

# GASTRIC CANCER

## Epidemiology

- A leading cause of deaths from cancer worldwide
- Urban and lower socioeconomic groups
- Incidence peaks in 7<sup>th</sup> decade
- Men > women (10/100,000 men, 5/100,000 women)
- In Japan, aggressive screening programs have led to a 40% decrease in deaths from disease

## Pathogenesis

- Environmental Factors
- Genetic Factors
- Predisposing conditions

## Clinical Features

- Anorexia, early satiety, abdominal pain, or dysphagia leading to weight loss
- Anemia
- Occult GI bleeding, melena or hematemesis in 20% of patients
- Pseudoachalasia, gastric outlet obstruction
- Signs of tumor extension

## Diagnosis

- Upper GI Series with barium
  - 60-70% sensitivity, 90% specificity for advanced CA
  - Non-invasive
  - Mucosal ulceration, loss of rugae, strictures
  - Difficult to distinguish benign from malignant ulcers
- Endoscopy with biopsy
  - Ability to biopsy or treat bleeding
  - 95% sensitive for advanced CA, 50-60% for early tumors
  - Non-healing ulcers should be biopsied
  - Diffuse type CA may appear normal on endoscopy
- Endoscopic ultrasound
  - 80% accuracy for T staging
  - 90-99% accurate for distinguishing b/w T1 and T2
  - Problem with overstaging more invasive tumors and understaging nodes

## 5 Yr Survival According to Stage

- Stage IA 78%
- Stage IB 58%
- Stage II 34%
- Stage IIIA 20%
- Stage IIIB 8%
- Stage IV 7%

**Staging - TNM**

- T
  - T1a: lamina propria
  - T1b: submucosa
  - T2: muscularis/subserosa including omentum without serosal penetration
  - T3: serosal penetration
  - T4: adjacent organs
- N
  - Nx: < 15 nodes evaluated
  - N0: no nodes
  - N1: 1-6 regional nodes
  - N2: 7-15 regional nodes
  - N3: > 15 regional nodes (other system ranked distance from primary tumor)
    - T1a - 4% LN spread
    - T1b - 23% LN spread
    - T2 - 44 % LN spread
    - T3 - 64% LN spread
- M1: distant metastasis

		N0	N1	N2	N3
M0	T1	Ia	Ib	II	IV
	T2	Ib	II	IIIa	IV
	T3	II	IIIa	IIIb	IV
	T4	IIIa	IV	IV	IV
M1		IV	IV	IV	IV

**Surgical Management**

- Complete surgical resection of gastric tumor(6cm margins) including adjacent lymph nodes represents the best chance for long-term survival
- Total or subtotal gastrectomy offers best chance for long-term survival, and also most effective means of palliation
- Some early superficial cancers may be treated endoscopically
- Considerations include extent of resection and lymph node dissection
- Total Gastrectomy
  - Proximal tumors (upper 1/3<sup>rd</sup>) or large midgastric tumors
  - Infiltrative disease (linitis plastica)
  - Less reflux and better LN dissection with total gastrectomy with Roux-en-Y than with proximal subtotal gastrectomy
- Subtotal Gastrectomy
  - Distal (lower 2/3<sup>rd</sup>) tumors
  - Better quality of life than total resection
  - No survival benefit difference when compared to total gastrectomy for distal tumor
- Endoscopic Mucosal Resection

### **Extent of Lymph Node Dissection**

- D1 – perigastric nodes
- D2 – hepatic, left gastric, celiac, splenic artery and hilar nodes
- D3 – porta hepatis and periaortic nodes
- Estimated that 30% of patients have metastases to N2 nodes, so disease remains after D1 resection
- In Japan, surgeons advocate an extended lymphadenectomy, resecting one level beyond the nodes which are involved – D2 or D3 resections
- Japanese results have not been duplicated in Western literature yet
- MRC Trial (UK) (Lancet 1996)
  - Randomized 400 patients to D1 or D2 resection
  - Morbidity 28% for D1, 46% for D2
  - Mortality 6% for D1, 13% for D2
  - 5 year survival not different (33% vs 35%)
- Dutch Trial (NEJM 1999)
  - 711 patients to D1 or D2 resection
  - Morbidity 25% for D1, 43% for D2
  - Mortality 4% for D1, 10% for D2
  - No survival advantage
- Outcome is surgeon and center dependent
- Extended lymphadenectomy should be performed in centers with strong experience and low morbidity/mortality rates
- Splenectomy/distal pancreatectomy only in pts with extension of tumor into these organs

### **Chemotherapy/Radiation** (Macdonald JS et al. NEJM 2001 345(10) 725-30)

- >50% of patients have regional node metastases at time of surgical resection
- 556 patients randomized to chemo/RT (5FU/leucovorin)+ surgery or surgery alone
- Median survival 27months for surgery alone vs 36months for chemo/radiation group
- Hazard ratio for death 1.35, for relapse 1.52
- Concluded that adjuvant chemoradiation should be considered for all patients at risk of recurrence
- Other studies have not shown significant improvement in outcome with adjuvant or neoadjuvant therapy
  - morbidity from chemo
  - delay in definitive surgery
  - some centers advocate only using chemo or radiation under clinical trial conditions
- Role for perioperative intra-abdominal chemo for prevention of peritoneal recurrence - being used in Korea currently

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