



Acute Abdomen

Nolan Ortega Aludino, M.D.

Department of Surgery

Ospital ng Maynila Medical Center



General Data:

A.F.

42 y/o

Male

Binondo



Chief Complaint:
Abdominal pain



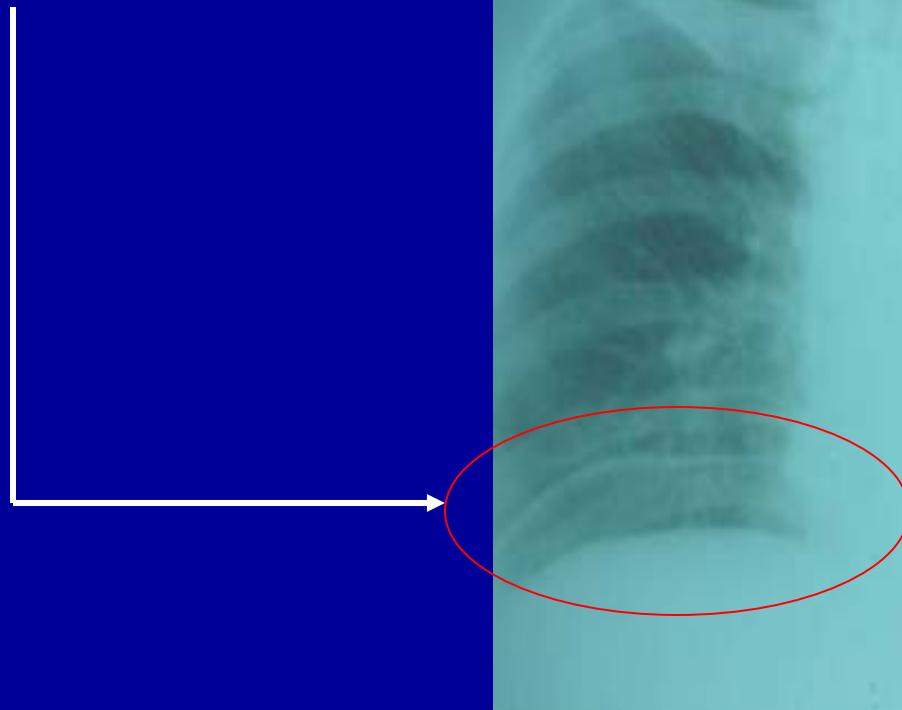
History of Present Illness

9 hours PTA → abdominal pain,
generalized, burning,
non-radiating, sudden onset
(+) vomiting
(+) consult at private clinic
dx: t/c perforated PUD
advised possible
surgery



History of Present Illness

- Upright CXR done:
 - Pneumoperitoneum





History of Present Illness

Few hours PTA → persistence of signs and
symptoms
decided to THOC
(OMMC) due to lack
of funds

↓

Admission



Past Medical History

- 1998 – Ospital ng Maynila Medical Center
 - » Dx: Peptic Ulcer Disease
 - » Rx: Unrecalled; with poor compliance



Personal and Social History

- Smoker
- Alcoholic beverage drinker



Physical Examination

General Survey:

conscious, coherent, not in
cardiorespiratory distress

Vital Signs:

BP = 120/70

CR = 88

RR = 18

Temp = 37.3°C



Physical Examination

HEENT:

Pink palpebral conjunctivae, anicteric sclerae

Chest and Lungs:

Symmetric chest expansion, no retractions, clear and equal breath sounds



Physical Examination

Heart:

adynamic precordium, normal rate,
regular rhythm, no murmurs



Physical Examination

Abdomen:

Slightly distended, hypoactive bowel sounds, (+) muscle guarding on all quadrants, (+) direct tenderness on all quadrants



Physical Examination

Rectal:

skin tags, good sphincteric tone, no
pararectal mass appreciated, empty
rectal vault, black tarry feces on
tactating finger



Salient Features

- 42 y/o male
- Abdominal pain
 - Sudden onset
 - Burning
 - Severe
 - Generalized
- Muscle guarding on all quadrants
- Direct tenderness on all quadrants
- Hypoactive bowel sounds
- Pneumoperitoneum
- Previous dx of PUD



Clinical Diagnosis

	<i>Diagnosis</i>	<i>Certainty</i>
<i>Primary Diagnosis</i>	Acute Surgical Abdomen Secondary to Perforated Peptic Ulcer	80%
<i>Secondary Diagnosis</i>	Acute Perforative Appendicitis with Generalized Peritonitis	20%



Paraclinical Diagnostic Procedure

- Do I need to perform a paraclinical diagnostic procedure?

“No”

Acute Abdominal Pain

Surgical Abdomen

- persistent/increasing severity
- direct/rebound tenderness
- MUSCLE GUARDING/RIGIDITY

Non-Surgical Abdomen

- on-off
- no rebound tenderness

Abdominal Tenderness, ALLQUADRANTS

MUSCLE GUARDING/RIGIDITY

Anterior Abdominal Wall

Intraperitoneal

- direct/rebound

Retroperitoneum

PERFORATION/
INFLAMMATORY LESION

OBSTRUCTION

VASCULAR
/ISCHEMIA

NON-SPECIFIC



Pre Treatment Diagnosis

	<i>Diagnosis</i>	<i>Certainty</i>	<i>Treatment</i>
<i>Primary Diagnosis</i>	Acute Surgical Abdomen Secondary to Perforated Peptic Ulcer	80%	Surgery
<i>Secondary Diagnosis</i>	Acute Perforative Appendicitis with Generalized Peritonitis	20%	Surgery



GOALS OF TREATMENT

- Resolve the perforation and peritonitis
- Least morbidity and mortality



Treatment Options

	Benefit	Risk	Cost	Availability
OPEN SURGERY	•↑ Post op Pain •↑ Post op Ileus •↑ Hospital Stay	BLEEDING	(+)	AVAILABLE
LAPAROSCOPIC SURGERY	•↓ Post op Pain •↓ Post op Ileus •↓ Hospital Stay	BLEEDING	(+++)	NOT AVAILABLE



Pre Operative Management

- Give psychosocial support
- Optimize condition of patient
 - Nasogastric tube placed
 - Fluid resuscitation and hydration
 - Pre-op monitoring
 - Antibiotics
 - Screening of other condition that will interfere with treatment
- Prepare materials



Operative Management

- Patient supine under General Anesthesia
- Asepsis and antisepsis techniques observed
- Sterile drapes placed
- Midline supraumbilical incision done
- Evacuation of peritoneal fluid and GI spillage
- Intraoperative findings noted



Operative Findings

- 3 mm prepyloric perforation with noted with slight induration, patent pylorum, no mass
- Food particles noted intraperitoneally
- Generalized peritonitis noted



Treatment Goals

- To resolve the gastric perforation
- Least morbidity and mortality

Treatment Options

<u>TREATMENT</u>	<u>BENEFITS</u>	<u>RISKS</u>	<u>COST</u>	<u>AVAILABILITY</u>
Closure with Omental Patch	RR = 37 – 58% MR =	Leak	++	AVAILABLE
Vagotomy + Antrectomy	RR = 1 % (10 years) MR = 1 – 2%	Leak	++	AVAILABLE
Vagotomy + Pyloroplasty	RR = 3 – 30 % (10 years) MR = 0.7 %	Leak	++	AVAILABLE
Highly Selective Vagotomy	RR = 3 – 12 % (10 years) MR = 0.31%	Leak	++	AVAILABLE



Operative Technique

- Debridement of ulcer margin done
- Specimen taken for histopathology
- Graham patch done
- Irrigation of peritoneum done
- Exploration of other intraabdominal contents done
- Correct sponge, needle and instrument count



Operative Technique

- Layer by layer closure
- Dry, sterile dressing applied



Final Diagnosis

Perforated Gastric Ulcer
with Generalized Peritonitis



Postoperative Management

First POD



NGT maintained

Hydration continued

IV Antibiotics

Second POD



Clear liquids

Foley Catheter removed

shifted to oral meds

Omeprazole 20 mg q12

Amoxicillin 1000 mg q12

Metronidazole 1000 mg q12



Postoperative Management

<i>Third POD</i>	→	soft diet NGT removed
<i>Fourth POD</i>	→	IVF consumed
<i>Fifth POD</i>	→	MGH



Follow up Plan

- Continue medications at home
- Continue daily wound care
- Resume moderate daily activities
- Follow up after a week or earlier if any problem arises



After Managing the Patient

- I HAVE DISCHARGED MY PATIENT :
 - IMPROVED
 - FREE OF COMPLICATIONS
 - HAPPY AND CONTENTED WITH THE OUTCOME



Discharge Advise

- Avoid skipping meals
- Take small but frequent meals



Sharing of Information

Discussion

- Acute Abdomen
 - Designates symptoms and signs of intra-abdominal disease usually treated best by surgical operation
 - Proper management requires a timely decision about the need for surgical operation.
- Timely treatment minimize morbidity and mortality

Discussion

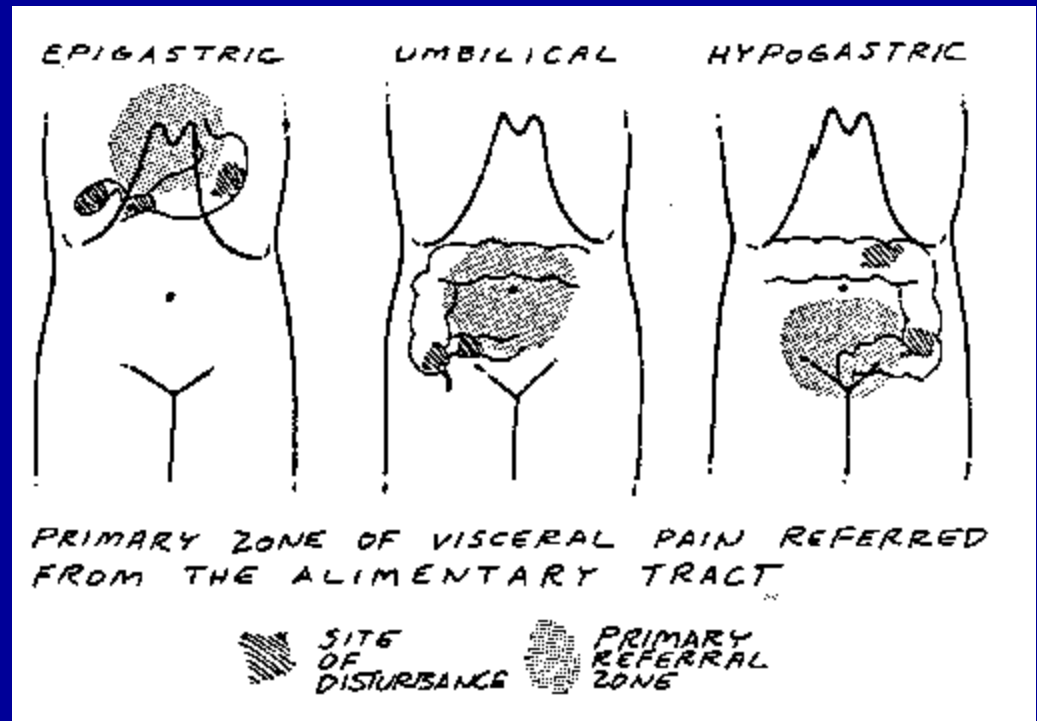
- Pain
 - Focal issue in the evaluation of patient having acute abdomen
 - Location
 - Onset
 - Duration
 - Character

Discussion

- Location
 - Developmental anatomy– abdominal cavity and its viscera influence the clinical manifestation of abdominal pain
- Primitive gut
 - ▣ Foregut – (pharynx, esophagus, stomach, prox duodenum)
 - ▣ Midgut – (4th portion duodenum to mid transverse colon)
 - ▣ Hindgut – (distal transverse colon to rectum)

Discussion

- Primitive gut
 - ▣ Foregut
 - ▣ Midgut
 - ▣ Hindgut



Discussion

- Stimulus
 - Stretch
 - Distention
 - Bacterial/ Chemical peritoneal inflammation
- Character of Pain
 - Visceral pain
 - ◆ dull and poorly localized

Discussion

- Character of Pain
 - Parietal or Somatic pain
 - ◆ sharp and well localized
 - Crescendo-Decrescendo
 - ◆ Obstruction

Discussion

Box 43-3. Abdominal Pain Secondary to Obstructing Lesions of the Gastrointestinal Tract

Jejunum

- Malignancy
- Volvulus
- Adhesions
- Intussusception

Ileum

- Malignancy
- Volvulus
- Adhesions
- Intussusception

Colon

- Malignancy
- Volvulus: cecal or sigmoid
- Diverticulitis

Discussion

- Onset
 - Sudden or explosive (severe abd pain)
 - Free perforation of viscus
 - Acute intestinal ischemia

Discussion

- Onset
 - Vague general discomfort progress to a more intense pain-- localizes
 - Inflammatory lesions

Discussion

Box 43-2. Abdominal Pain Secondary to Inflammatory Lesions of the Gastrointestinal Subsystem

Stomach

Gastric ulcer

Duodenal ulcer

Biliary tract

Acute cholecystitis with or without choledocholithiasis

Pancreas

Acute, recurrent, or chronic pancreatitis

Small intestine

Crohn's disease

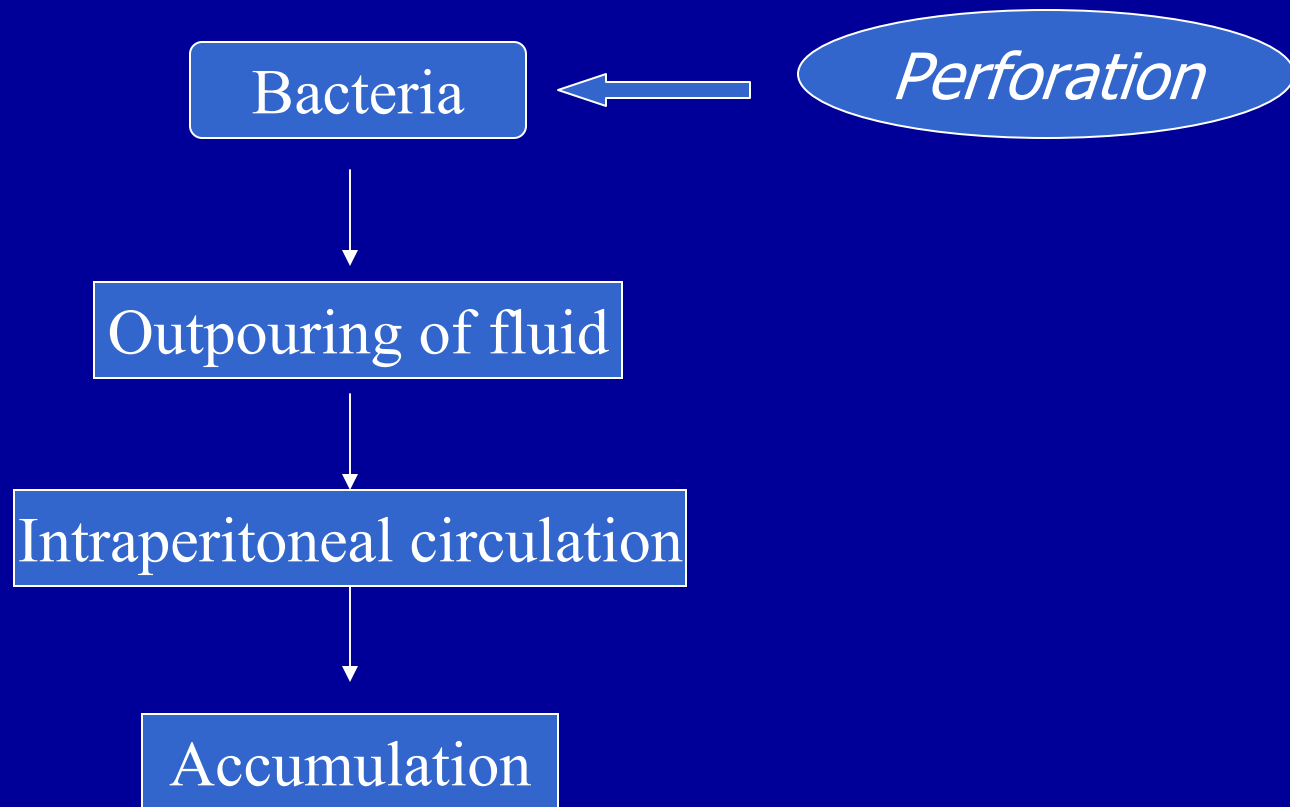
Meckel's diverticulum

Large intestine

Appendicitis

Diverticulitis

Discussion



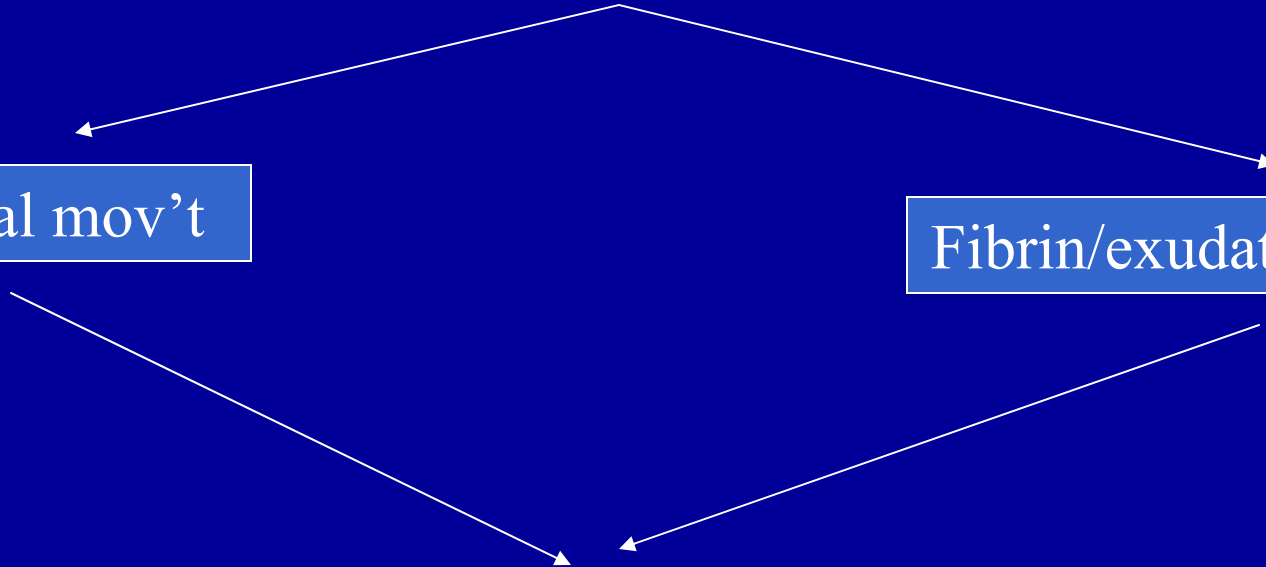
Discussion

Localize bacteria + products of inflammation

↓intestinal mov't

Fibrin/exudate formation

Walling of Inflammation



Peptic Ulcer Disease



Definition

- interruption in the mucosa stretching through the muscularis mucosa into the submucosa or deeper
- peptic ulcer can develop in any part of the GIT that is exposed to the aggressive action of acid-pepsin.



Location

- Duodenum – first part mostly within 2cm of the pylorus
- Stomach – 95% located on the lesser curvature mostly within 6cm of the pylorus
- Esophagus
- Stomal ulcer – on the edges of a surgical gastro-enterostomy
- Duodenum, stomach or jejunum of patients with Zollinger Ellison syndrome (hypergastrinaemia secondary to a gastrinoma).
- In or adjacent to a Meckels diverticulum containing ectopic gastric mucosa (ileum).



Epidemiology

	Gastric ulcer	Duodenal ulcer
Age	40 – 60	20 – 45
Sex	M : V = 1.5 : 1	M : V = 3 : 1
Socio-economic	Lower	Higher
Blood group	A	O



Classification of Gastric Ulcers(GU)

(Gaintree – Johnson)

Type 1

- At incisura on the lesser curvature where the mucosa of the antrum and body of the stomach joins
- Not associated with increased acid secretion
- Associated with blood group A
- Mucosal resistance problem.



Classification of Gastric Ulcers(GU)

Type 2

- Gastric and duodenal ulcer
- Gastric ulcer secondary to gastric stases caused by duodenal ulcer.



Classification of Gastric Ulcers(GU)

Type 3

- Prepyloric ulcer within 2-3cm of the pylorus
- Often acid hypersecretors
- Association with blood group O
- Treated like duodenal ulcer.



Classification of Gastric Ulcers(GU)

Type 4

- High on lesser curvature near gastro-esophageal junction



Classification of Gastric Ulcers(GU)

Type 5

- Secondary to chronic use of non-steroidal anti-inflammatory drugs (NSAID)
- Can occur anywhere in the stomach.



Pathogenesis

Traditionally duodenal ulcers are seen as a problem with acid hypersecretion and gastric ulcers as a mucosal resistance problem.



Pathogenesis

The following factors play a role :

- Gastric acid
- Gastric stases
- Enviromental factors are very important
- Helicobacter pylori infection
- NSAID
- Mucosal resistance
- Genetic predisposition
- Defective angiogenesis- non-healing secondary to ischaemia
- Hypercalcaemia
- Chronic steroid use



Pathogenesis

- With **GU malignancy** has always to be excluded with an biopsy.



Clinical Picture

DUODENAL ULCER

- Epigastric pain – Central or slightly to the right
 - Burning or gnawing
 - Can spread to the back
 - Relieved by ingestion of food or anti-acid
 - Pain occurs when patient is hungry and a few hours after meals
 - Typically awakens patient at 2 o'clock in the morning
 - If penetration into the pancreas occurs the pain becomes more constant with more prominent backache and less relief.



Clinical Picture

DUODENAL ULCER

- Different degrees of nausea and vomiting
- Weight gain (Pain relieved by ingestion of food)
- Epigastric tenderness just to the right of the midline, may be absent



Clinical Picture

- **GASTRIC ULCER**

- Epigastric pain – Brought on by meals often within 30 minutes
- Nausea and vomiting
- Weight loss
- Epigastric tenderness

References

1. Jonston D., Martin J. Duodenal ulcer and Peptic Ulceration, Maingot's Abdominal Operations, Stanford CT: Appleton and Lange. 1997
2. Tanhipat C. Tanprayoon T, Na Thalang A, Surgical Treatment of perforated duodenal ulcer: A Prospective Trial between simple closure and definitive surgery. Br J Surg. 1985
3. Chung EC, Relationship between H. Pylori Infection and Peptic Ulcer, SMO, Sursical Department, United Christian Hospital Department of Surgery
4. Donovan AJ, Berne TV, Donovan JA. Perforated duodenal ulcer: an alternative therapeutic plan. Arch Surg. 1998
5. BGES (Belgian Group for Endoscopic Surgery), Open versus laparoscopic repair of perforated peptic ulcer- a randomised, single blinded multicenter trial
6. Paimela H, Oksala NK, Kivilaakso E., Surgery for peptic ulcer today. A study on the incidence, methods and mortality in surgery for peptic ulcer in Finland between 1987 and 1999. Dig Surg. 2004.



MCQ #1

According to Gaintree – Johnson
Classification the patient presented
would belong to which class of gastric
ulcers.

- a. Type 1
- b. Type 2
- c. Type 3
- d. Type 4



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MCQ #2

The treatment option for Peptic ulcer disease with the least mortality is.

- a. Vagotomy with Pyloroplasty
- b. Vagotomy with antrectomy
- c. Highly selective vagotomy
- d. Simple closure with omental patching



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MCR #1

The following factors play a role in the pathogenesis of Peptic Ulcer Disease

(a = 1,2,3; b = 1,3; c = 2,4; d = 4 only; e = all)

- a. Gastric Acid
- b. Mucosal Resistance
- c. Environmental factors
- d. Hypercalcemia



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MCR #2

The clinical presentation for Duodenal ulcers includes the following:

(a = 1,2,3; b = 1,3; c = 2,4; d = 4 only; e = all)

- a. Epigastric pain
- b. Epigastric tenderness
- c. Nausea
- d. Weight gain



MCR #2

The clinical presentation for Duodenal ulcers includes the following:

(a = 1,2,3; b = 1,3; c = 2,4; d = 4 only; e = all)

- a. Epigastric pain
- b. Epigastric tenderness
- c. Nausea
- d. Weight gain



MCR #3

The following items characterize a Type 1 Gastric Ulcer.

(a = 1,2,3; b = 1,3; c = 2,4; d = 4 only; e = all)

- a. At incisura on the lesser curvature
- b. Blood group A
- c. Not associated with increased acid secretion
- d. Secondary to stasis caused by duodenal ulcer



MCR #3

The following items characterize a Type 1 Gastric Ulcer.

(a = 1,2,3; b = 1,3; c = 2,4; d = 4 only; e = all)

- a. At incisura on the lesser curvature
- b. Blood group A
- c. Not associated with increased acid secretion
- d. Secondary to stasis caused by duodenal ulcer

Thank You.