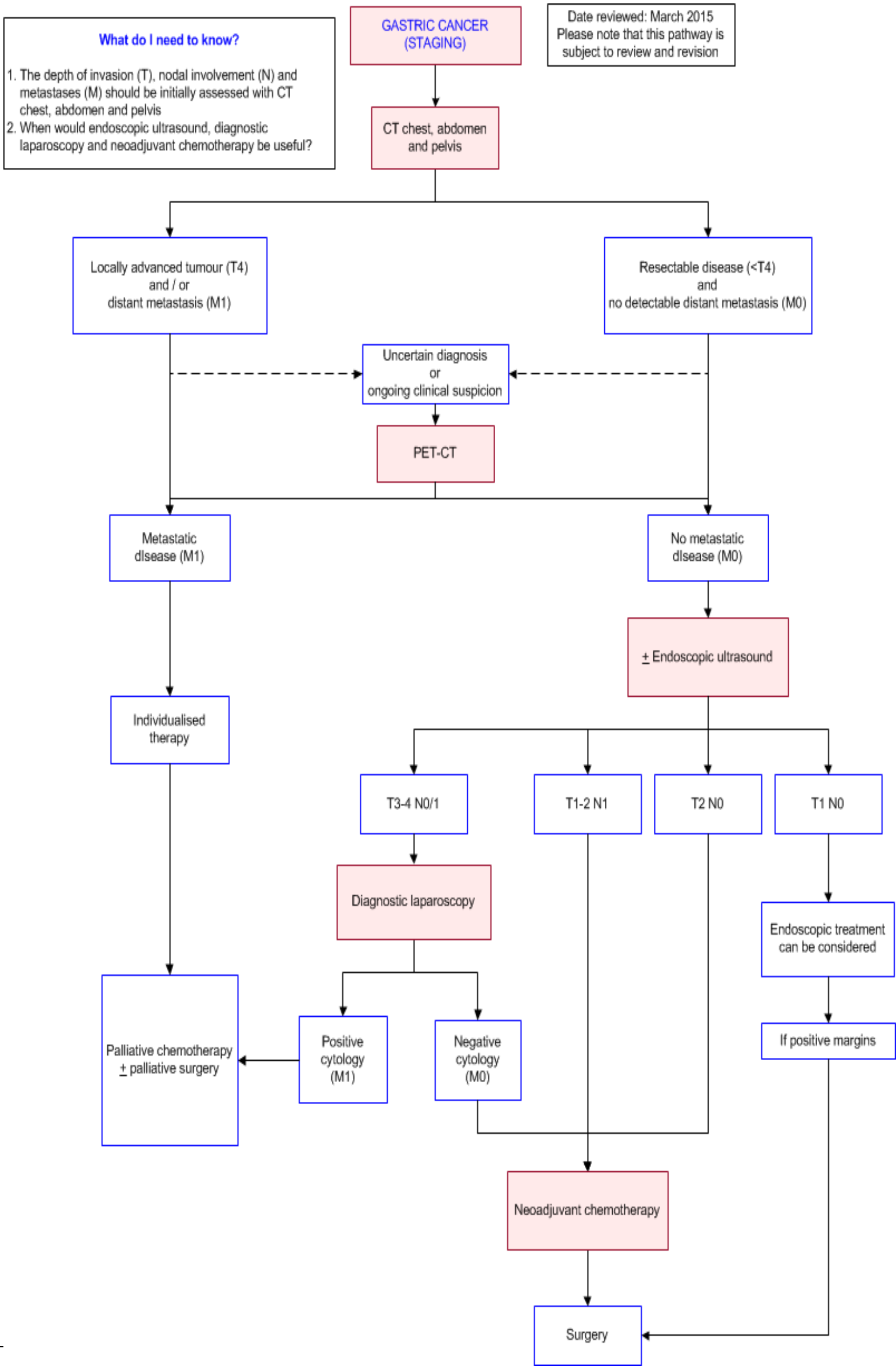
NCCN Guidelines Gastric Cancer v.1.2009.

Staging	TNM classification
Stage 0	Tis, N0, M0
Stage IA	T1, N0, M0
Stage IB	T1, N1, M0
	T2, N0, M0
Stage IIA	T3, N0, M1
	T2, N1, M0
	T1, N2, M0.
Stage IIB	T4a, N0, M0
	T3, N2, M0
	T2, N3, M0
Stage IIIA	T4a, N1, M0
	T3, N2, M0
	T2, N3, M0
Stage IIIB	T4b, N0, N1, M0
	T4a, N2, M0
	T3, N3, M0
Stage IIIC	T4a, N3, M0
	T4b, N2, N3, M0
Stage IV	Any T, any N, M1

With permission from: Sabin LH, Gospodarowicz MK, Wittekind C, editors. The TNM Classification of malignant tumours 7th ed. Oxford: Wiley-Blackwell, 2009.

GC Treatment

- Chemotherapy
- Surgery (Distal, Subtotal, Total)
- Palliative



GASTRIC CANCER (STAGING)
Date reviewed: March 2015
Please note that this pathway is subject to review and revision
What do I need to know?
1. The depth of invasion (T), nodal involvement (N) and metastases (M) should be initially assessed with CT chest, abdomen and pelvis
2. When would endoscopic ultrasound, diagnostic laparoscopy and neoadjuvant chemotherapy be useful?
CT chest, abdomen and pelvis
Locally advanced tumour (T4) and / or distant metastasis (M1)
Resectable disease (<T4) and no detectable distant metastasis (M0)
Uncertain diagnosis or ongoing clinical suspicion
PET-CT
Metastatic disease (M1)
No metastatic disease (M0)
± Endoscopic ultrasound
Individualised therapy
T3-4 N0/1
T1-2 N1
T2 N0
T1 N0
Diagnostic laparoscopy
Endoscopic treatment can be considered
Palliative chemotherapy ± palliative surgery
Positive cytology (M1)
Negative cytology (M0)
If positive margins
Neoadjuvant chemotherapy
Surgery