# GASTRIC CARCINOMA

Department of oncology and radiology

# GASTRIC NEOPLASM

## Benign

**Epithelial**

**Mesenchymal**

## Malignant

1.Primary

- Adenocarcinoma
- Gastrointestinal stromal tumors
- 'GIST'
- Lymphoma

2. Secondary:
invasion from adjacent tumors.

# GASTRIC CA

# Gastric Carcinoma

## Epidemiology & Risk Factors

mach.

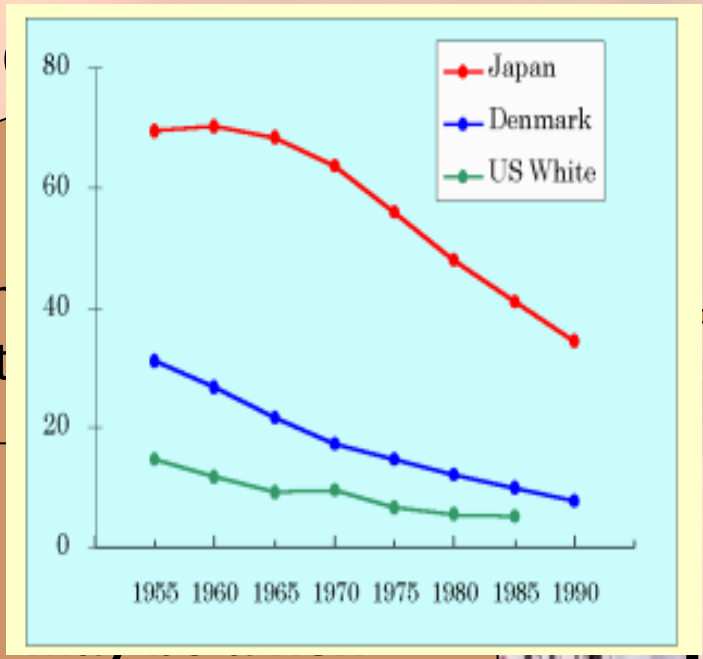
55 year old Japanese mal

indu

Twise m

n male t

**Incidence of Gastric Carcinoma:**
**Japan 70 in100,000/year**
**Europe 40 in 100,000/year**
**UK 15 in 100,000/year**
**USA 10 in 100,000/year**
**It is decreasing worldwide.**




**Japanese immigrant to America.**

# Gastric Carcinoma:

## Risk Factors

### Predisposing :

1. Pernicious anemia & atrophic gastritis (achlorhydra)
2. Previous gastric resection
3. Chronic peptic ulcer (give rise to 1%)
4. Smoking.
5. Alcohol.

### Environmental:

1. H.pylori infection Sero(+)patients have 6-9 folds risk
2. low socioeconomic Status
3. Nationality (JAPAN)
4. Diet (prevention)

### Genetic:

1. Blood group A
2. HNPCC: Heriditory non-polyposis colon cancer.

# Clinical Presentation

**Most patients present with advanced stage..**

**why?**

**They are often asymptomatic in early stages.**

**Common clinical Presentation:**

**epigastric pain**
**Bloating**
**early satiety**
**nausea & vomiting***
**dysphagia***
**anorexia**
**weight loss**
**upper GI bleeding**
**(hematemesis, melena,**
**iron deficiency anemia)**

**loss of appetite**

**of 10Kg in 4 weeks.**

**stprandial fullness.**

**epsia**

**ested food & epigastric**

# SIGNS

-Anemia.

-Wt.loss ( cachexia)

-Epigastric mass,Hepatomegaly,Ascitis

-Jaundice.

-Blumers shelf

-Virchows node

-Sister mary joseph node

-Krukenberg tumor

-Irish node

# PATHOLOGY
# DIO CLASSIFICATION

## Lauren Classification:

### 1. Intestinal Gastric ca.

It arises in areas of intestinal metaplasia to form polypoid tumors or ulcers.

### 2. Diffuse Gastric ca.

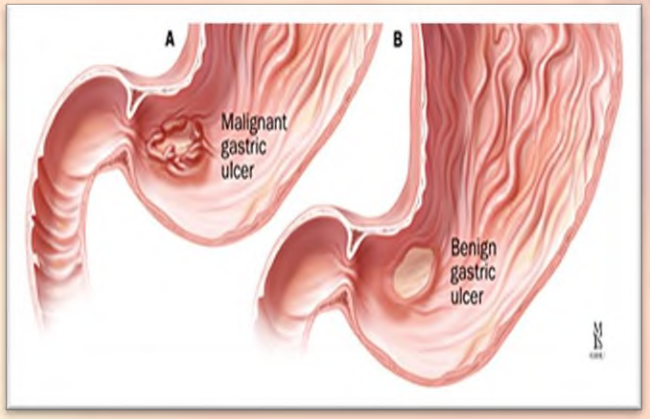
It infiltrates deeply in the stomach without forming obvious mass lesions but spreads widely in the gastric wall "Linitis Plastica"

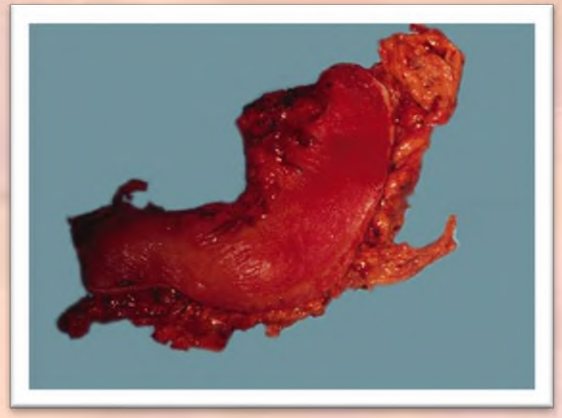
& it has much more worse prognosis

### 3. Mixed Morphology.

# MORPHOLOGY

- Polypoid
- Ulcerative
- Superficial spreading
- Linitis plastica



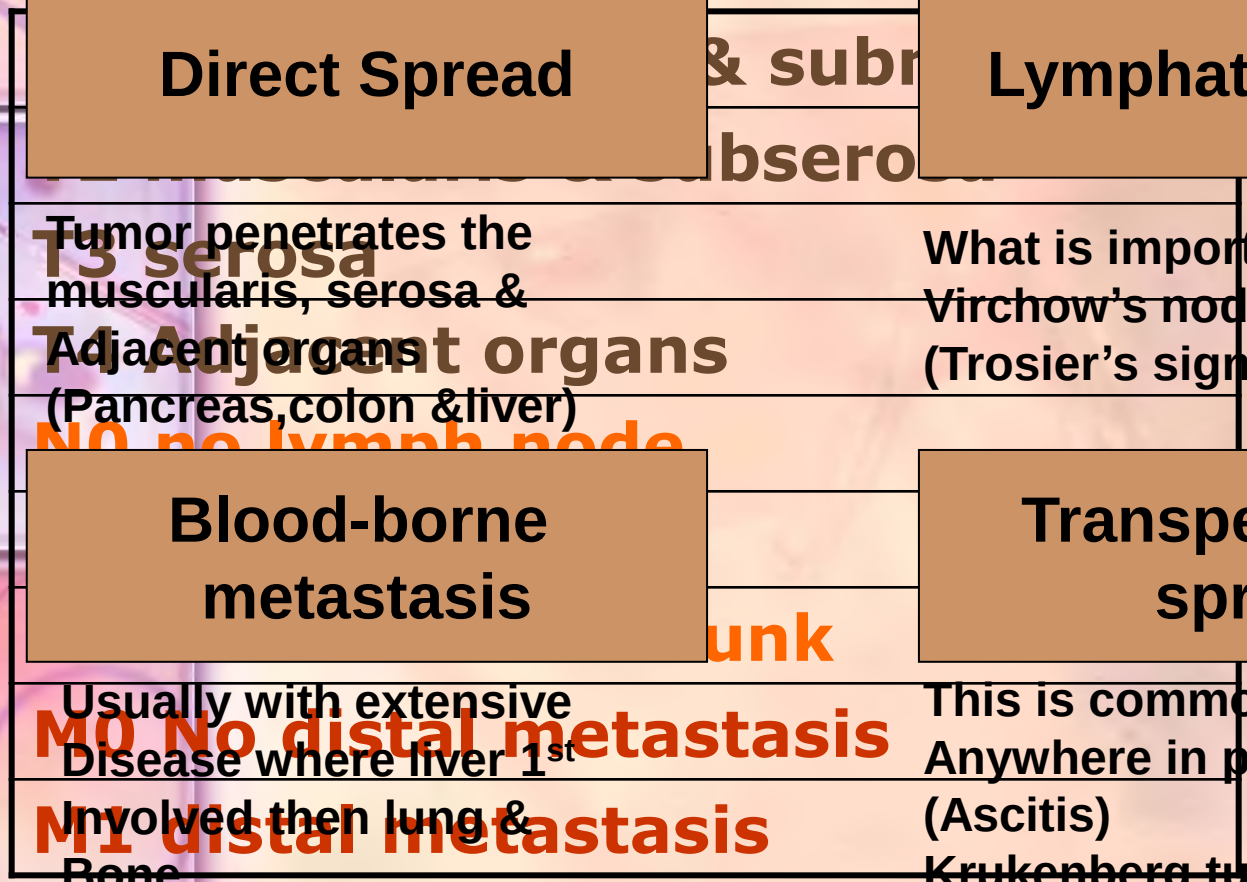



## Gastric cancer can be devided into:

- Early:
- Limited to mucosa & submucosa with or without LN (T1, any N)
- >> curable with 5 years survival rate in 90%.

- Advanced:
- It involves the Muscularis.
- It has 4 types( Bormann's classification). Type III & IV are incurable.

# Spread of Gastric Cancer




## Direct Spread

Tumor penetrates the muscularis, serosa & Adjacent organs (Pancreas,colon &liver)

## Lymphatic spread

What is important here is Virchow's node (Trosier's sign)

## Blood-borne metastasis

Usually with extensive Disease where liver 1st Involved then lung & Bone

## Transperitoneal spread

This is common Anywhere in peritoneal cavity (Ascitis) Krukenberg tumor (ovaries) Sister Joseph nodule (umbilicus)

# COMPLICATIONS

- ✓ Peritoneal and pleural effusion
- ✓ Obstruction of gastric outlet or small bowel
- ✓ Bleeding
- ✓ Intrahepatc jaundice by hepatomegaly

# DIFFERENTIAL DIAGNOSIS

1. Gastric ulcer

**From history,**
**Cancer is not relieved by antacids**
**Not periodic**
**Not releived by eating or vomiting.**

2. Other gastric neoplasms
3. Gastritis
4. Gastric Polyp
5. Crohns disease.

# INVESTIGATIONS

- Full blood count –IDA-
- LFT,RFT
- Amylase & lipase.
- Serum tumor markers (CA 72-4,CEA,CA19-9) not specific
- Stool examination for occult blood
- CXR ,Bone scan.

## Specific:

- UGI endoscopy with biopsy
- Double contrast study
- CT, MRI & US
- Laparoscopry

**EGD esophagogastroduodenoscopy**

**Diagnostic accuracy is 98%**

**if upto 7 biopsies is taken.**

**Diagnostic study of Choice**

**Double Contrast barium upper GI x-ray**

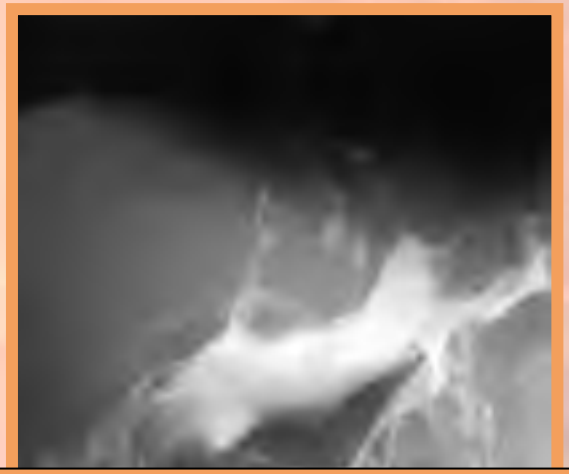
**Diagnostic accuracy 90%**

**WHY?**

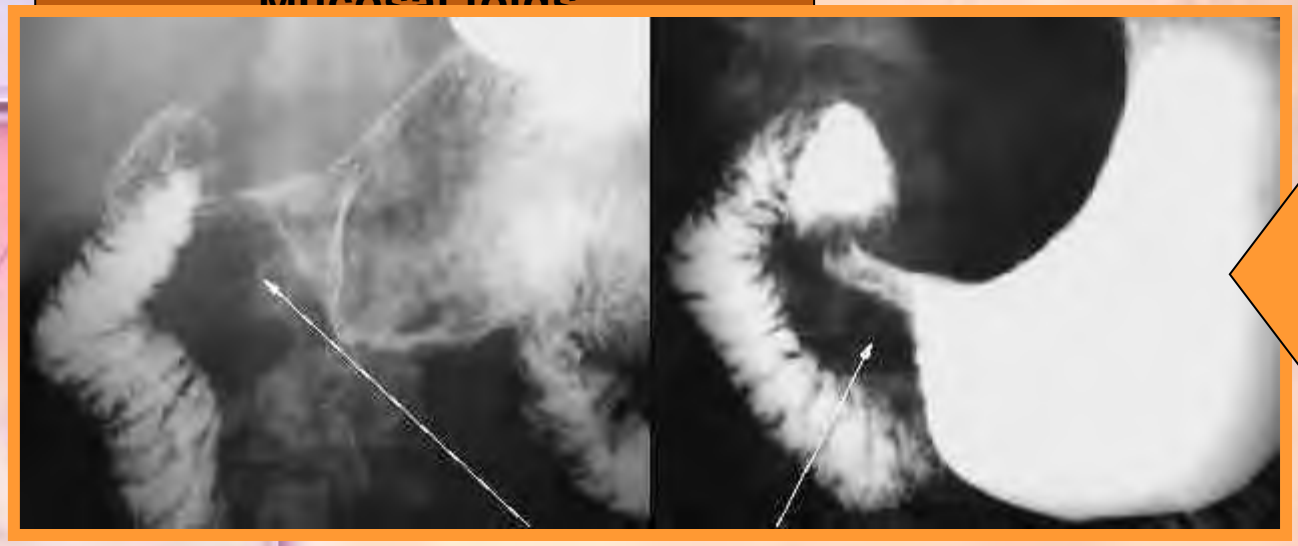
**1.Early superficial gastric mucosal lesion can be missed.**

**2. can't differentiate b/w benign ulcer & Ulcerating adenocarcinoma.**

X-ray showing Gastric ulcer With symmetrical radiating Mucosal folds



X-ray showing Extensive carcinoma involving the cardia & Fundus



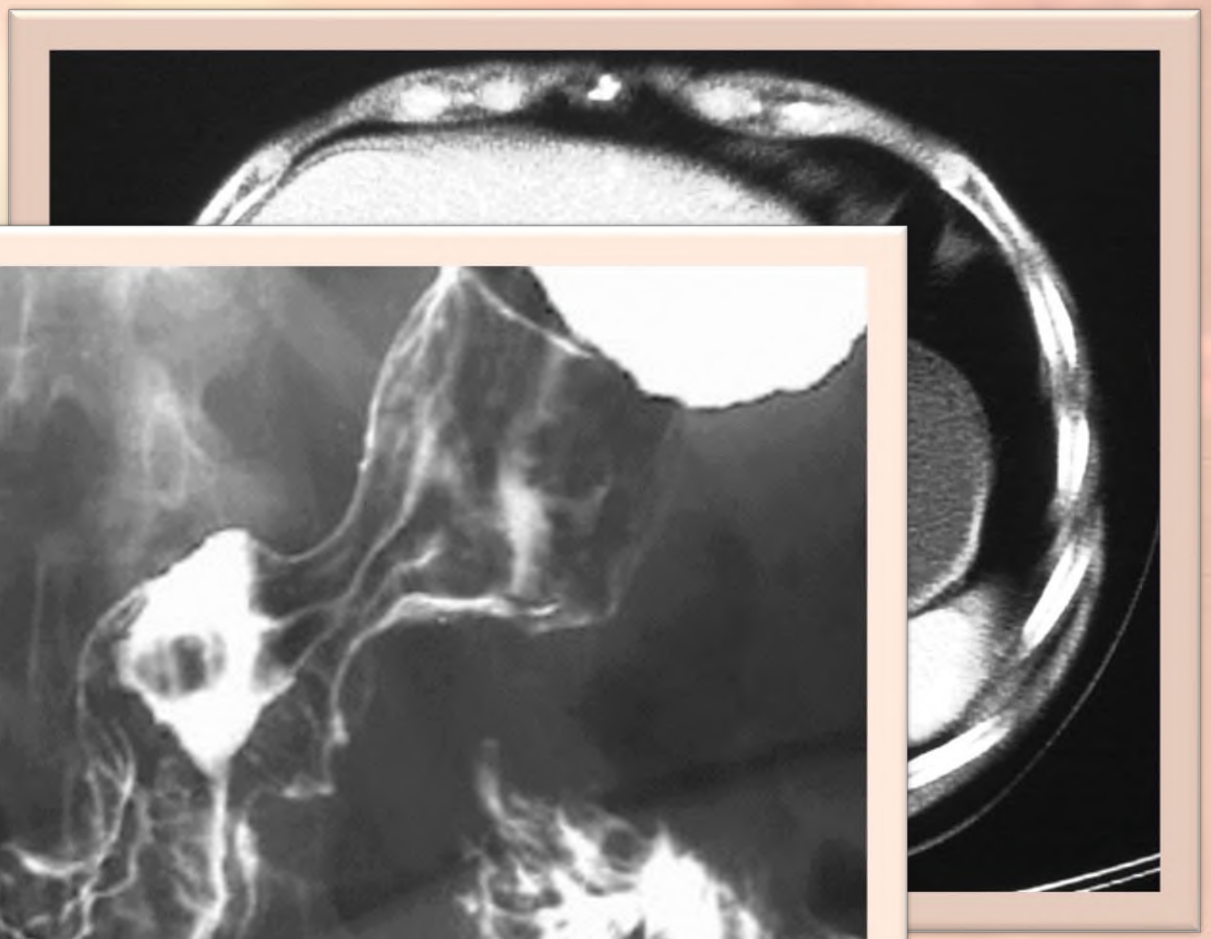
Pyloric stenosis

## ✓CT,MRI & US:

Help in assessment of wall thickness, metastases (peritoneum ,liver & LNs)

## ✓Laparoscopy:

Detection of peritoneal metastases



# UGI ENDOSCOPY

## THE GOLD STANDARD

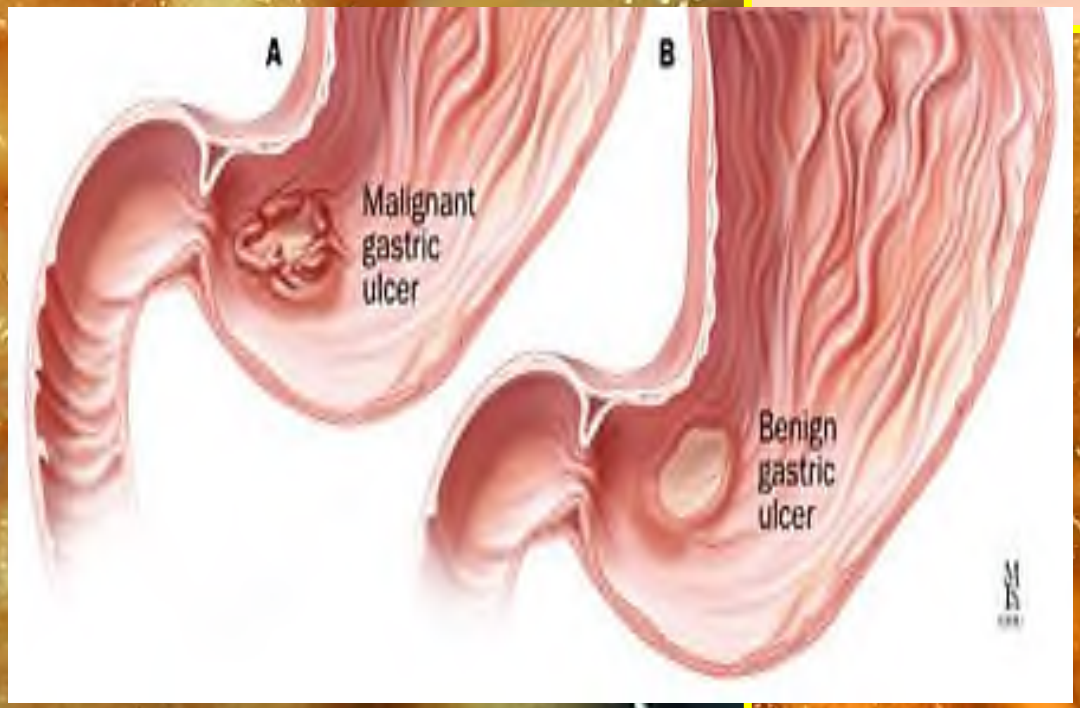
- It allows taking biopsies
- Safe (in experienced hands)

# UGI ENDOSCOPY,contd.

- **You may see an ulcer (25%), polypoid mass (25%), superficial spreading (10%),or infiltrative (linnitis plastica)-difficult to be detected-**
- **Accuracy 50-95% it depends on gross appearance,size,location & no. of biopsies**

# IF YOU SEE ULCER ASK UR SELF…BENIGN OR MALIGNANT?

| BENIGN | MALIGNANT |
| --- | --- |
| Round to oval punched out lesion with straight walls & flat smooth base | Irregular outline with necrotic or hemorrhagic base |
| Smooth margins with normal surrounding mucosa | Irregular & raised margins |
| Mostly on lesser curvature | Anywhere |
| Majority<2cm | Any size |
| Normal adjoining rugal folds that extend to the margins of the base | Prominent & edematous rugal folds that usually do not extend to the margins |


A
B
Malignant gastric ulcer
Benign gastric ulcer

# Management

- **Surgery**
- **Chemotherapy**
- **Radiotherapy**

NO PROVEN BENEFIT

# Treatment

## Initial treatment:

1. Improve nutrition if needed by parentral or enteral feeding.
2. Correct fluid &electrolyte

& anemia if they are present.

## Preoperative Care

Preoperative Staging is important because we don't want to subject the patient to radical surgery that can't help him.

# PRE-OPERATIVE CARE

- ✓ Careful preoperative staging
- ✓ Screen for any nutritional deficiencies & consider nutritional support
- ✓ Symptomatic control
- ✓ Blood transfusion in symptomatic anemia
- ✓ Hydration
- ✓ Prophylactic antibiotics
- ✓ ABO & crossmatch
- ✓ Ask about current medications & allergies
- ✓ Cessation of smoking

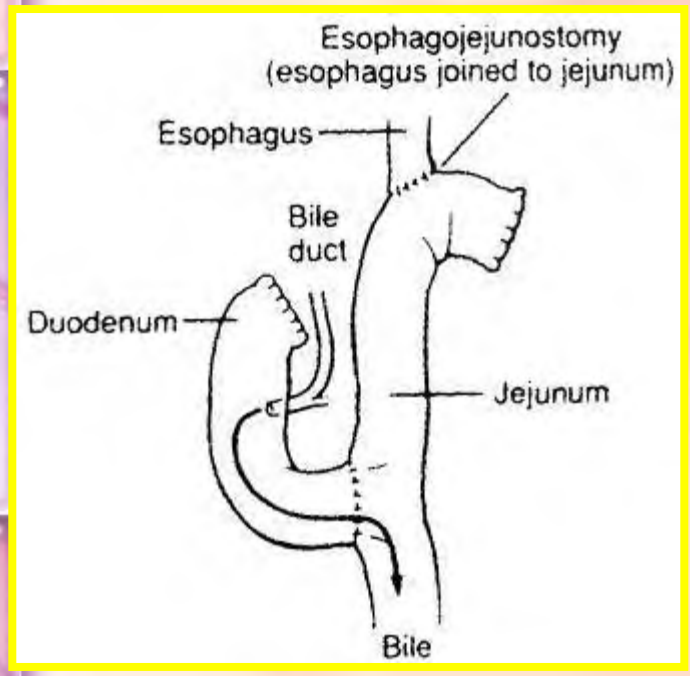
# BASIC SURGICAL PRINCIPLES

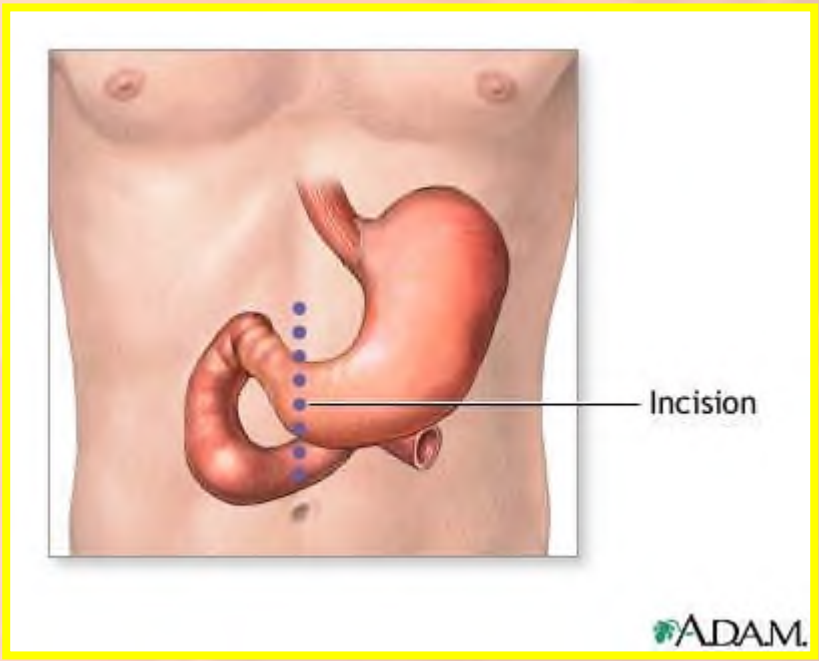
## 3 TYPES: TOTAL,SUBTOTAL,PALLIATIVE

- **ANTRAL DISEASE➔SUBTOTAL GASTRECTOMY**
- **MIDBODY & PROXIMAL➔ TOTAL GASTRECTOMY**

# TOTAL (RADICAL) GASTRECTOMY

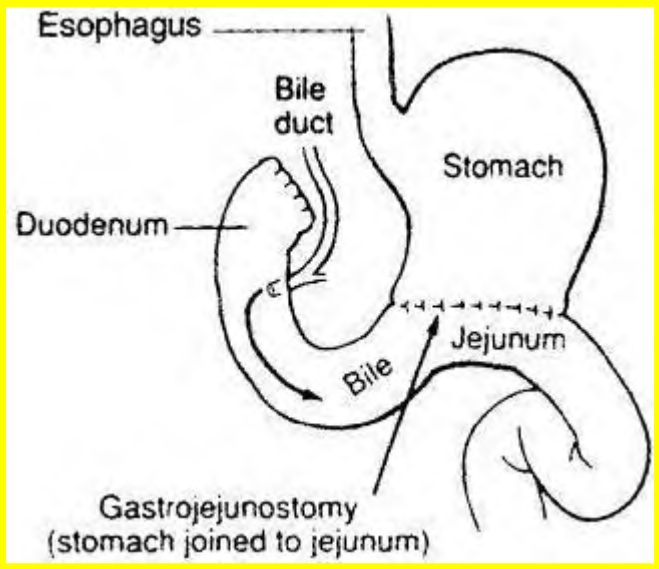
- Remove the stomach +distal part of esophagus+ proximal part of dudenum + greater & lesser omenta + LNs
- Oesophagojejunostomy with roux-en-y .


Esophagojejunostomy
(esophagus joined to jejunum)
Esophagus
Bile
duct
Duodenum
Jejunum
Bile


Incision
A.D.A.M.

# SUBTOTAL GASTRECTOMY

- Similar to total one except that the PRC the stomach is pr
- Foll ruction & crea s
- ( by my,billroth II )



# PALLIATIVE SURGERY

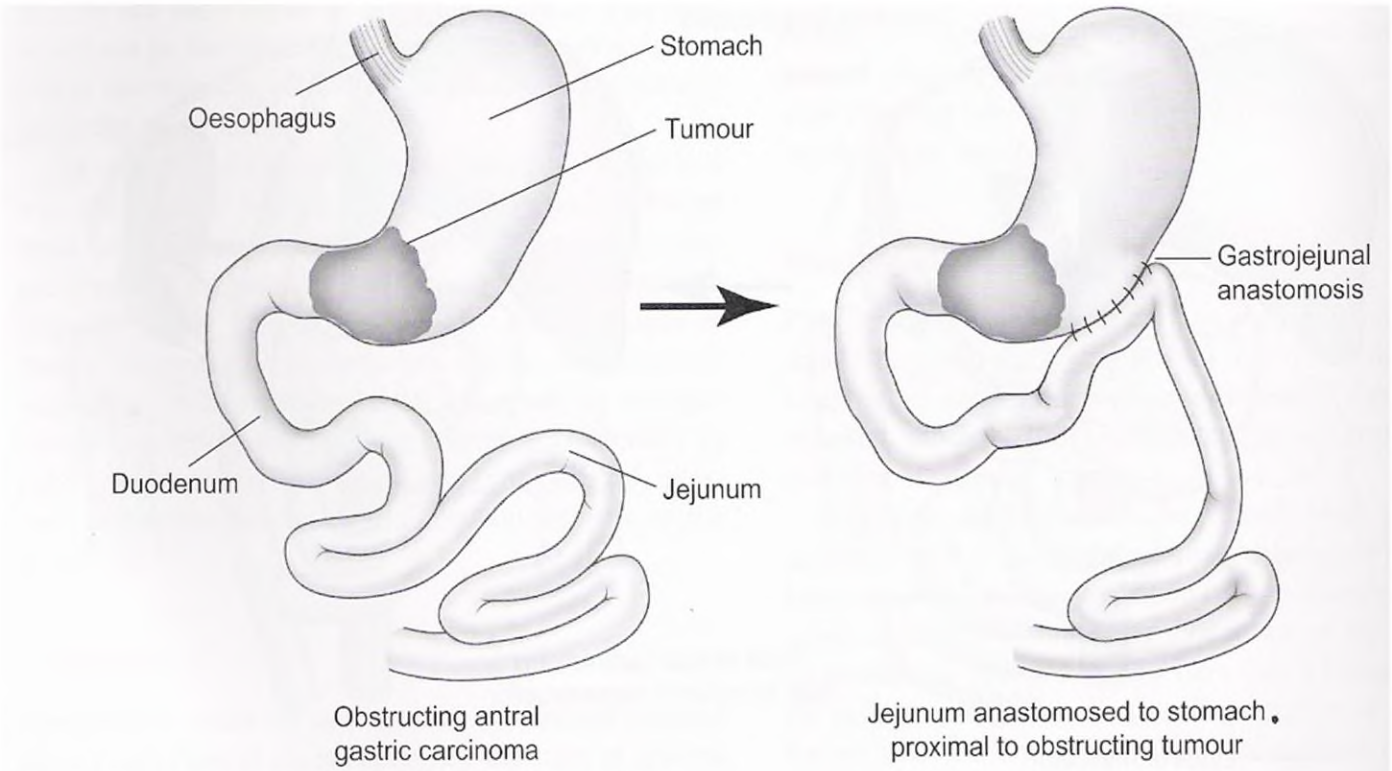



**Fig. 18.14** Palliative bypass procedure for gastric carcinoma.

# POSTOPERATIVE ORDERS

- **Admit to PACU**
- **Detailed nutritional advise (small frequent meals)**

# Post-Operative Complications

1. Leakage from duodenal stump.
2. Secondary hemorrhage.
3. Nutritional deficiency in long term.

## 2.Chemotherapy:

Responds well, but there is no effect on servival.

Marsden Regimen

Epirubicin, cisplatin &5-flurouracil (3 wks)

6 cycles

Response rate : 40% .

## 3. Radiotherapy:

Postperative-radiotherpy: may decrease the recurrence.

# Preventive measures

**By diet**

**Early diagnosis remains the Key Problem**

**Possible**

**Carotenoids,whole grean cereals and green tea.**

**Smoking cessation**

**Cessation of alcohol intake**

# PROGNOSTIC FEATURES

**2 important factors influencing survival in resectable gastric cancer:**

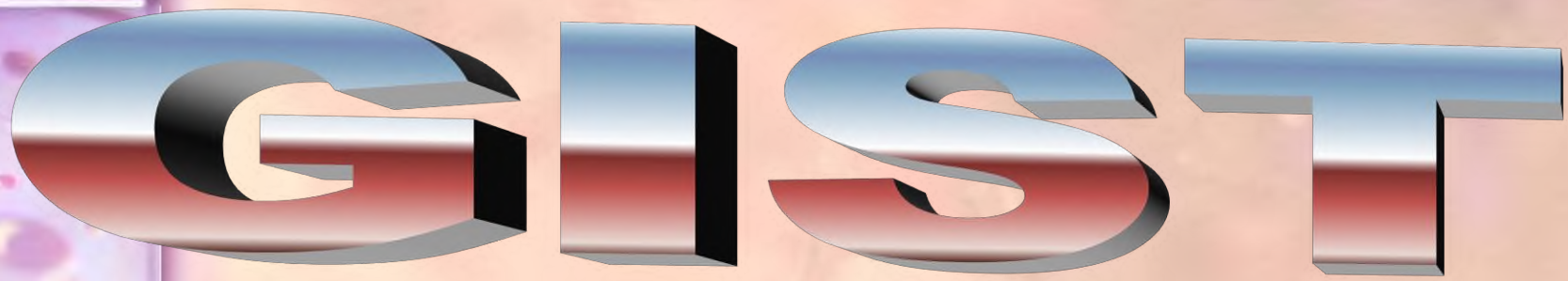
- ❖ **depth of cancer invasion**
- ❖ **presence or absence of regional LN involvement**
- **5yrs survival rate:**

  **10% in USA**

  **50% in Japan**

Table 18.6 Examples of stages of gastric cancer and their prognosis

| Stage | 5-yr survival (%) |
|---|---|
| $T_1N_0M_0$ | 95+ |
| $T_1N_1M_0$ | 70–80 |
| $T_2N_1M_0$ | 45–50 |
| $T_3N_2M_0$ | 15–25 |
| $M_1$ | 0–10 |


GIST

# Gastrointestinal Stromal Tumor 'GIST'

- Previously leiomyoma & leomyosarcoma.
- <1 %
- Rarly cause bleeding or obstruction.
- The origion: Intestinal Cells of Cajal 'ICC;s' autonomic nervous system.
- The distinction b\w benign & malignant is unclear. In general terms, the larger the tumor & greater mitotic activity, the more likely to metastases.
- The stomach is the most common site of GIST.

- Usually are discovered incidentally on endoscopy or barium meal
- The endoscopic biopsies may be uninformative bcz the overlying mucosa is usually normal
- Small tumors→wedge resection
- Larger ones→gastrectomy

# GASTRIC LYMPHOMA

# Gastric Lymphoma

Most common primary GI Lymphoma .

It's increasing in frequency.

## Presentation:

Similar to gastric carcinoma.

May reveal peripheral adenopathy, abdominal mass or spleenomegaly.

## Diagnosis:

1. EGD
2. contrast GI x-ray.
3. CT guided fine needle biopsy.

## Treatment :

1. surgery: total or subtotal gastrectomy with spleenectomy or palliative resection.
2. Adjunct radiotherapy: may improve 5 year survival
3. Adjunct Chemotherapy: may prevent recurrance.

*Bailey & Love's short practice of surgery*
*Clinical surgery (A.cuschieri).*
*E-medicine web site*
*The Washington Manual of Surgery*