

HU - PYQ

Surgery

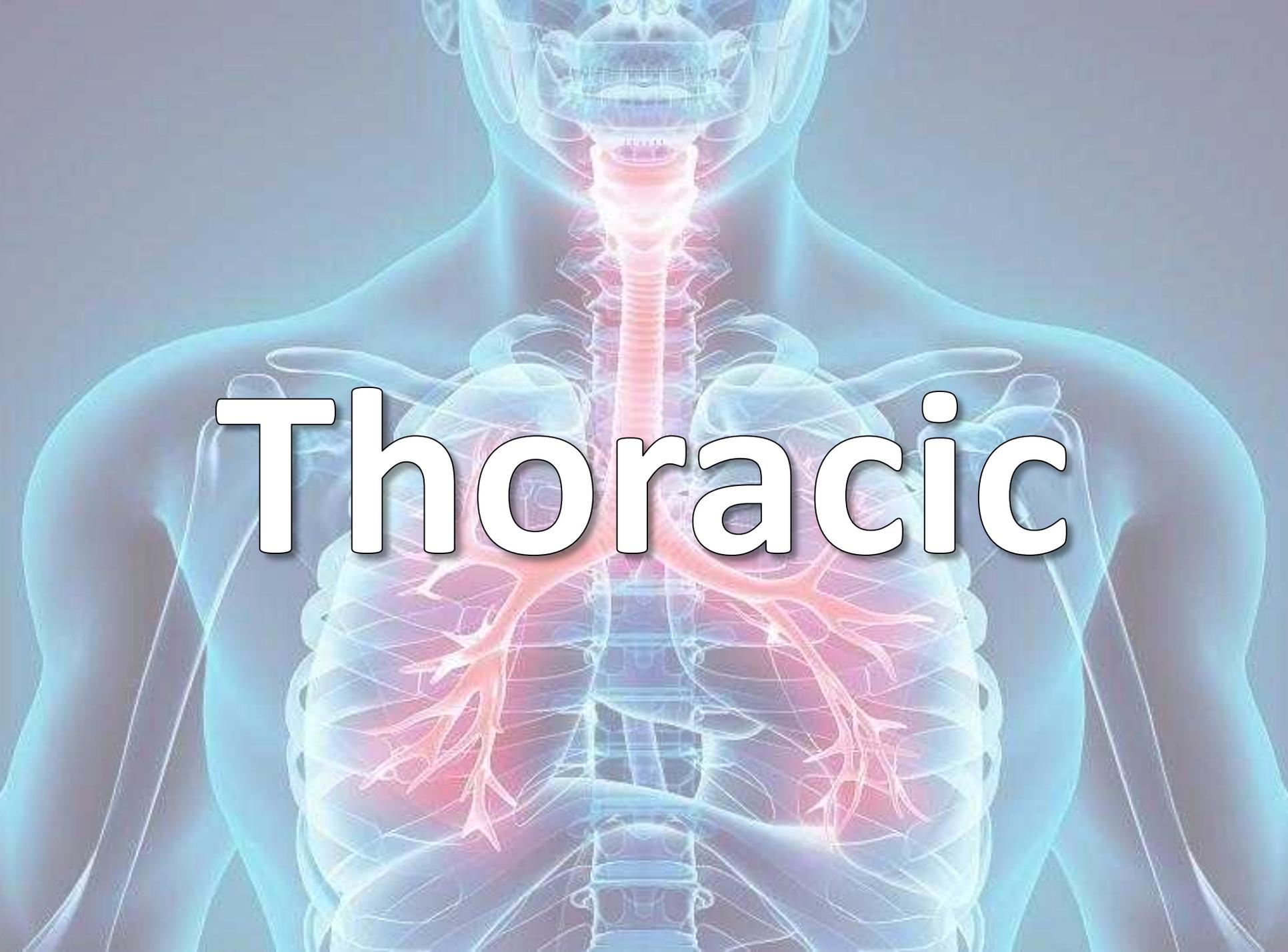
miniOSCE

Done By: Yazan Alawneh

Note: the answers in this file are based on the PYQ, so there is a possibility of inaccurate answers

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Thoracic

Q: This is a chest X-Ray for a 35-years old female with a history of breast cancer 3 years ago, who presented to the clinic with progressive shortness of breath and cough.

Q1: What is the Dx?

- Malignant Pleural Effusion

Q2: What is the next step in Mx?

- Tube thoracostomy (Chest tube)



Q1: What is the Dx?

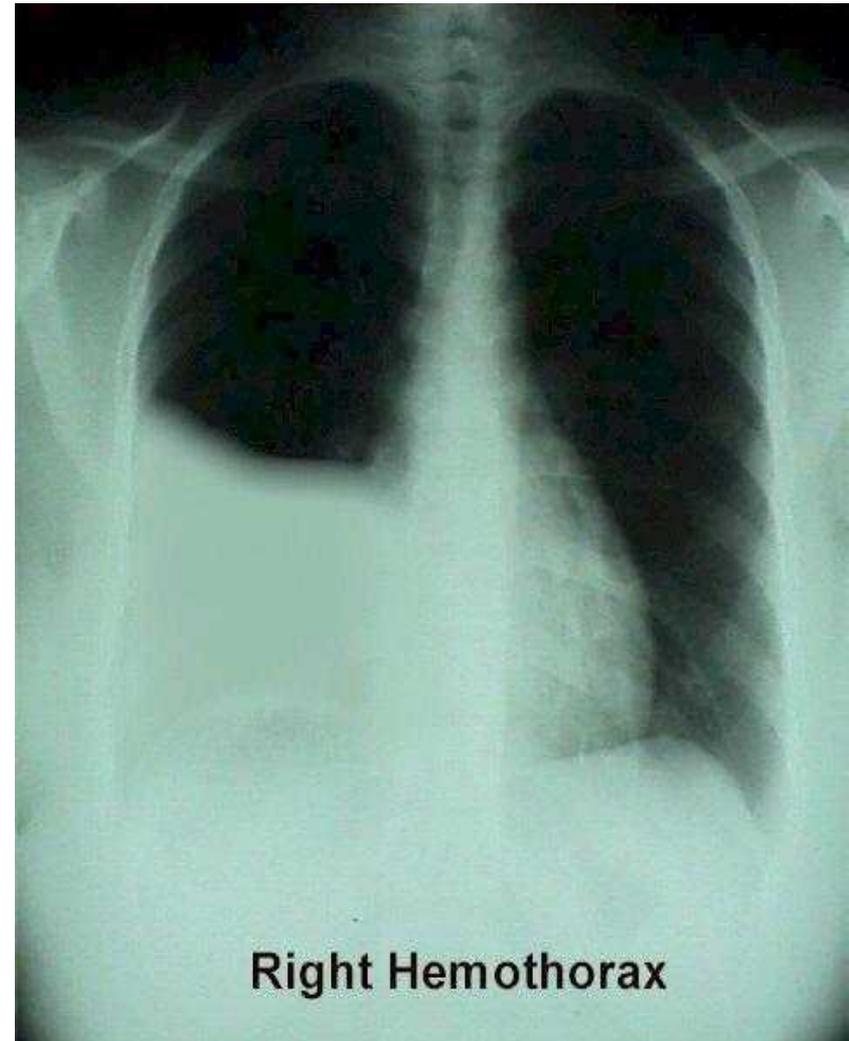
- Right sided hemothorax

Q2: Name 2 other findings?

- 1) Absence of diaphragmatic angle
- 2) Right side multiple rib fractures
- 3) Right side clavicle fractures

Q3: What are the indication of needle thoracotomy after chest tube insertion?

- initial loss >1.5 L of blood
- Continuous blood loss of 200 ml per hour over 2-4 hour



Q: Hx of motor vehicle accident (MVA):

Q1: What is the Dx?

- Left sided hemothorax

Q2: What is the Mx?

- Chest tube insertion



Q: A patient after a motor vehicle accident?

Q1: What is the Dx?

- left sided hemothorax
(obliterated costophrenic angle)

Q2: What is the rapid initial Mx?

- Needle decompression

Q3: What is the definitive Mx?

- Chest tube



Q: A scuba diver came to ER, his CXR shows the following:

Q1: What is the immediate MX?

- Needle thoracostomy

Q2: Where to insert the needle?

- 2nd intercostal space

Q3: What is the procedure you want to do next?

- Pleurodesis



Q1: What is the Dx?

- Right sided tension pneumothorax

Q2: Mention 2 signs on CXR?

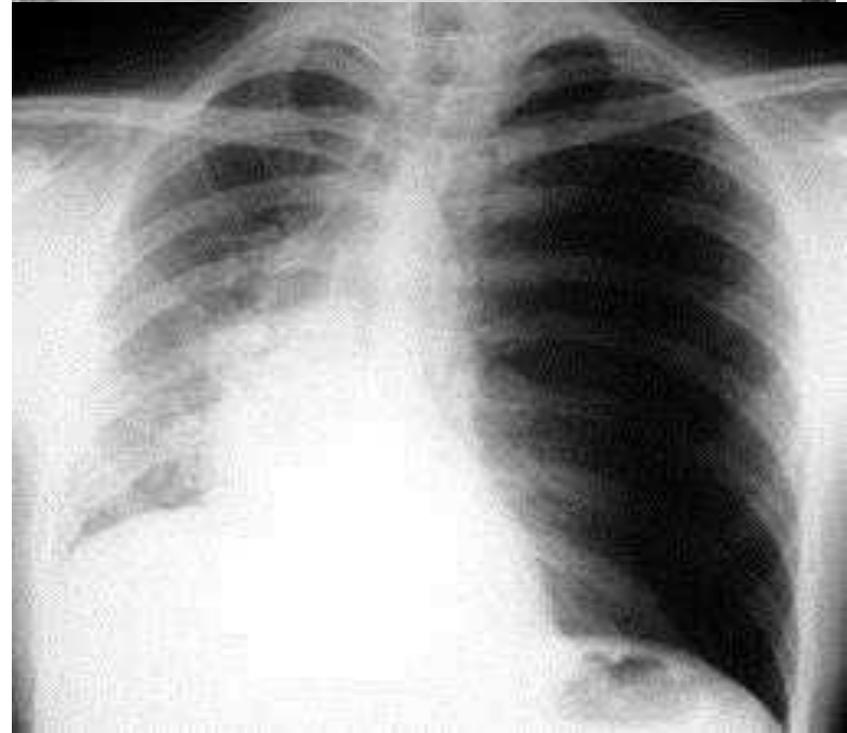
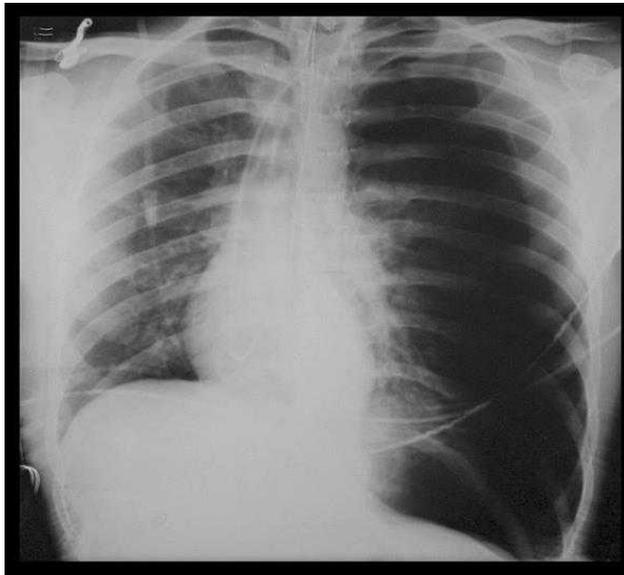
- 1) Tracheal deviation
- 2) Left lung compressed or collapsed

Q3: Mention 2 signs on PE?

- 1) Absent breath sounds in affected side
- 2) Jugular venous distention

Q4: What is the Mx?

- Needle decompression
- Chest tube



Q: 18 year old male presented with sudden progressive shortness of breath and underwent this investigation:

Q1: What is the Dx?

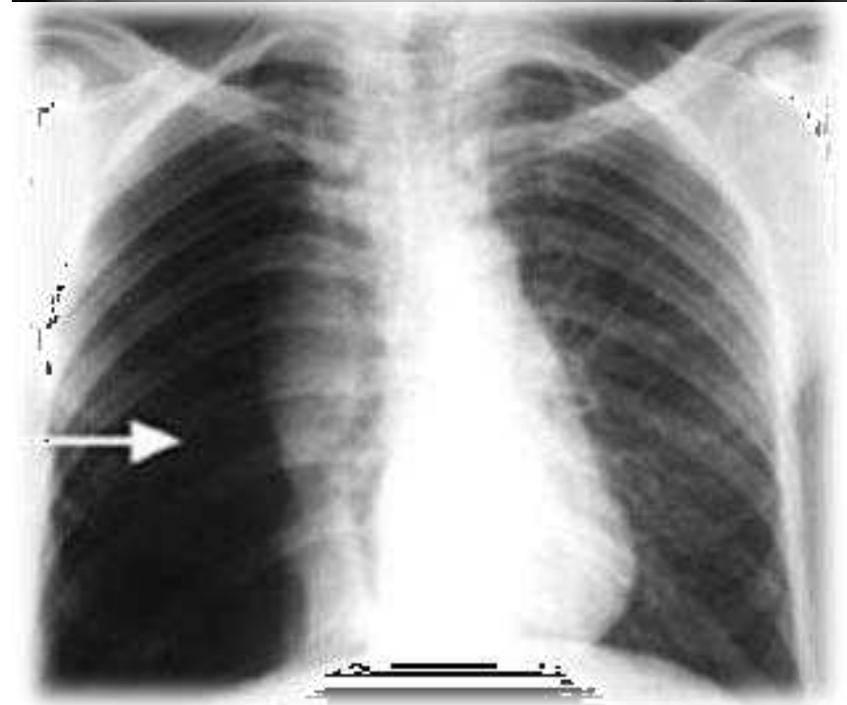
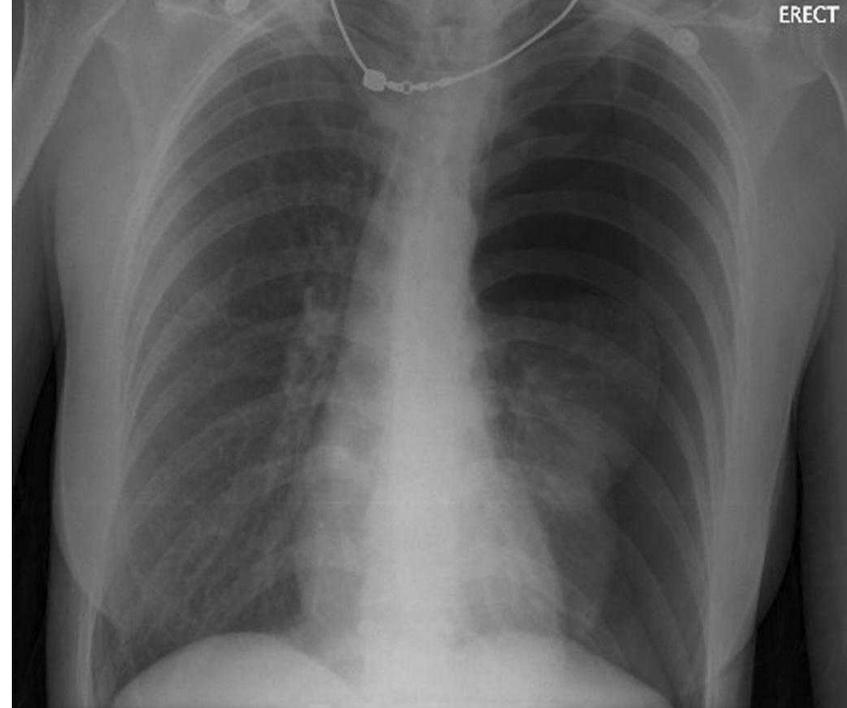
- Spontaneous Pneumothorax

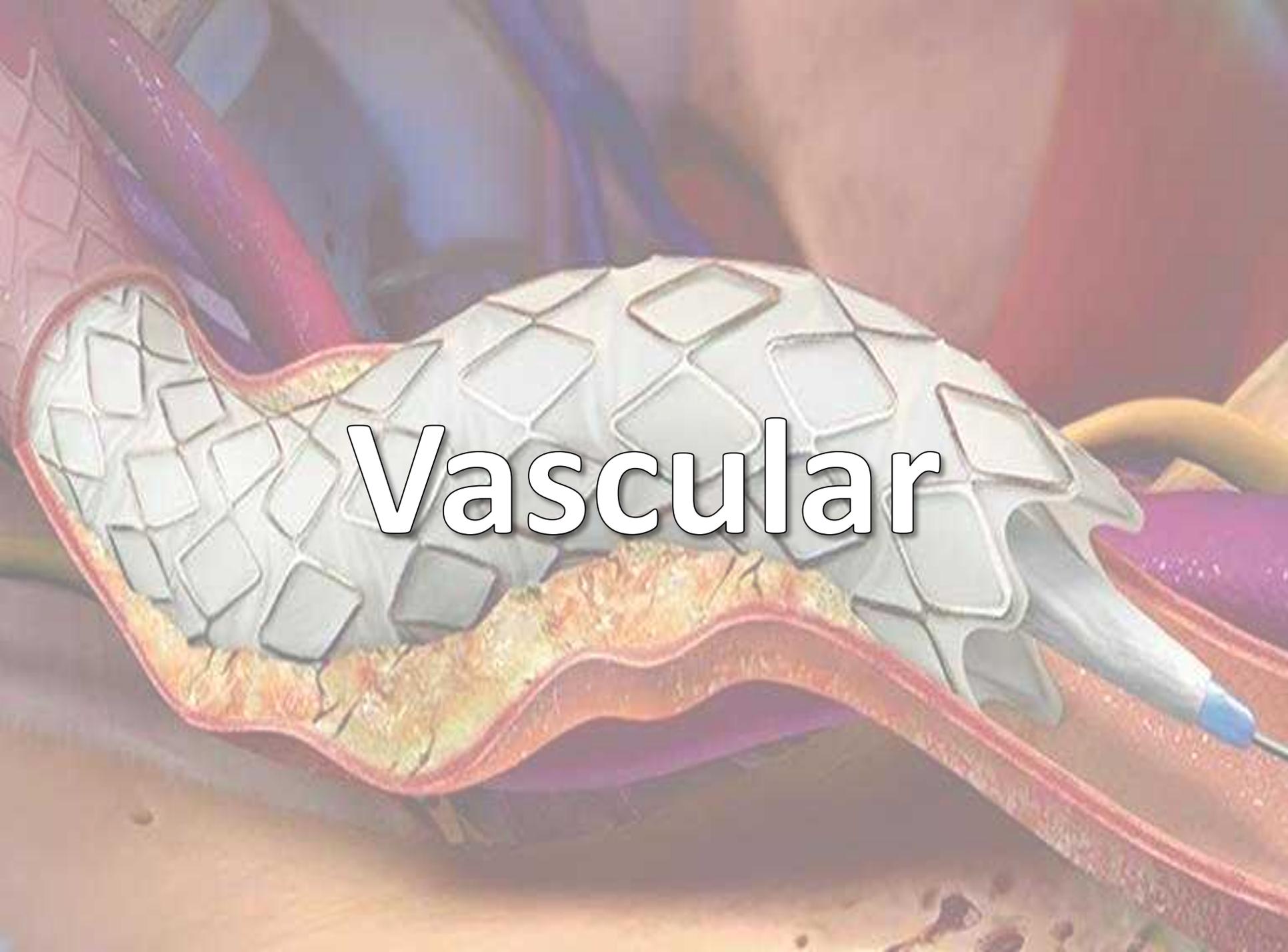
Q2: What is the Mx?

- Chest tube/needle

Q3: Give 2 indications to do surgery?

- Failure of decompression
- Hemo-pneumothorax



An anatomical illustration of a blood vessel, possibly an artery, shown in a cross-section. The vessel has a thick, reddish-brown wall. A blue catheter is inserted into the lumen of the vessel. The word "Vascular" is written in large, white, bold letters across the center of the image. The background shows other vessels and tissue in various colors like purple, blue, and yellow.

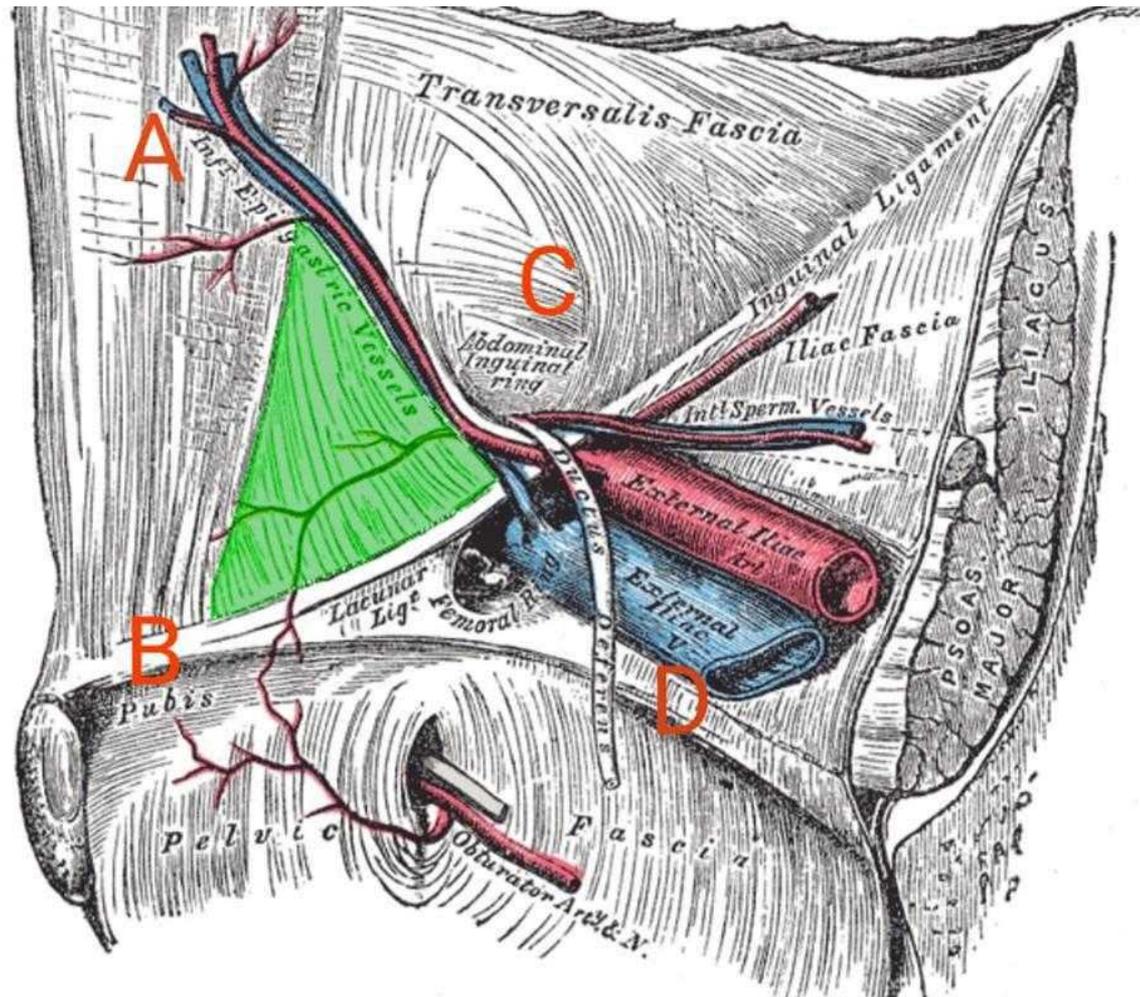
Vascular

What's A: inferior epigastric artery

What's B: direct inguinal hernia

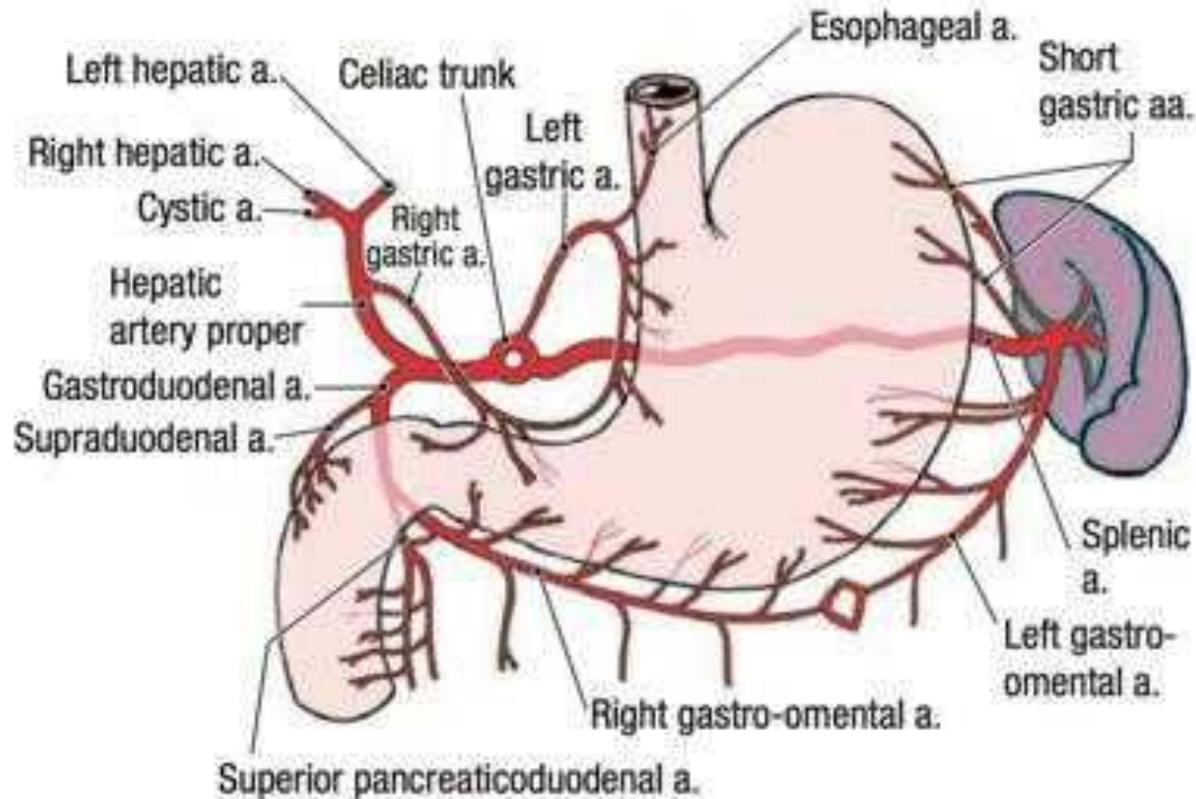
What's C: indirect inguinal hernia

What's D: femoral hernia



Q: A Question was asking about the following arteries?

- 1- Left gastroepiploic artery
- 2- Gastroduodenal artery
- 3- Short gastric arteries



Q: Patient had hip replacement 5 days ago:

Q1: What is the Dx?

- DVT

Q2: What is the Mx?

- LMWH & Warfarin on discharge

Q3: Mention 4 DDX?

1) DVT

2) Cellulitis

3) Lymphadenopathy, lymphatic obstruction

4) Chronic Deep Vein Insufficiency

5) Rupture of baker's cyst

Q4: What are the complications:

1) Pulmonary embolism

2) Ulcers

3) Ischemia



Q1: What is the Dx?

- Varicose veins

Q2: What is the system involved in this part (name the vessel)?

- Great (long) Saphenous vein
(Superficial Venous System)

Q3: Name 2 modalities of Mx?

- 1) High ligation and vein stripping
- 2) Sclerotherapy

Q4: Mention 2 complications?

- 1) Ulcers
- 2) Bleeding
- 3) Thrombophlebitis
- 4) Discomfort, pain



Q5: Mention 2 minimally invasive procedures to do for this condition?

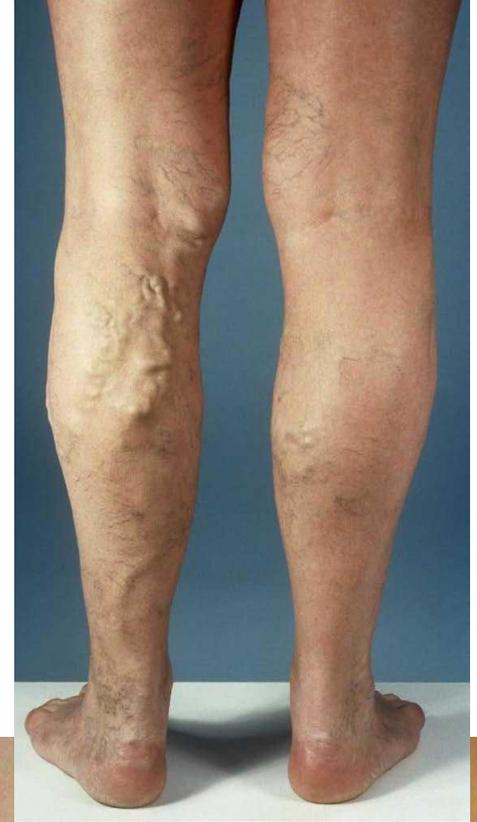
- 1) Sclerotherapy
- 2) Radiofrequency Ablation
- 3) Endovenous Laser Ablation

Q6: Best imaging test?

- Doppler US or Venogram

Q7: How to determine the level of defect in the varicose veins?

- Turncate test



Q1: What is this?

- AV shunt

Q2: Done in patients that undergoes what?

- Hemodialysis

Q3: What is the complication seen in the picture?

- Aneurysm



Q: A 60 year old female with CKD on hemodialysis:

Q1: What is the following complication?

- Pseudoaneurysm

Q2: Mention other complications that may occur?

- Thrombosis, Steal syndrome, CHF, infection



Q: Patient complained of abdominal pain and a pulsatile mass:

Q1: Name of this study?

- Angiogram

Q2: What is this pathology and where is its location?

- AAA (Abdominal aortic aneurysm)
near the bifurcation

Q3: Mention 2 lines of Mx?

- 1) Open surgical repair
- 2) Endovascular surgery

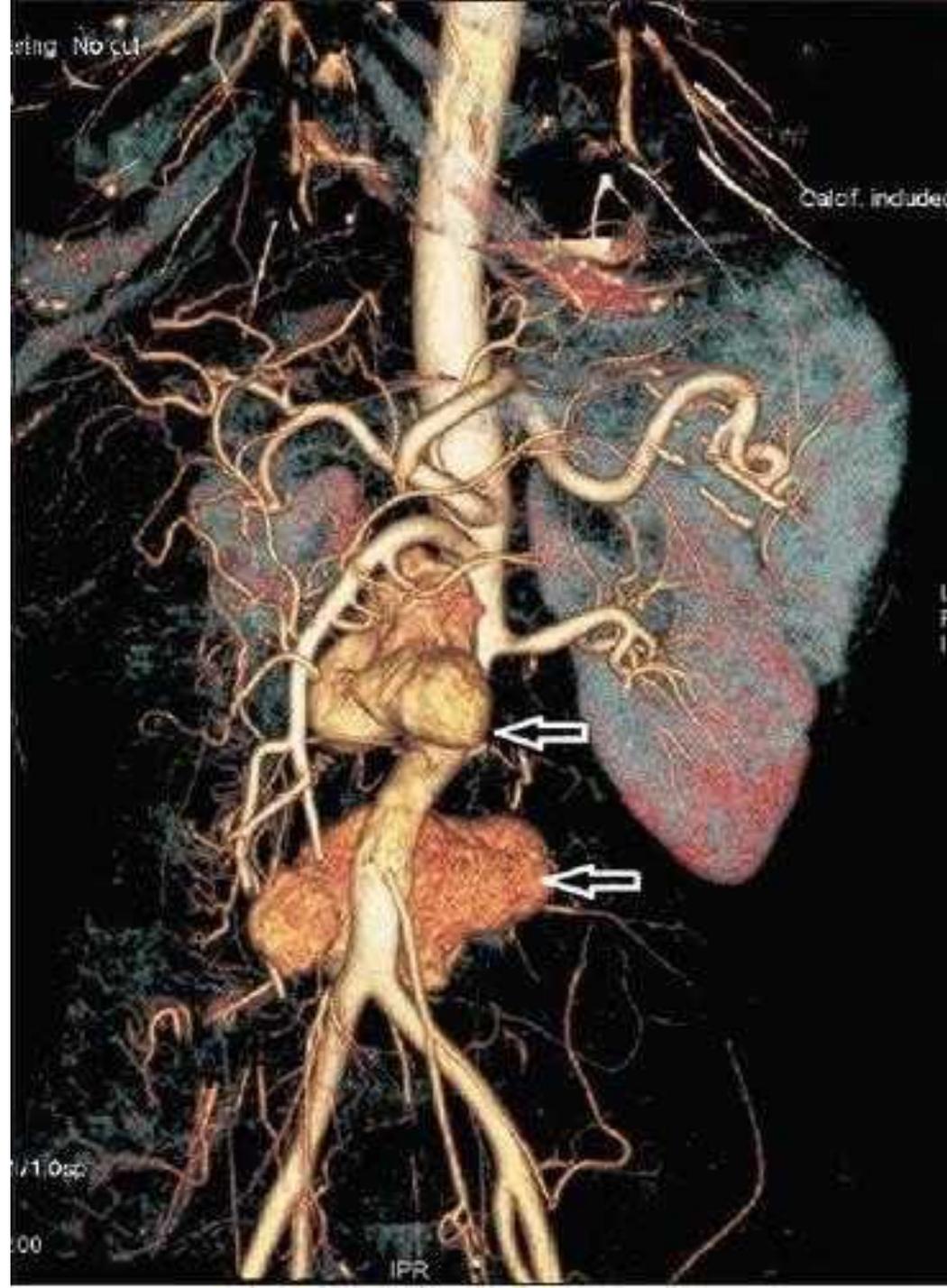


Q1: Name of this study?

- 3D angiography

Q2: What is your Dx?

- AAA



Q: A patient with a hx of atrial fibrillation, presented with a sudden severe abdominal pain:

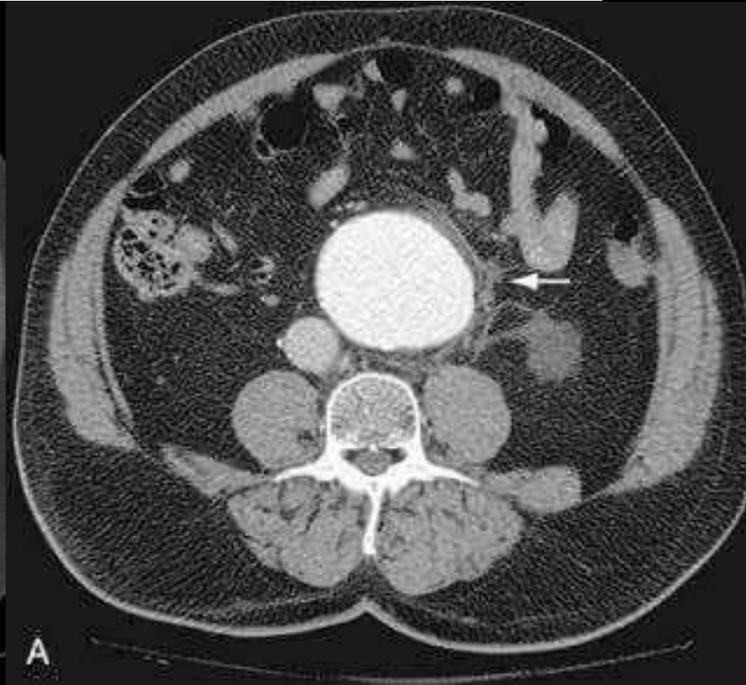
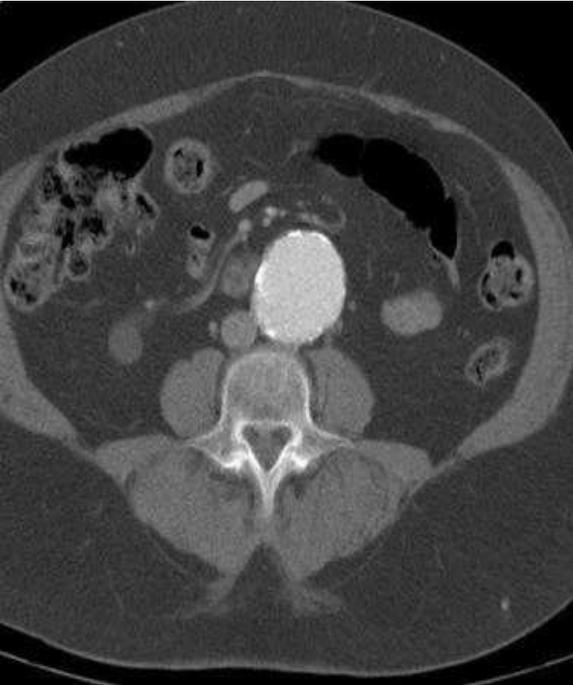
Q1: Name of this study?

- CT Angiogram

Q2: Dx?

- AAA (Abdominal aortic aneurysm)

based on the Hx: Rupture AAA is more accurate

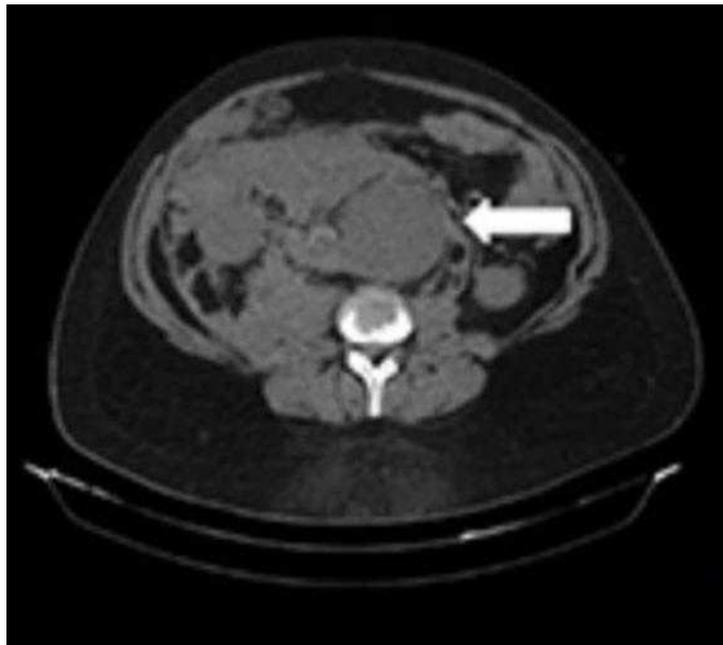
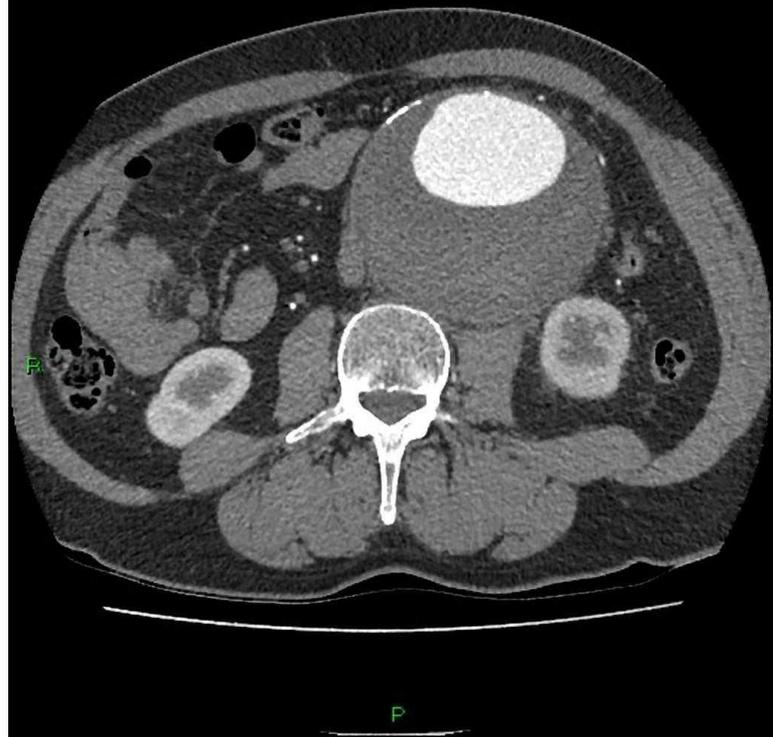


Q1: What is the structure?

- Abdominal Aorta

Q2: What's the best repair method for this?

- Stent



Q: This is a CT Angio for the renal arteries:

Q1: What is the Dx?

- Bilateral Renal Artery Stenosis

Q2: What is your Mx?

- Renal Angioplasty & Stenting



Q: After RTA, the patient present with dilated veins?

Q1: Mention 2 causes?

- 1) Pericardial Effusion
- 2) Cardiac Tamponade

Q2: What is your Mx?

- Pericardiocentesis



Q1: What is the Dx?

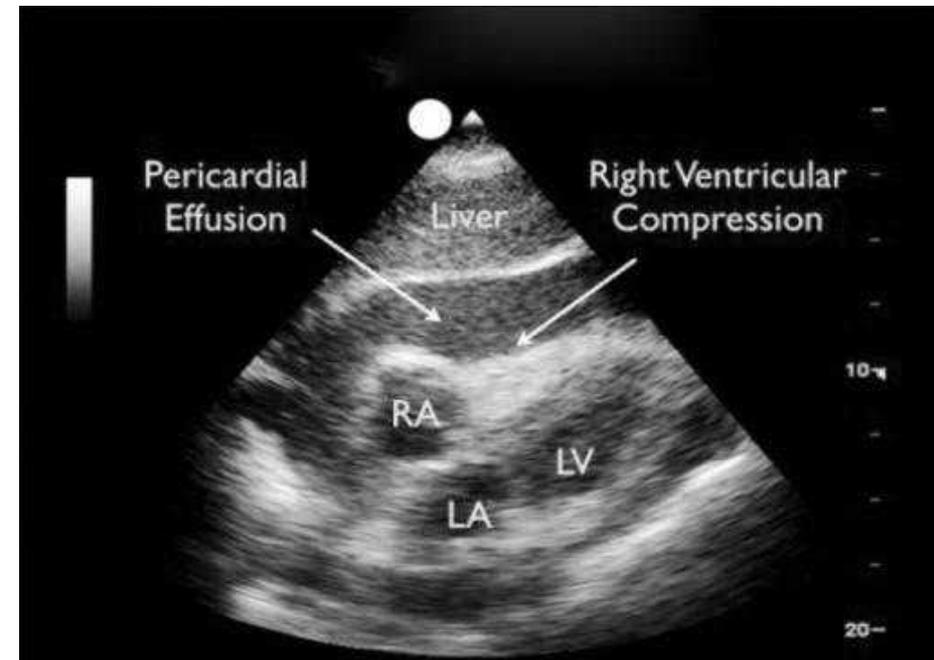
Cardiac Tamponade

Q2: What is the C/P that the patient come with?

- 1) Beck's triad :
hypotension
increased JVP
muffled heart sounds.
- 2) Pericardial effusion
- 3) Kussmaul's sign.

Q3: What is the Mx?

immediate decompression via
needle pericardiocentesis.



Q: Post-RTA patient came to ER, he was hypotensive with SOB:

Q1: What is the pathology?

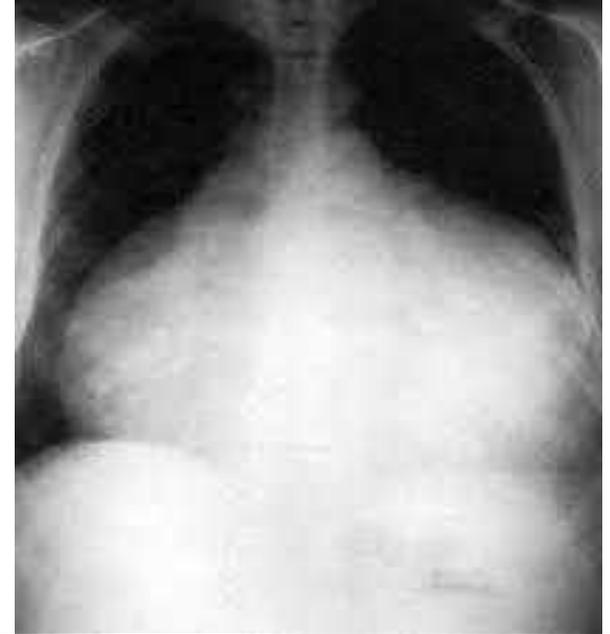
- Cardiac tamponade

Q2: What is the next step in Mx?

- Pericardiocentesis

Q3: What is the consequence for this pathology?

- Obstructive shock
- Pulmonary Edema
 - Beck's Triad



Q: a Pt experienced sudden severe pain radiating to the back:

Q1: What is the X-Ray finding?

Widened Mediastinum

Q2: What is the Dx?

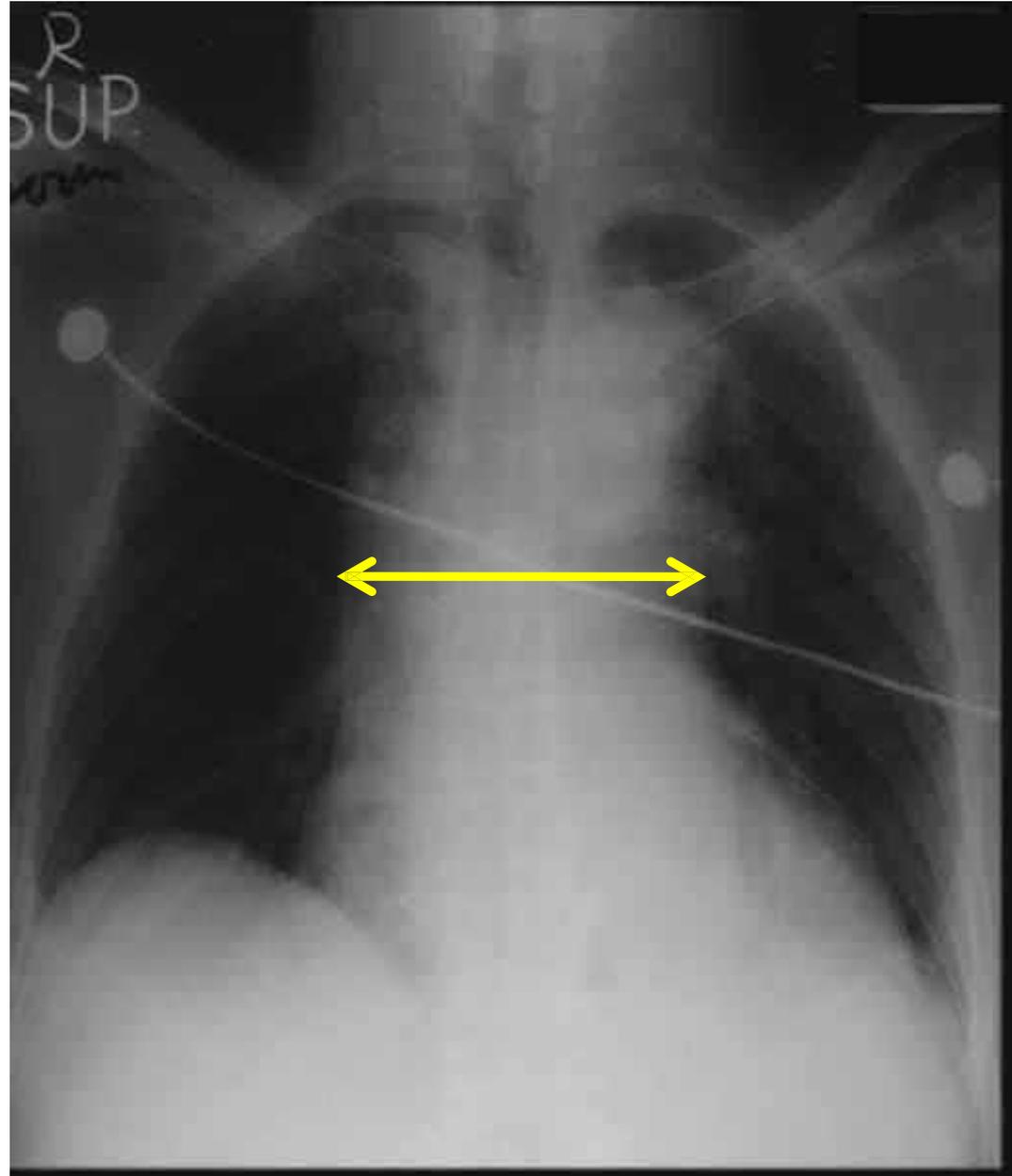
Aortic dissection

Q3: What is the gold standard for Dx? And what is the disadvantage for it?

Aortography, time consuming

Q4: What is the Mx:

- 1) Stanford A: Surgical
- 2) Stanford B: Medical (control BP)



Q1: What is the Dx? Venous Ulcer

Q2: What is the pathophysiology?

- Blood stasis and increased Pressure inside the veins due to venous valves insufficiency

Q3: if this happened after 5 days of surgery what is the main cause?

DVT

Q4: Risk of transformation to? SCC

Q5: Name 2 causes?

- venous insufficiency and stasis (as DVT, varicose veins)

Q6: What is the sign?

- Lipodermatoseclerosis



Q7: What is the most common site?

Most Common site is lower 1/3 of the leg just above the medial malleolus.



Q8: Name 2 points that goes with your Dx?

- 1) Location: lower medial aspect of the leg
- 2) Hyperpigmentation around the ulcer



Q: A 75 year old male, heavy smoker, presented with this lesion.

Q1: Identify the lesion:
ischemic arterial ulcer

Q2: Give two symptoms which might be associated with the condition:

- 1) claudication
- 2) rest pain



Q1: What is the most probable cause for this patient's condition?

Lower Limb Ischemia

Q2: What is the best imaging test to put a treatment plan?

CT Angio, Angiogram,
Doppler US



Q1: What is the pathology?

- Gangrenous necrosis of the big toe

Q2: Mention 4 signs of peripheral ischemic disease?

- 1) Pale
- 2) Hair loss
- 3) Cold
- 4) Pulselessness



Remember the 6 P's of peripheral vascular disease:

Pallor

Pain

Paresthesia

Paralysis

Pulselessness

Poikilothermia

Q: A patient walks 400 meters before feeling pain and having to rest, his job requires him to walk for 1 kilometer everyday, what do you do for this patient?

a) Lifestyle modification

b) Medical therapy

c) Bypass

d) Angiogram (**correct answer**)

A doctor in a white coat is holding a tablet computer. Overlaid on the image is a glowing, semi-transparent anatomical diagram of the human genitourinary tract, showing the kidneys, ureters, bladder, and reproductive organs. The diagram is rendered in a reddish-orange color with a white wireframe overlay. The text 'Genitourinary Tract' is written in a large, white, bold font with a black outline, centered over the diagram.

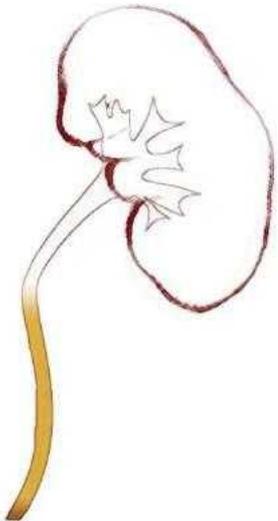
Genitourinary Tract

Q1: What is the imaging?

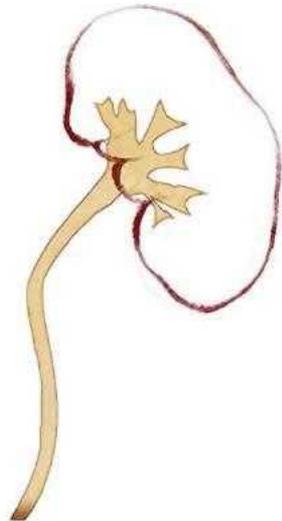
- MCUG

Q2: Mx?

- Antibiotic for UTI
- Endoscopic injection
- Surgery



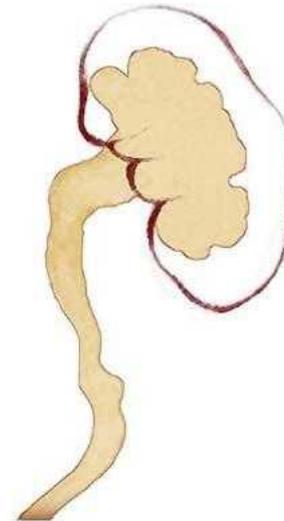
Grade I



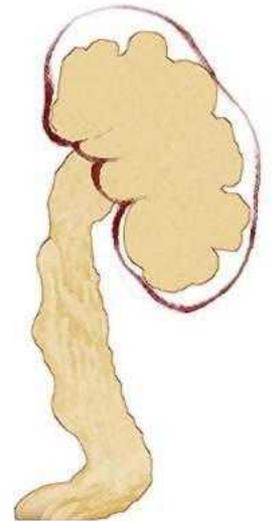
Grade II



Grade III



Grade IV



Grade V

Q1: What is the name of this study?

- MCUG

Q2: What is the name of this pathology (without abbreviation)?

- Vesicouretral reflux (VUR)



Q1: What is the pathology?

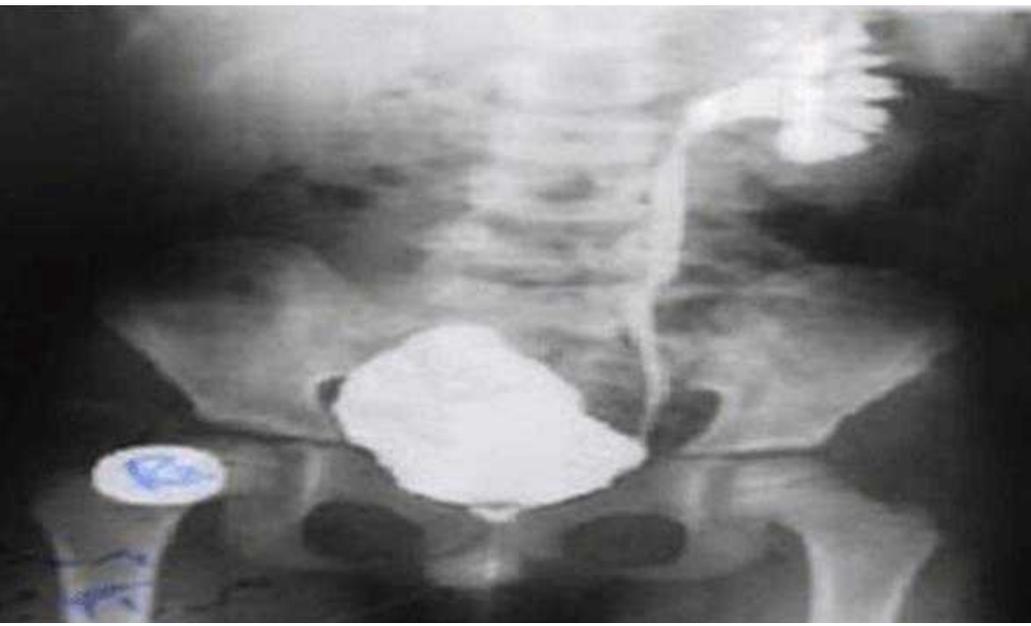
- Left dilated tortuous ureter and hydronephrosis (right pic)

Q2: What is the cause behind this?

- Posterior urethral valve
 - Congenital

Q3: What are the 2 complications that might occur?

- 1) Recurrent UTIs
- 2) Kidney scarring



Q1: Name the finding?

- Staghorn stone or Struvite stone

Q2: What is the Etiology?

- Urease producing bacteria (proteus, klebsiella, pseudomonas)



A photograph of a person's midsection, showing a grey button-down shirt tucked into dark pants with a black belt. The person's right hand is pressed against their stomach, indicating discomfort or pain. The background is a plain, light-colored wall.

Gastrointestinal Tract (Esophagus, Stomach & Intestines)

Q: Patient came complaining of dysphagia for both liquids & solids:

Q1: What is the sign?

- Bird peak sign

Q2: Name the study?

- Barium swallow

Q3: What is the definitive Dx?

- Achalasia

Q4: What is the definitive diagnostic test?

- Manometry

Q5: Mention 2 modalities of Mx?

- 1) Esophageal sphincter (Hellers) Myotomy
- 2) Balloon dilation



May lead to esophageal carcinoma 2ry to Barrett's esophagus from food stasis.



Q: a pt came complaining of dysphagia for both solids and liquids.

Q1: What is the Dx?

Diffuse Esophageal Spasm (DES)

Q2: What is the sign?

corkscrew appearance

Q3: How to Diagnose?

- 1) Barium
- 2) Manometry (most accurate)

Q4: What is the Mx?

diltiazem or nifedipine and nitrates

Q5: How to differentiate it from Nut-cracker esophagus?

By manometry (the nut cracker: peristaltic contractions with high amplitude, while the DES is non-peristaltic with high contractions)



Q1: Define Barret's esophagus?

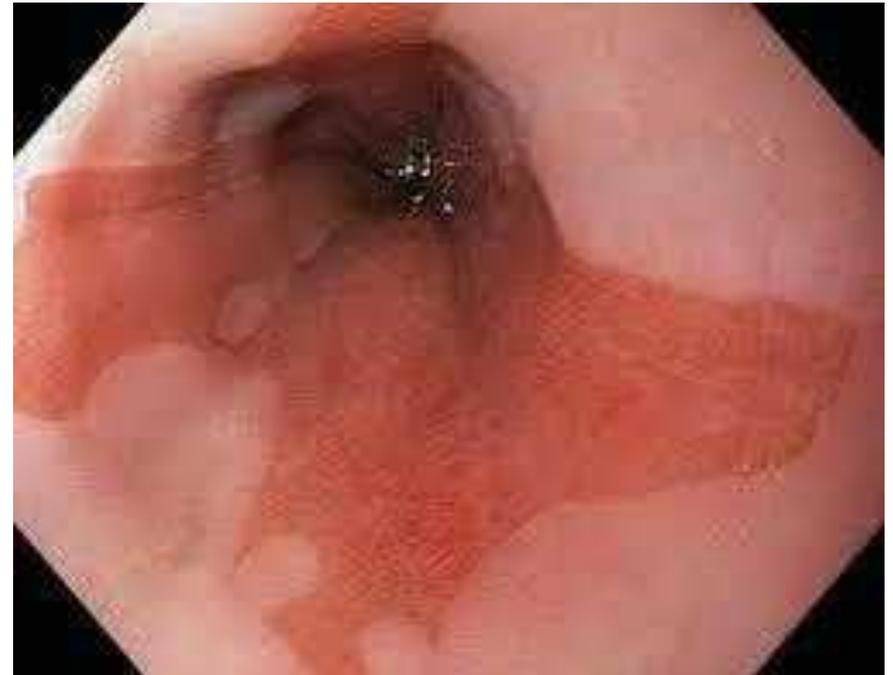
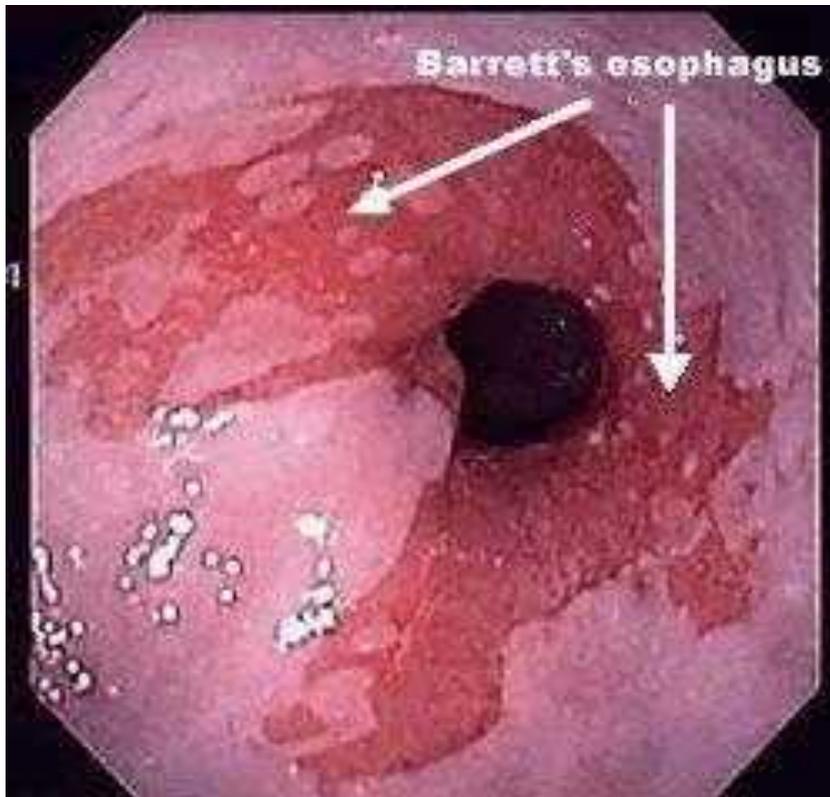
Change in the normally squamous lining of the lower esophagus to columnar epithelium (metaplasia)

Q2: What common type of cancer you will see? Adenocarcinoma

Q3: What is the cause? Chronic GERD

Q4: How to Dx? Endoscopy

Q5: Mx? PPI and follow up



Q1: What is the Dx?

Esophageal Varices

Q2: Mx?

- 1) Therapeutic endoscopy
- 2) Ligation, banding, sclerotherapy
- 3) β -blockers (e.g. propranolol).



Q1: What is the Dx?

Gastrointestinal Stromal Tumor
(GIST)

Q2: What is the MC site?

Greater curvature (Stomach)

Q3: What are the cells of origin?

Cells of Cajal

Q4: Name the Gene Mutation?

C-KIT

Q5: How to Mx?

Resection

Chemo (Imatinib)

Q6: How to Diagnose?

CT / EGD/ colonoscopy

Sx: abdominal pain/nausea/
abdominal mass/ occult GI bleeding.

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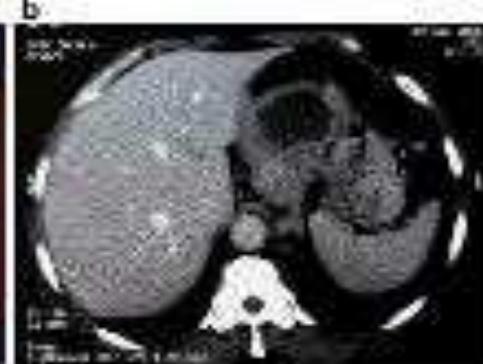
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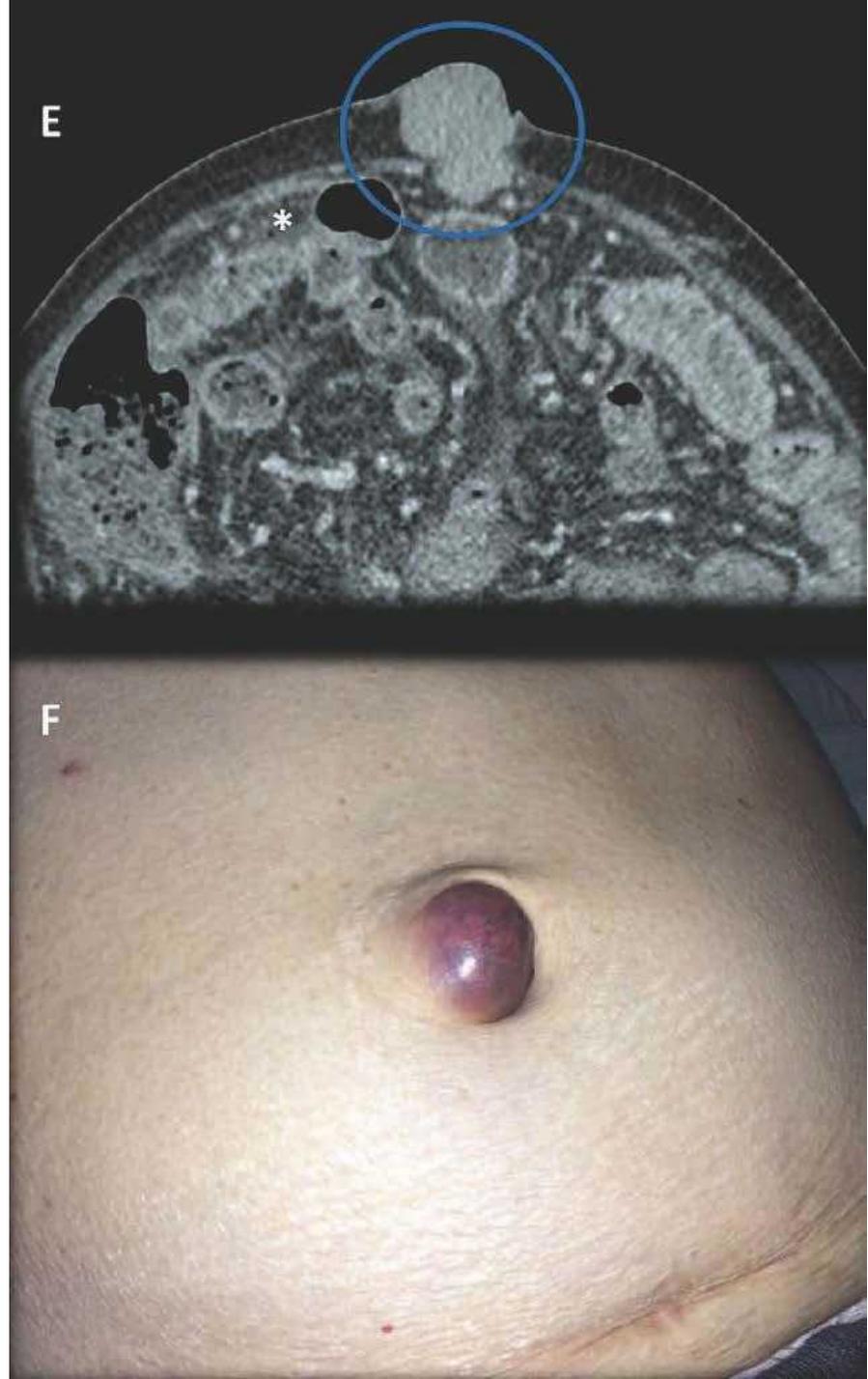
Q: A 50-years old male patient has recently become cachectic and developed ascites.

1. Name the findings on examination (lower picture) and CT scan (upper picture).

- Sister Mary Joseph Nodule

2. Mention 2 possible sources for this lesion.

- GI cancers, Gynecological cancers, Melanoma



Q: You are doing endoscopy and you found this lesion?

Q1: Describe what you see?

- Comment on the shape, size, location, color, presence of necrosis, discharge, etc..

Q2: What is the likely Dx?

- Stomach cancer or ulcer

Q3: Next step in Mx?

- Biopsy



Q: You are doing endoscopy and you found this lesion, pain is relieved by eating and exacerbated in empty stomach?

Q1: What is the likely Dx?

- Peptic (duodenal) ulcer

Q2: name 2 complications?

- 1) Perforation
- 2) Bleeding



Q1: What is A and B?

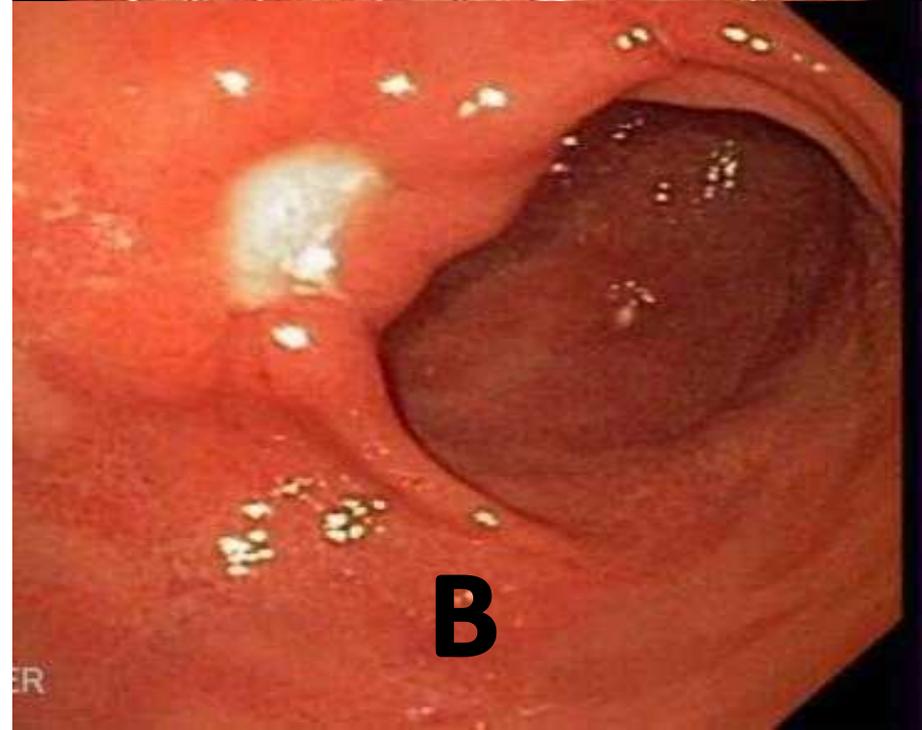
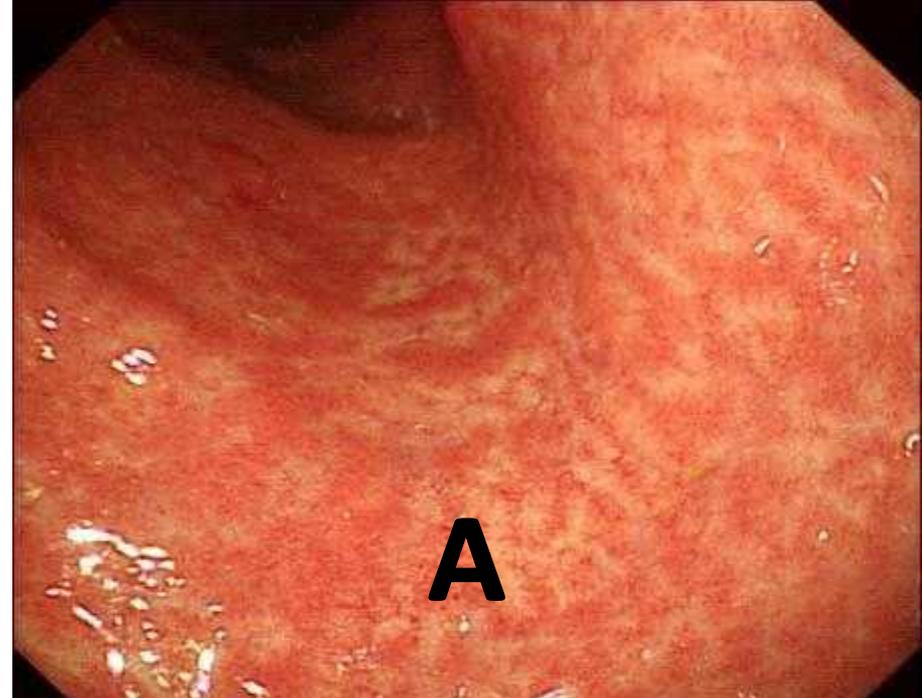
A > Gastritis “not sure”

B > Duodenal Ulcer

Q2: Name 2 causes?

1) NSAID

2) H. Pylori



Q: The patient presented with sudden severe pain and abdominal distension:

Q1: What is the sign?

- Coffee bean sign



Q2: Name the signs you?

- 1) Dilated large bowel
- 2) Coffee bean sign

Q3: What is your Dx? Sigmoid volvulus

Q4: What is the MC site? in Sigmoid

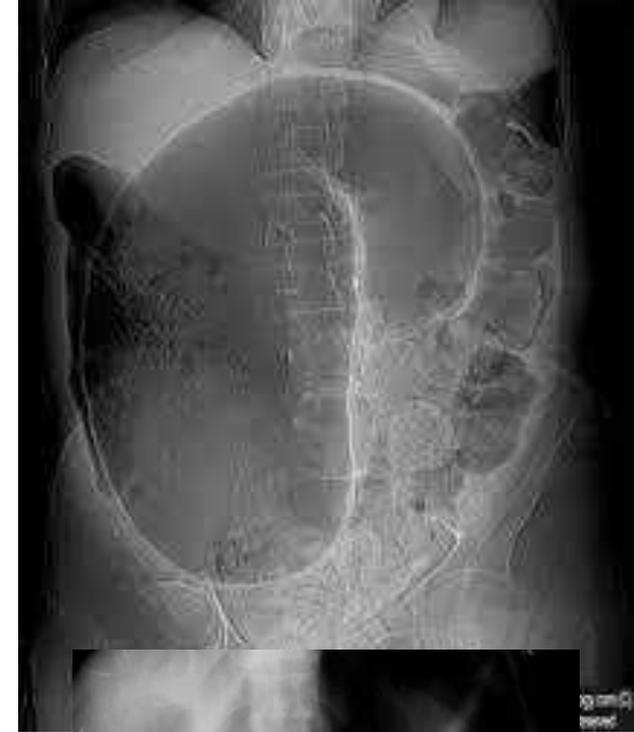


Q5: Mx?

- Resuscitation and untwist (detorsion) the bowel and go for surgery (this is done by means of sigmoidoscopy or colonoscopy)

Q6: Mention 2 causes for this condition?

- Chronic constipation
- Sigmoid tumor



Q1: What is the study?

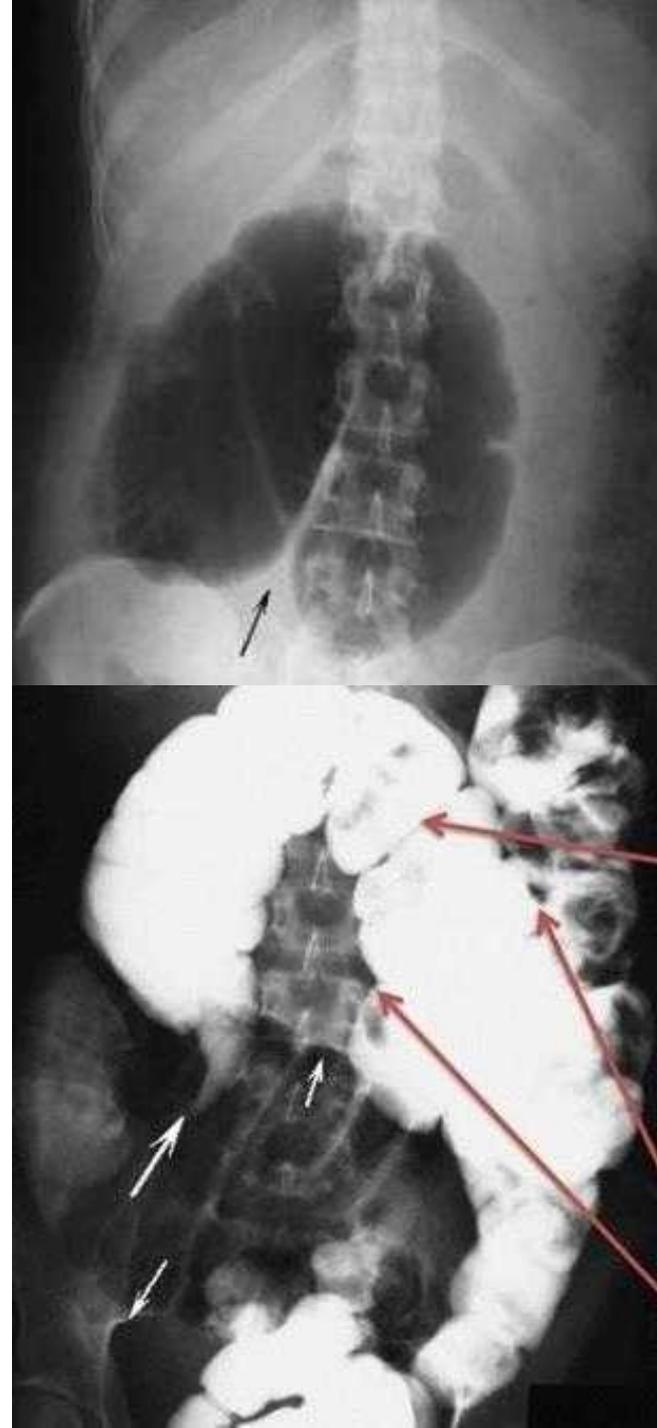
- Barium Enema

Q2: What is the Dx?

- Volvulus

Q3: What is the Mx?

- Detorsion

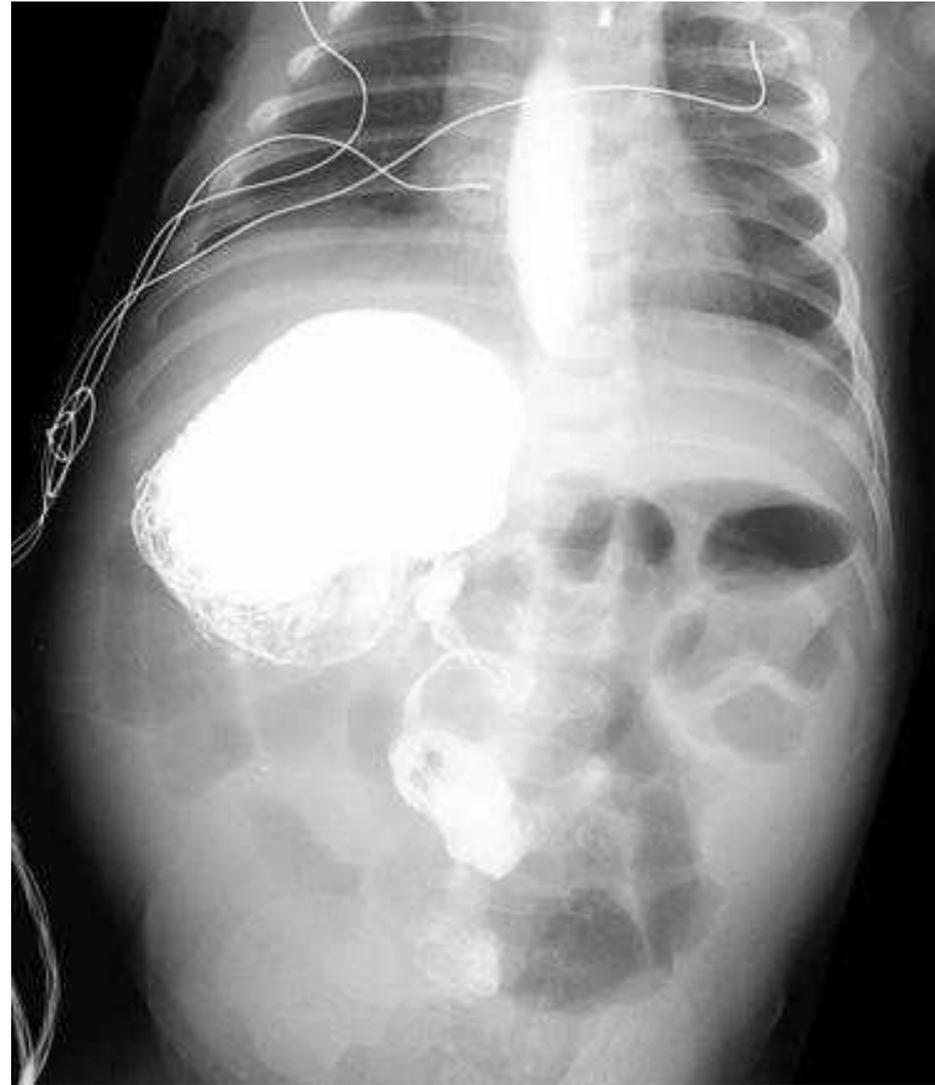


Q1: What is the study?

- Barium follow through

Q2: What is the pathology?

- Midgut volvulus



Q1: What is the Dx?

- Volvulus (Midgut)

Q2: If the bowel was viable and not gangrenous, what to do?

- Viable SB > Close and observe
- Other option: Ladd's Procedure



Q1: What is the study?

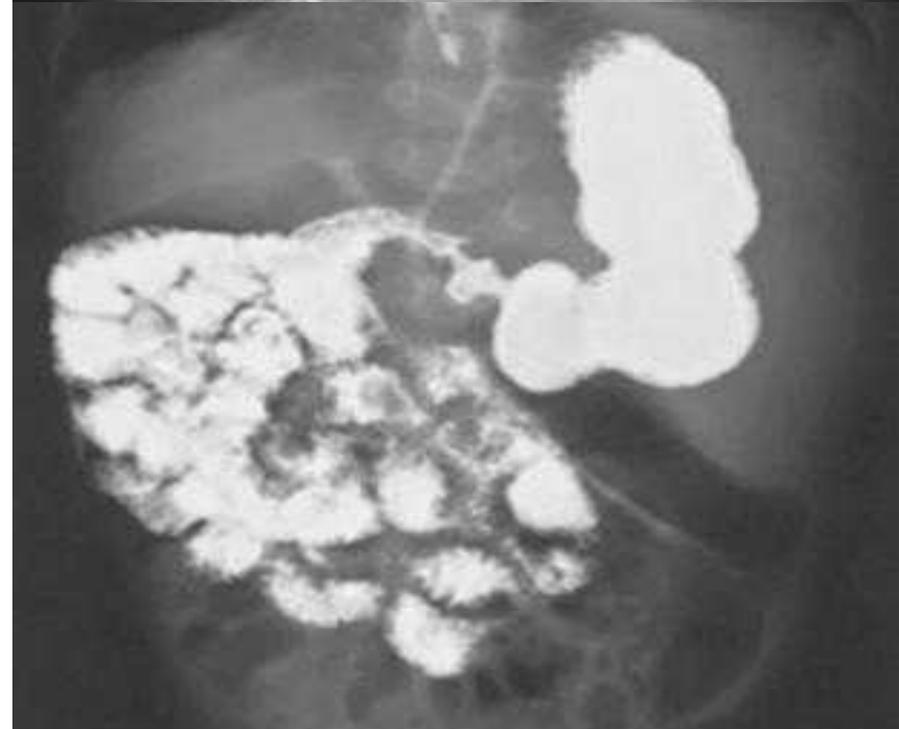
- Barium follow through

Q2: What is the pathology?

- Midgut volvulus due to malrotation

Q3: What is the Clinical ER Presentation?

- acute abdominal pain , distention , constipation , vomiting



Q1: What is the Dx?

Small intestinal obstruction

Q2: What is the radiological findings?

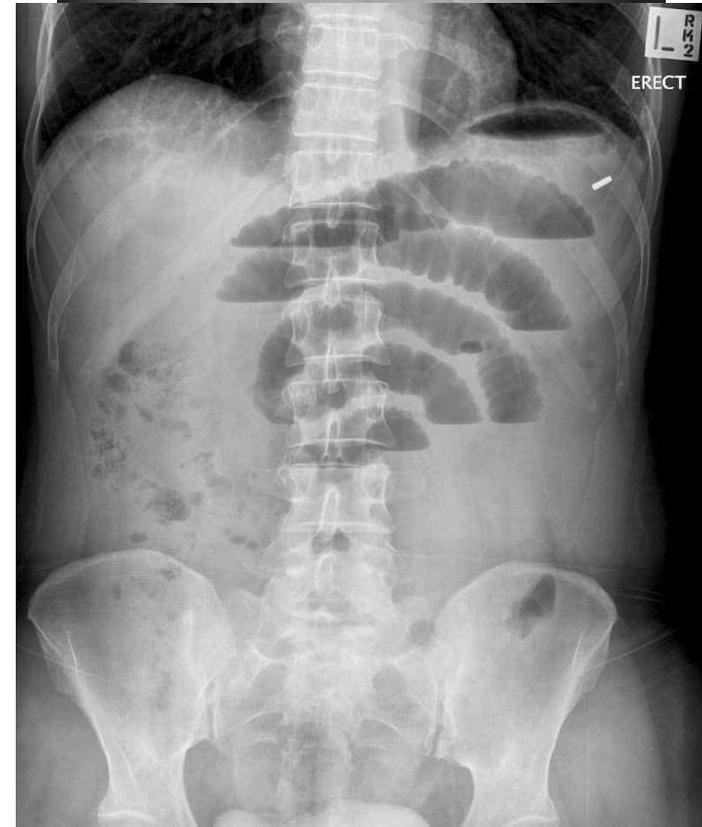
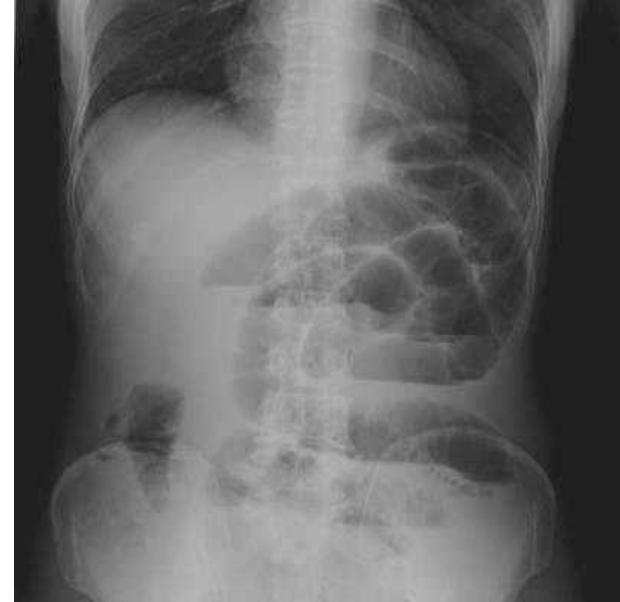
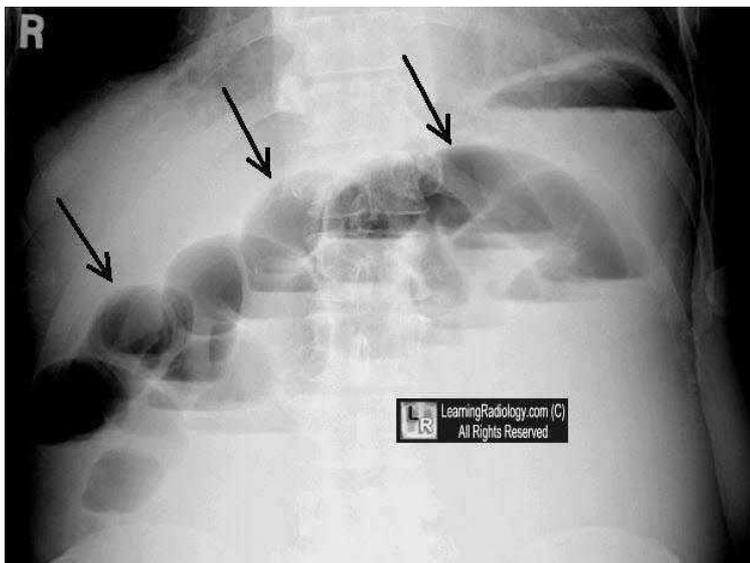
Dilated bowel loops (Jejunal), and air in the rectum

Q3: This is a picture of obstruction, Is it partial/complete? Why?

- Partial obstruction
- Because there is air in rectum

Q4: What is the appearance?

Step-ladder appearance



Q: A 30 year old female presented with sudden abdominal pain and fever and diffuse tenderness of the abdomen:

Q1: What is the Dx?

Perforated viscus

Q2: What is the radiological finding?

Air under diaphragm

Q3: What is the Mx?

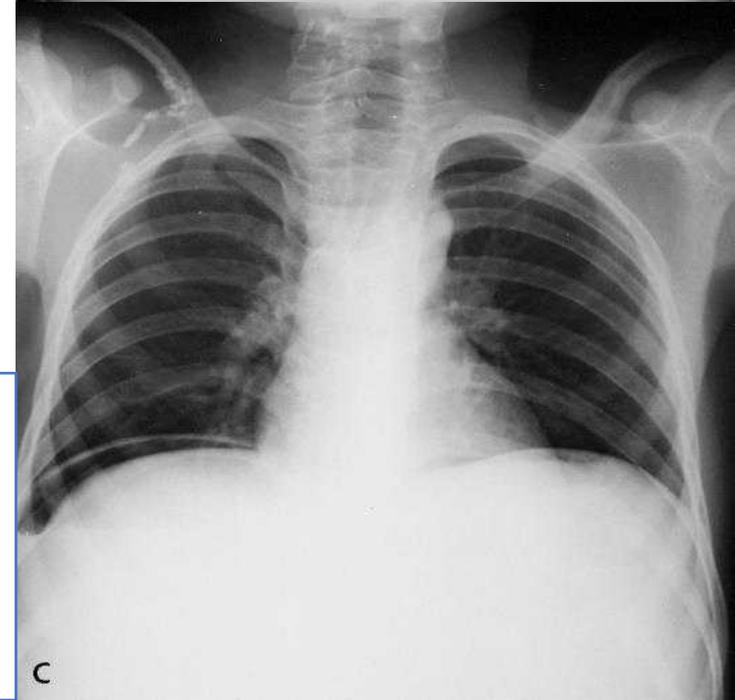
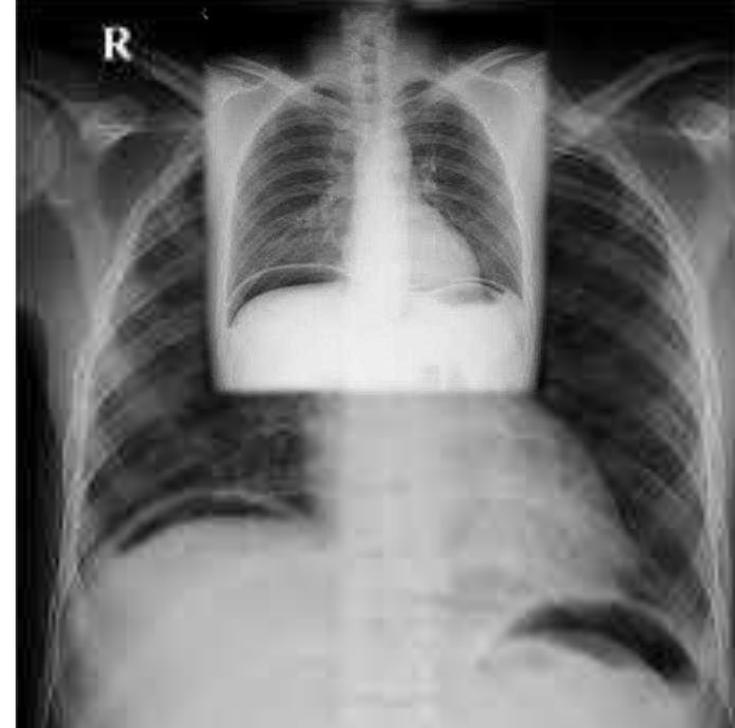
Laparotomy and exploration

Q4: What is the mcc?

Post-op

Causes:

1. Perforation of duodenal ulcer.
2. Following Laparoscopic procedure
3. Following Tubal Insufflation Test
4. Infection with gas forming organisms
5. Most common cause is post operative.
6. Chilaiditi's sign - due to interposition of colon between the Diaphragm and the Liver such a gas shadow can be obtained even in a normal individual.



Q: A 55 years old patient with PUD came with forceful vomiting:

Q1: What is the pathology?

- Gastric outlet obstruction (pyloric obstruction) – Pyloric Stenosis

Q2: What is the electrolyte disturbances the patient has?

- Hypokalemic hypochloremic metabolic alkalosis

Q3: What is the gold standard for Dx?

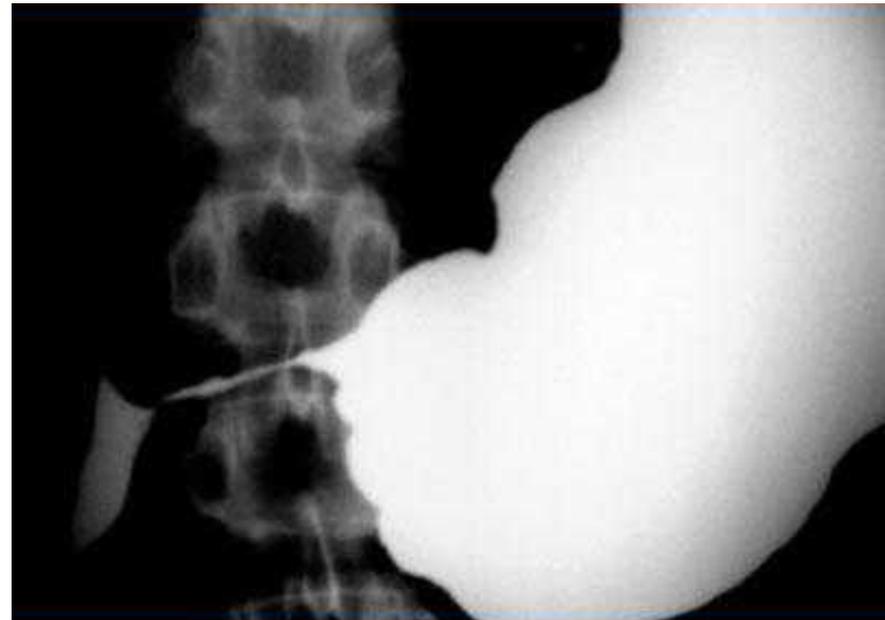
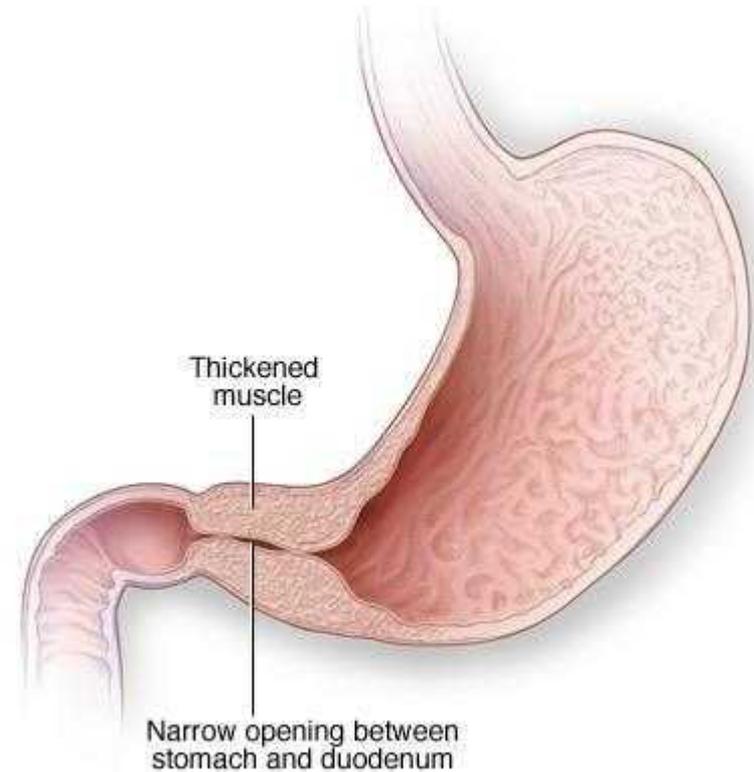
- US “not sure”

Q4: Mention 2 causes?

- 1) Gastric Carcinoma
- 2) Peptic ulcer disease (PUD)

Q5: Name it's effect on ventilation?

- Hypoventilation



Q: A 48-years old patient presented with acute abdomen. PMH shows atrial fibrillation. Laparotomy was done:

Q1: What is the Dx?

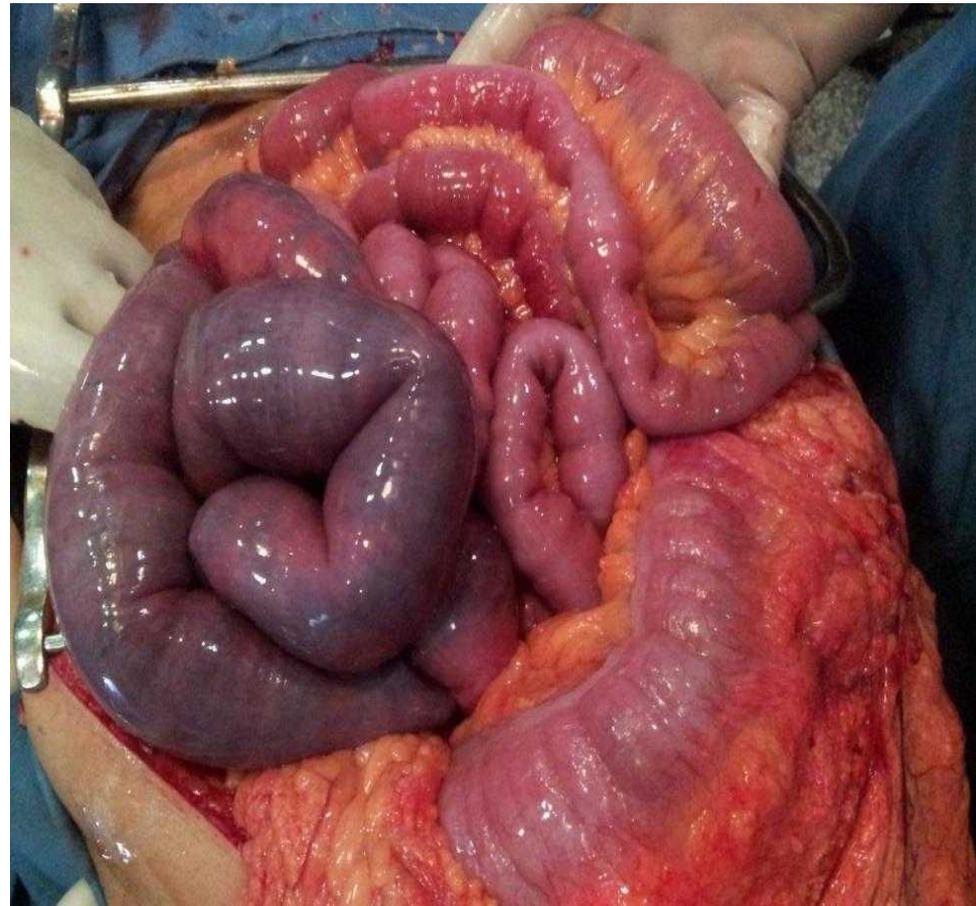
- Acute Mesenteric Ischemia

Q2: What is the most affected artery in this condition?

- Superior mesenteric artery

Q3: Appropriate Mx?

- Resection & Anastomosis



Q1: What is the Dx?

- Diverticulosis

Q2: Mention 2 complications?

- 1) Infection
- 2) Perforation
- 3) Obstruction

Q3: What is the most common site?

- Sigmoid



Q: Female patient came complaining from fistulas and other symptoms and a colonoscopy was done:

Q1: What is the Dx?

- Crohn's Disease

Q2: What are the usual Sx?

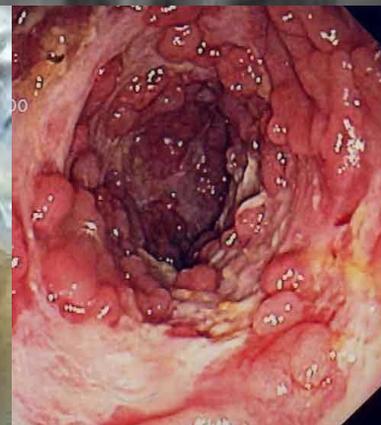
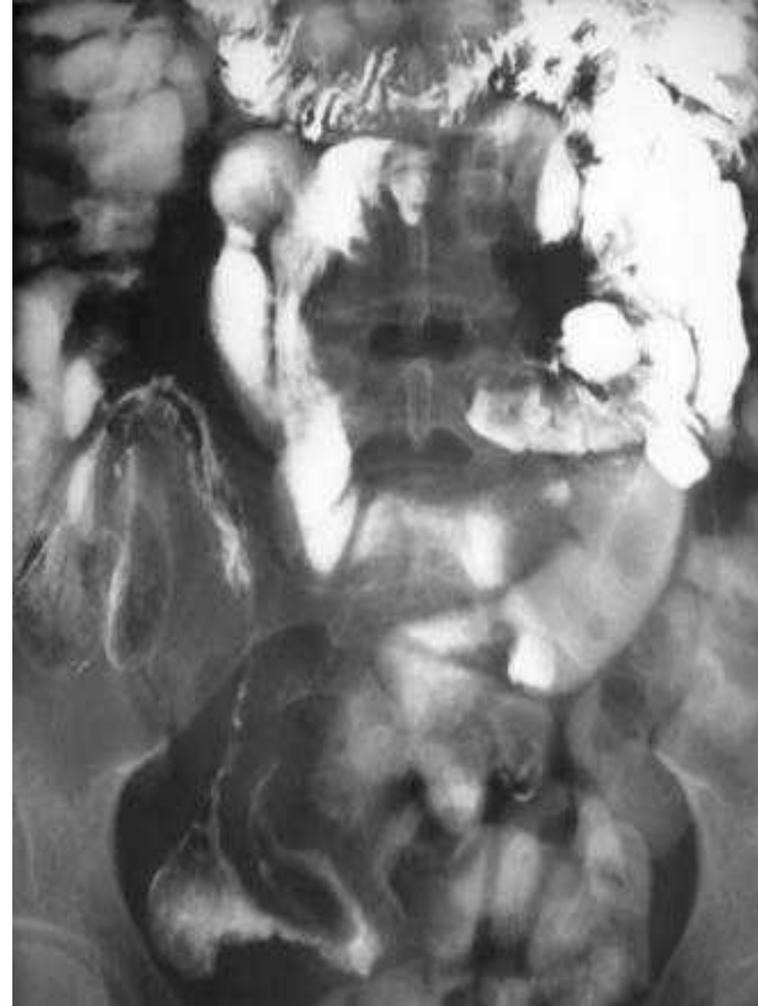
- Abdominal pain

- Fever with weight loss

- Diarrhea

Q3: How do we treat those patients?

- Azathioprine (6 mercaptopurine) +
steroids

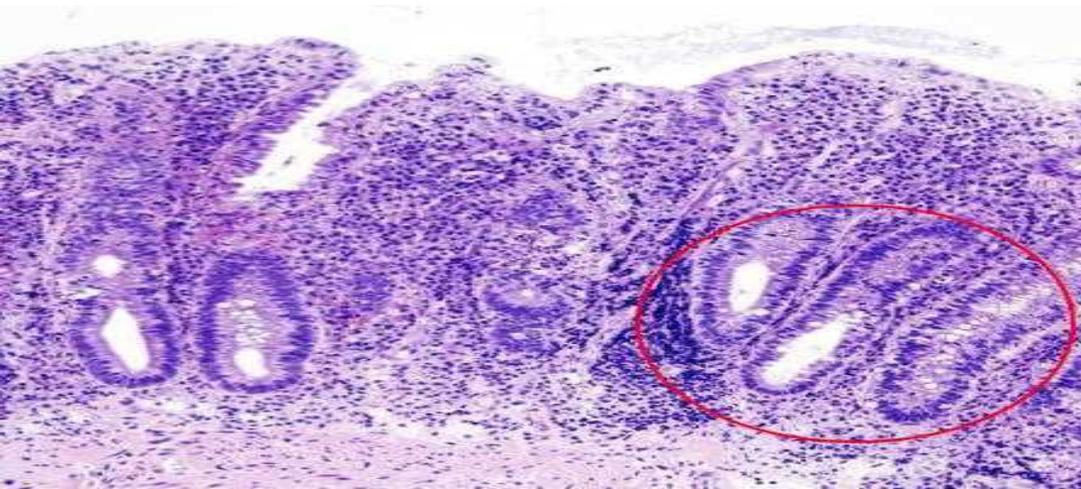
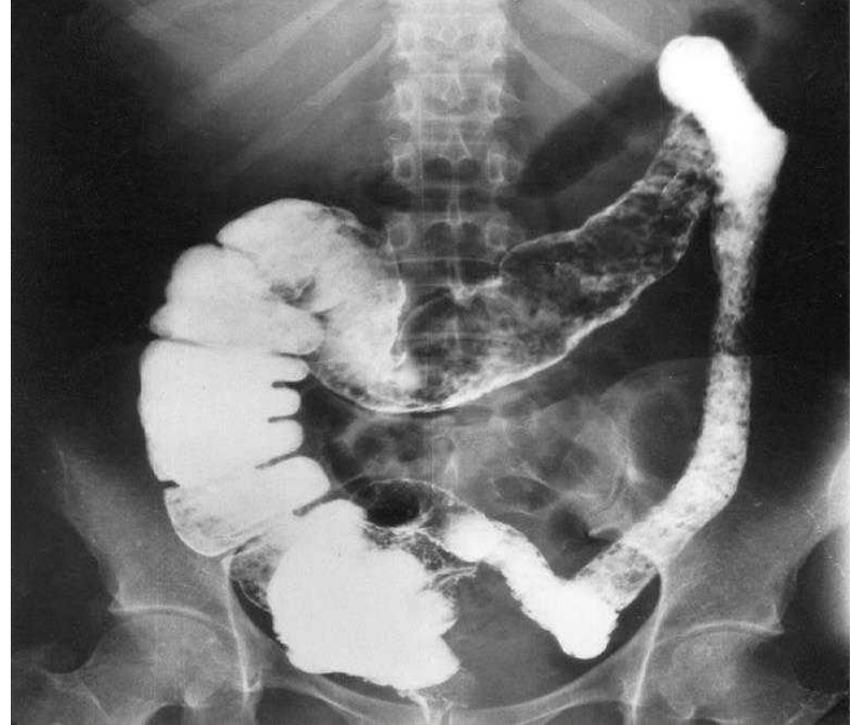


Q1: What is the Dx?

- Ulcerative colitis

Q2: Mention 2 drugs used in Mx?

- 1) Steroid
- 2) Azathioprine



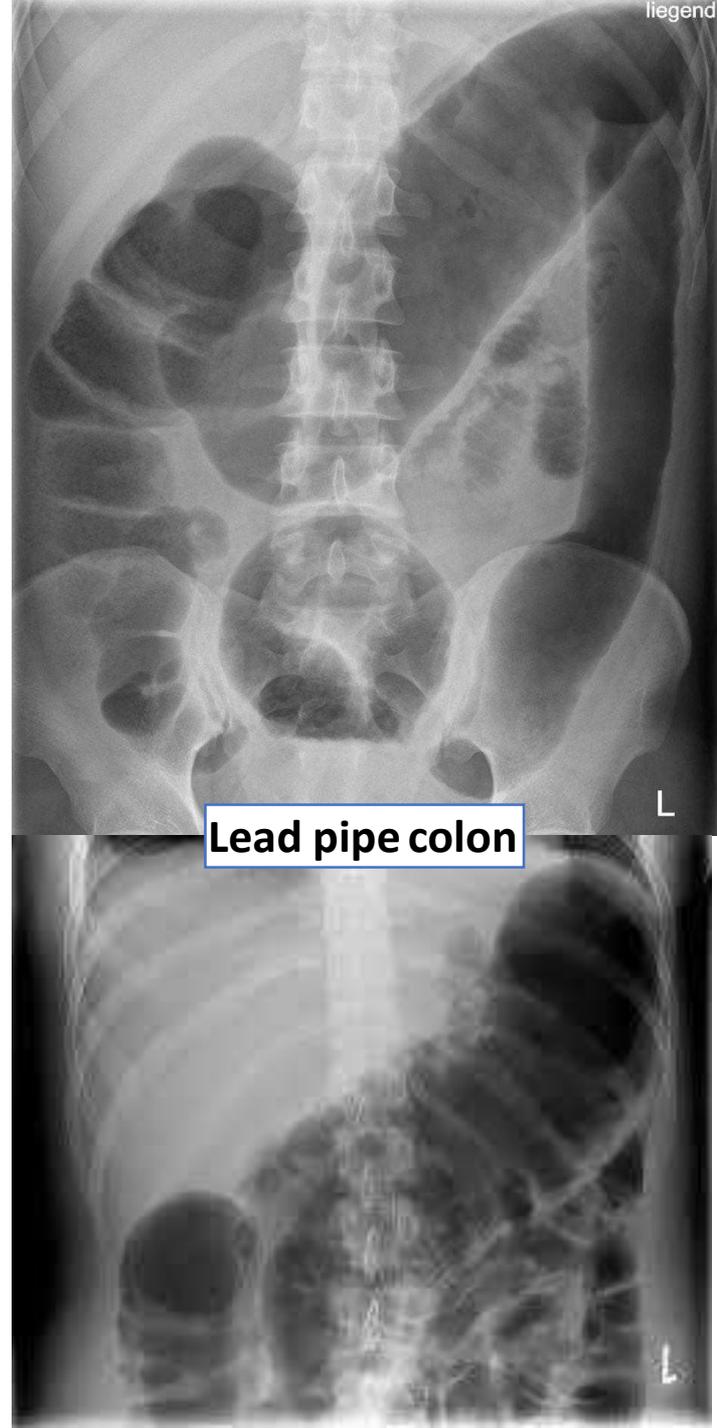
Q: Known case of UC, with Hx of bloody diarrhea and abdominal pain:

Q1: What is the abnormality?

- Transverse Toxic megacolon

Q2: One complication?

- Perforation
- Peritonitis



Q: Appendicitis Scenario:

Q1: What is the pathology?

- Acute Appendicitis

Q2: What is the name of it's scoring system?

- Alvarado scoring system

Q3: What is the sequence of the pain?

- Visceral somatic sequence of pain

Q4: Write 2 features found on US?

- 1) Blind-ending tubular dilated structure >6mm
- 2) Appendicolith with acoustic shadow
- 3) Distinct appendiceal wall layers
- 4) Periappendiceal fluid collection
- 5) Periappendiceal reactive nodal enlargement

Alvarado scoring system (Appendicitis)

Mnemonic (MANTRELS)	Value
Symptom	
Migration	1
Anorexia-acetone	1
Nausea-vomiting	1
Signs	
Tenderness in right lower quadrant	2
Rebound pain	1
Elevation of temperature $>37.3^{\circ}\text{C}$	1
Laboratory	
Leukocytosis	2
Shift to the left	1
Total score	10

**Q: patient with Hx of lower GI bleeding
& this is the colonoscopy:**

Q1: What is the Dx?

- Angiodysplasia

Q2: the Cause?

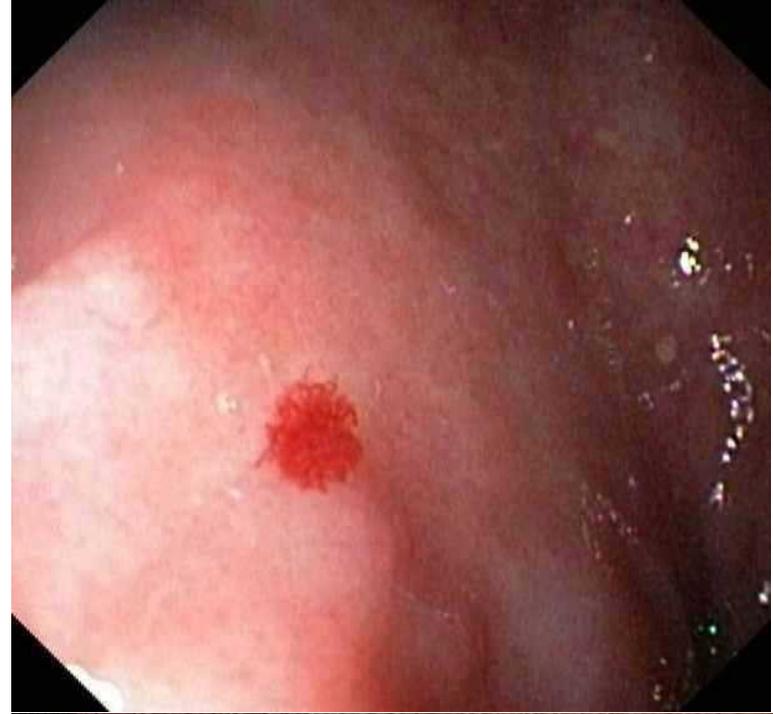
- Degeneration of submucosal venous
wall and formation of AVM

Q3: the Mx?

- 1) Laser
- 2) Electrocoagulation
- 3) Surgery

Q4: What is the most common site?

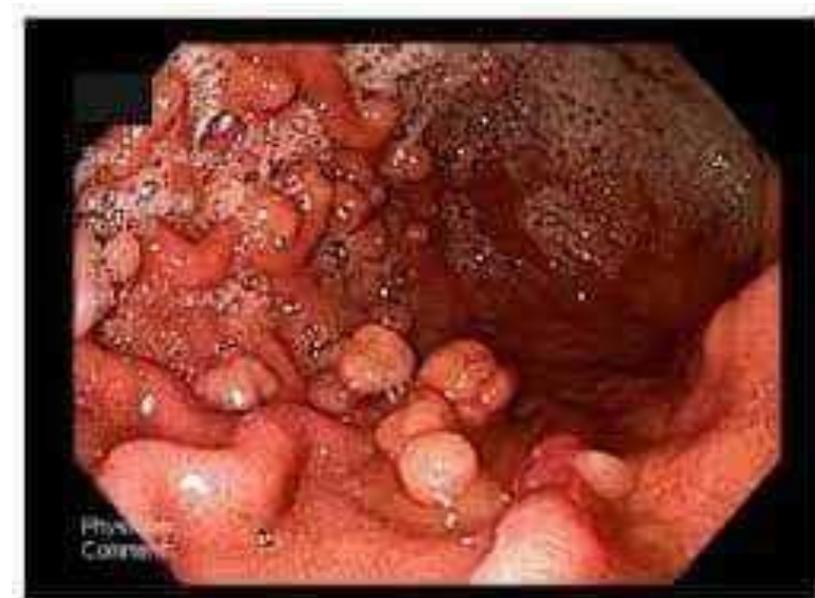
- the cecum or ascending colon



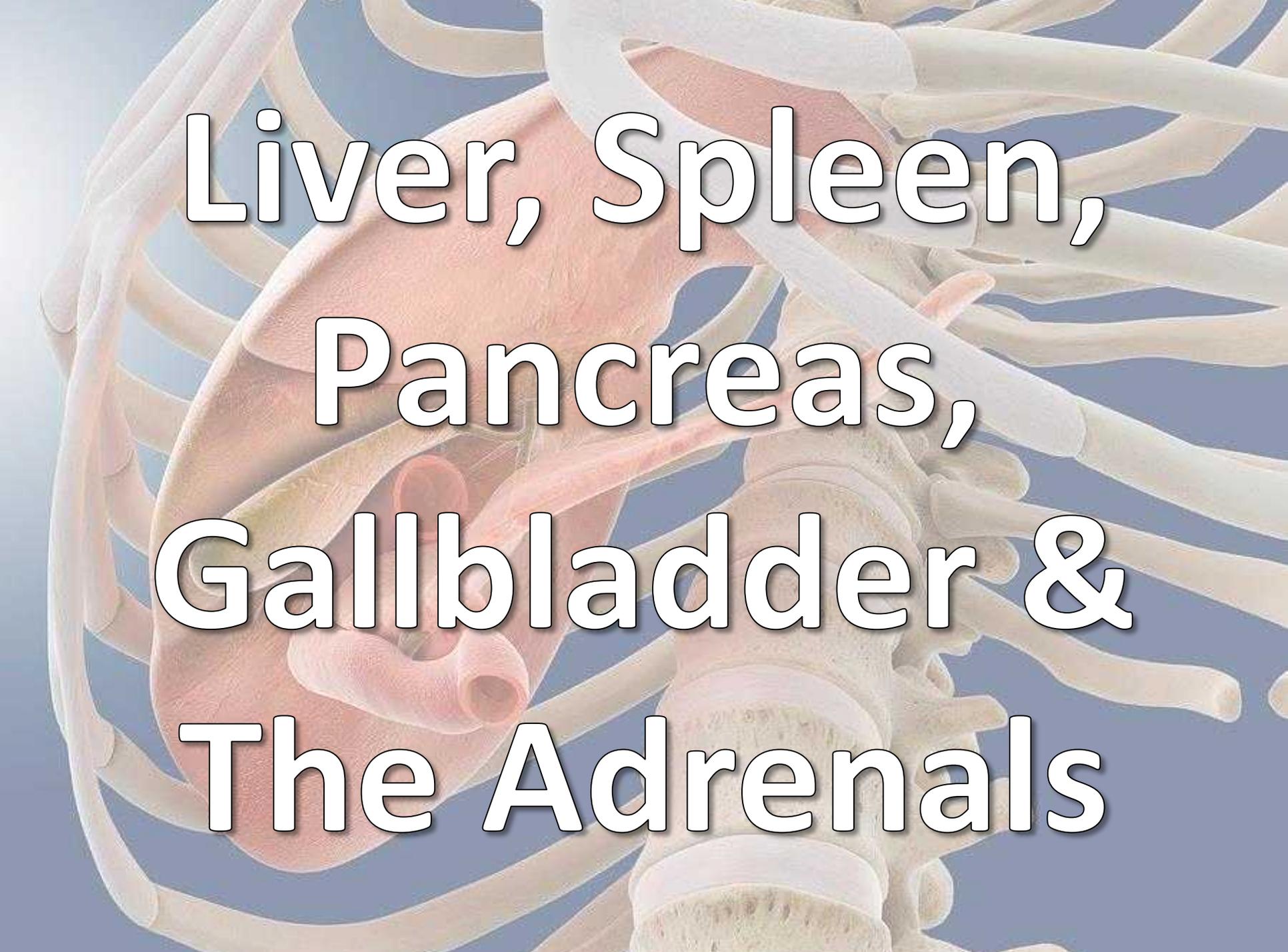
Q: What is the Dx?

- Peutz-Jeghers syndrome

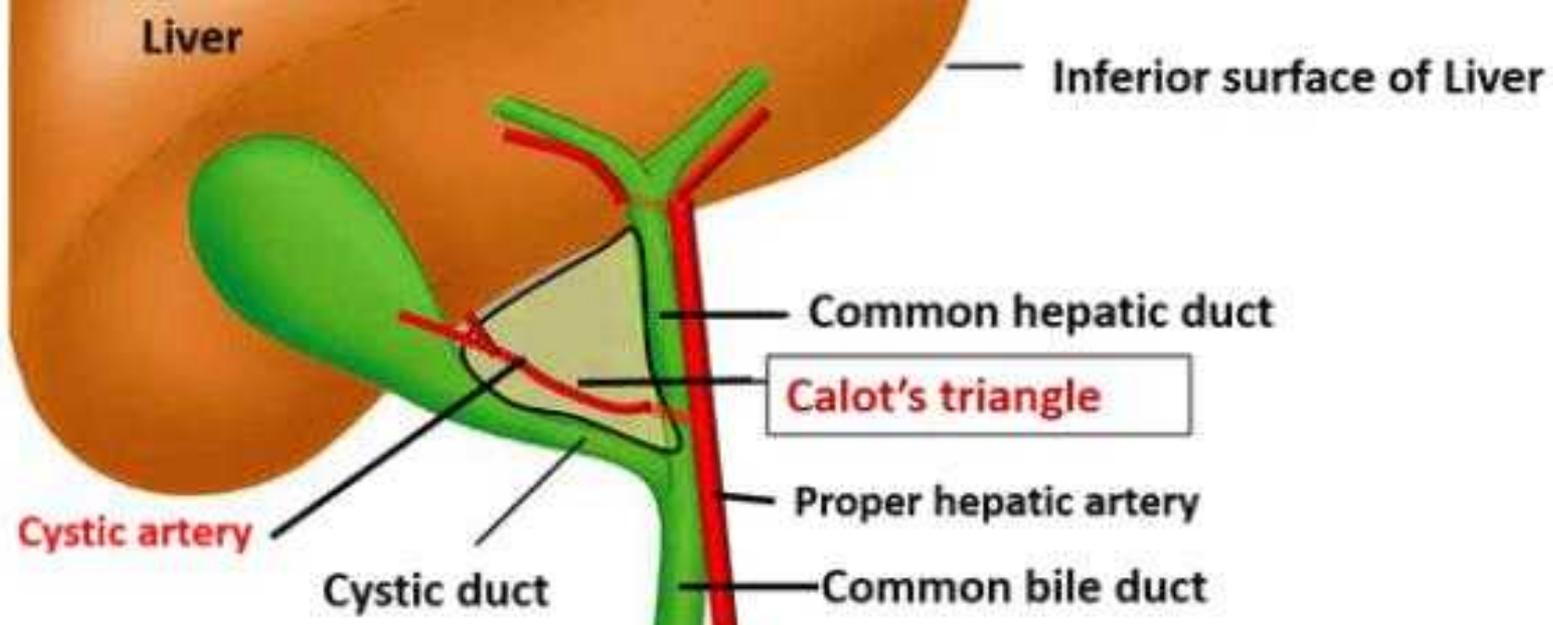
** Note: PJS is an autosomal dominant inherited disorder characterized by intestinal hamartomatous polyps in association with a distinct pattern of skin and mucosal macular melanin deposition



Name	Region & info	Indications
Barium Swallow	to visualize the area from the mouth to the stomach (esophagus)	<ul style="list-style-type: none"> a. Symptoms of gastro-esophageal reflux b. Dysphagia, related to: Esophageal (Web, stricture, tumor, achalasia), vascular abnormalities
Barium Meal	Double contrast (gas+barium) to visualize the stomach and the duodenum	<ul style="list-style-type: none"> a. Gastro-esophageal reflux b. Gastric or duodenal ulcer c. Hiatus hernia d. Gastric tumors
Barium follow-through	To visualize the small intestine, taken every 1/2 hr till we reach the large intestine (stool white)	<ul style="list-style-type: none"> a. IBS (crohns mostly) b. small bowel tumor/lymphoma (filling defect) c. Small bowel obstruction
Barium Enema	Double contrast (barium + air), to visualize the colon, and it's the only contrast given in the rectum (by Folly's)	<ul style="list-style-type: none"> a. Abdominal mass b. Large bowel obstruction / volvulus c. Diverticular disease d. Colonic tumor



**Liver, Spleen,
Pancreas,
Gallbladder &
The Adrenals**



Q1: What is this triangle?

- Calot's Triangle

Q2: Name 3 borders?

- 1) Inferior border of the liver
- 2) Cystic duct
- 3) Common hepatic duct

Q: Name the following complications of liver cirrhosis:

A > Ascites

B > Caput medusa (dilated veins)

C > Hematoma (easily bruised)



Q1: What is the sign? Caput Medusa

Q2: What is the Dx? Liver Cirrhosis



Q: This 60-years old patient developed abdominal pain, bloody diarrhea and fever. He came back from a tour trip to a south west Asian country 3 weeks ago. CT was done.

1. What is the most likely diagnosis? Liver Abscess (Ameobic)

2. What is the treatment of choice? Metronidazole



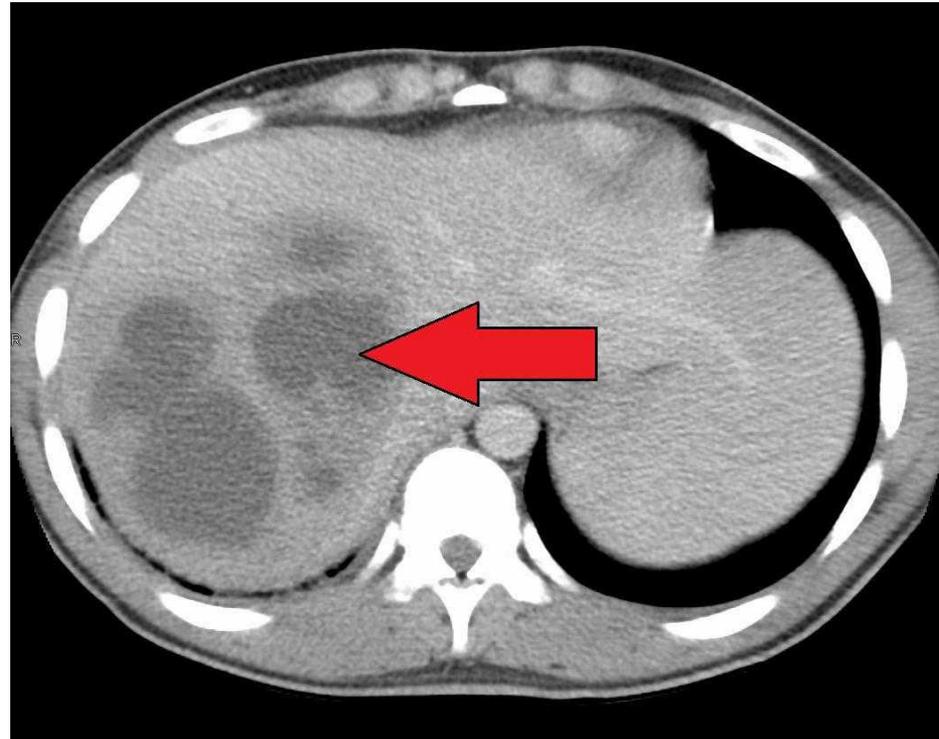
Q: Patient presented lethargic and febrile a week after a surgery for cholangitis:

Q1: What is your Dx?

- Liver abscess

Q2: Mx?

- Percutaneous drainage, &
- Antibiotic administration



Q: A 45 year old male presented with RUQ discomfort and pain, this is his abdominal CT.

Q1: What is the radiological finding?

Peri-cyst and daughter cysts (hydatid cyst disease).

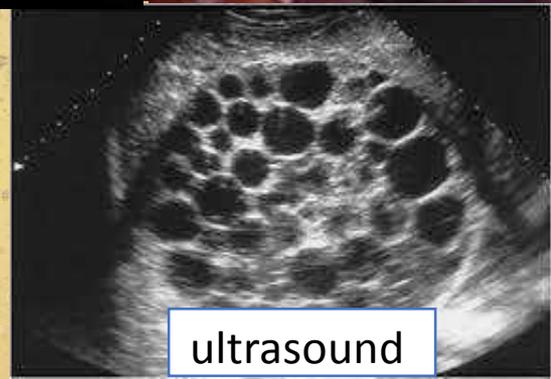
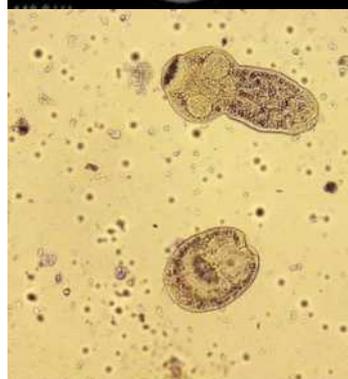
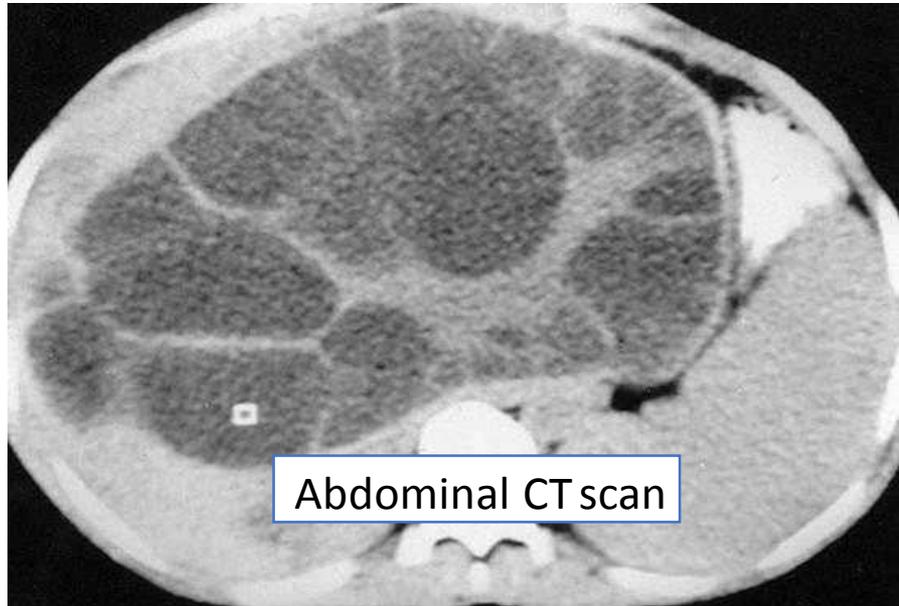
Q2: Mention 2 complications:

Rupture and anaphylaxis/
obstructive jaundice.

Q3: Give 2 drug that can be used?

Albendazole, Mebendazole

is a **parasitic infestation** by a tapeworm of the genus **Echinococcus**.



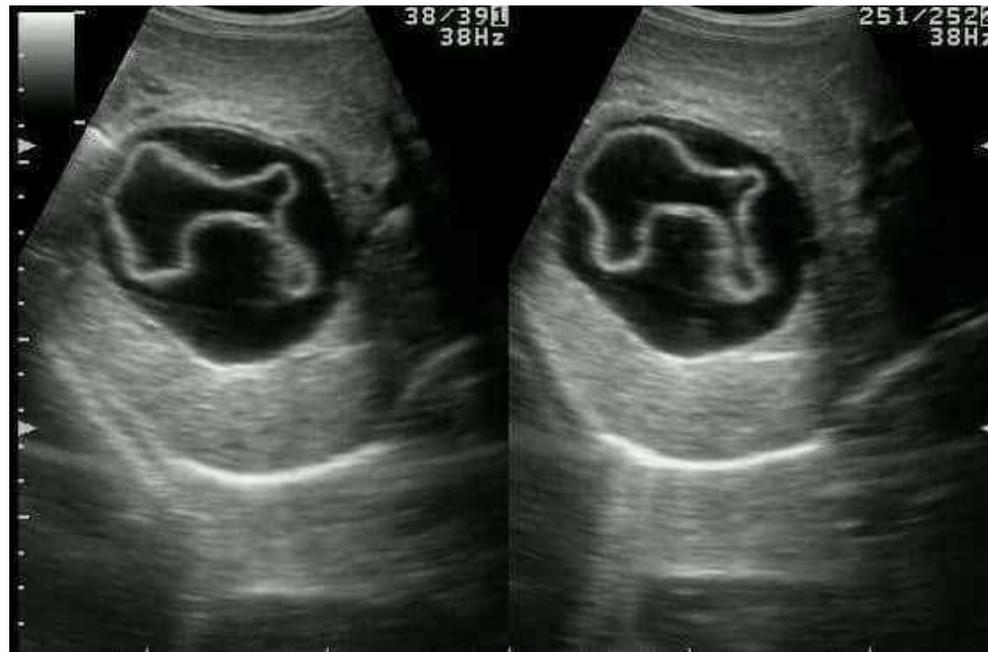
Q: Abdominal US image for a woman lives in rural area:

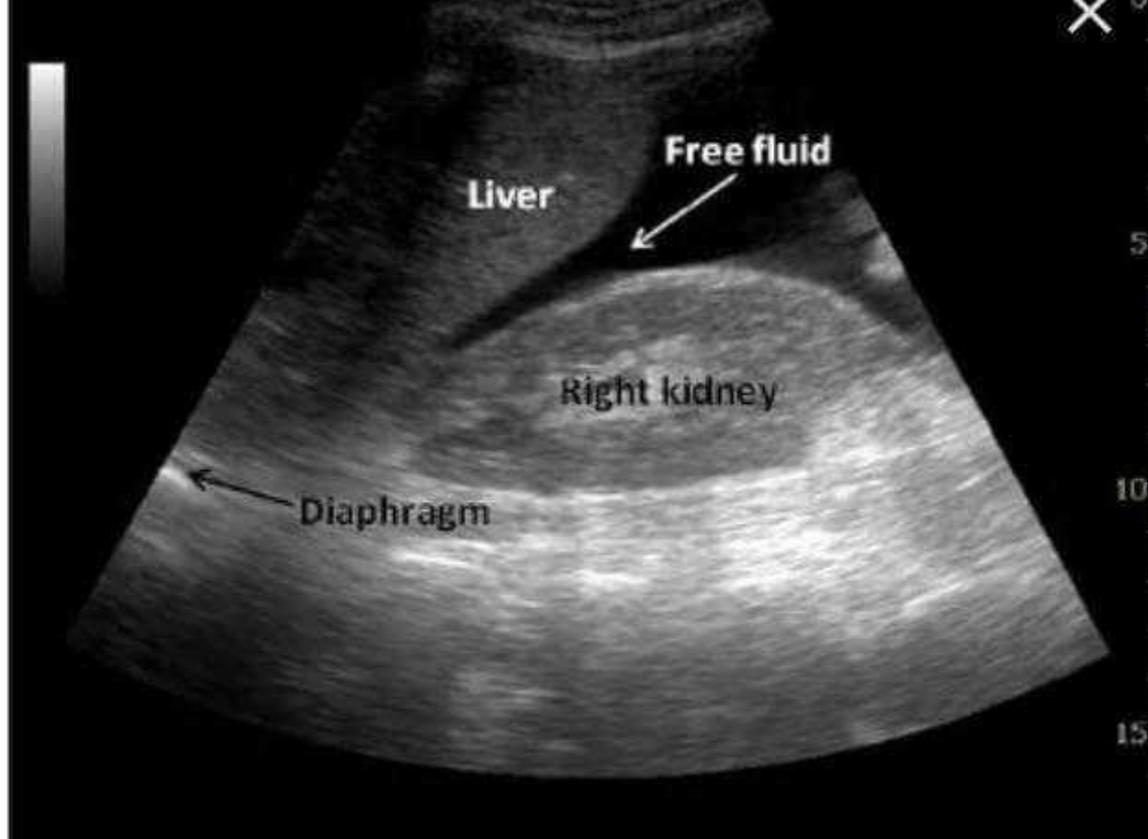
Q1: What is the name of this sign?

- Water lily sign

Q2: Most probable etiology for this sign?

- Caused by tapeworm *Echinococcus granulosus*
- Another cause is *E. multilocularis*





Q1: What is the finding?

- Fluid in Morrison's pouch

Q2: The Dx?

- Hemoperitoneum (blood)
- Ascitis (fluid)

Morison's pouch: The hepatorenal recess is the space that separates the liver from the right kidney.

Q: a patient with RUQ pain:

Q1: What is the Dx?

- Porcelain gallbladder

Q2: What is the major risk?

- Adenocarcinoma of
gallbladder

Q3: What is the Mx?

- Elective Cholecystectomy



Q: A 40 year old female patient after a bariatric surgery, presented with this US?

Q1: What is the Dx?

- Gallstone

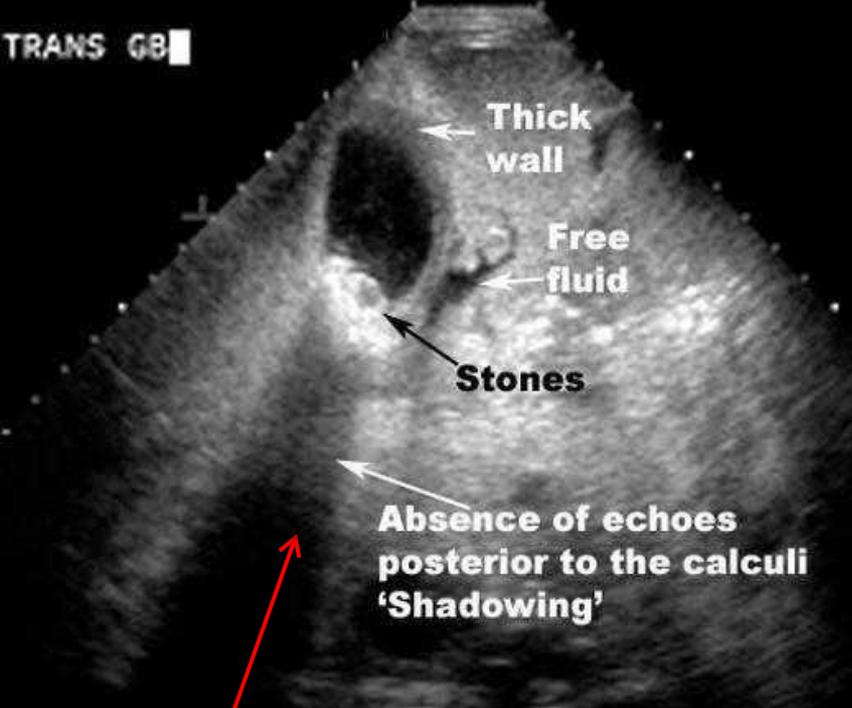
Q2: What are the indications of performing a surgery in asymptomatic patient for this condition?

- Porcelain gallbladder
- Congenital hemolytic anemia
- Gallstone >2.5 cm

Q3: If the organ got inflamed where would be the pain and where it would radiate?

- Pain would be in the RUQ, and radiate into the right subscapular area





acoustic shadow

Sonographic findings in acute cholecystitis

- Impacted stone in cystic duct or GB neck
- Positive sonographic Murphy's sign
- Thickening of GB wall (>3 mm)
- Distention of GB lumen (>4 cm)
- Pericholecystic fluid collections (frequent)
- Hyperemic GB wall on color Doppler (**supportive test**)

None of above signs pathognomonic

Combination of multiple signs make correct diagnosis

Q: After RTA, the patient present with left shoulder pain:

Q1: What is your Dx?

- Splenic Rupture

Q2: What is your Mx?

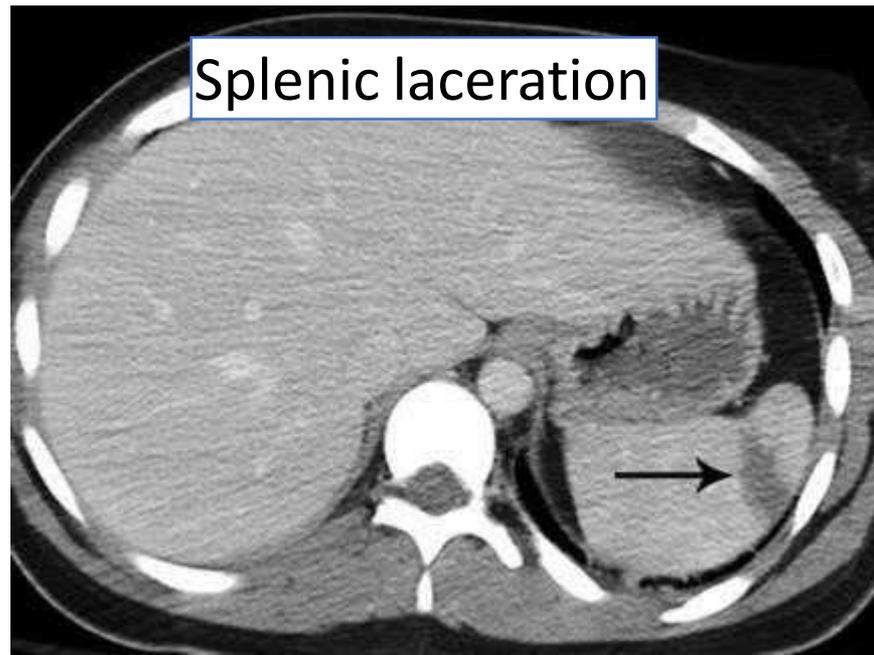
- Splenectomy



Grade ^a	Type	Description of Injury
1	Hematoma	Subcapsular, < 10% surface area
	Laceration	Capsular tear, < 1 cm parenchymal depth
2	Hematoma	Subcapsular, 10–50% surface area Intraparenchymal, < 5 cm in diameter
	Laceration	1–3 cm parenchymal depth; does not involve a trabecular vessel
3	Hematoma	Subcapsular, > 50% surface area or expanding; ruptured subcapsular or parenchymal hematoma
	Laceration	> 3 cm parenchymal depth or involved trabecular vessels
4	Laceration	Laceration involving segmental or hilar vessels and producing major devascularization (> 25% of spleen)
5	Laceration	Completely shattered spleen
	Vascular	Hilar vascular injury that devascularizes spleen

Note—Adapted with permission from [2].

^aAdvance one grade for multiple injuries up to grade 3. The American Association for the Surgery of Trauma uses roman numerals.



Q: RTA patient, HR = 130, he was hypotensive, a CT was done and shows the following?

Q1: How much blood did he lose?

- Stage 3 hypovolemic shock – 30-40% - 1500-2000 ml

Q2: What does the CT show?

- Splenic Rupture



Table 7-4 Signs and Symptoms of Advancing Stages of Hemorrhagic Shock

	Class I	Class II	Class III	Class IV
Blood loss (mL)	Up to 750	750–1500	1500–2000	>2000
Blood loss (%BV)	Up to 15%	15–30%	30–40%	>40%
Pulse rate	<100	>100	>120	>140
Blood pressure	Normal	Normal	Decreased	Decreased
Pulse pressure (mmHg)	Normal or increased	Decreased	Decreased	Decreased
Respiratory rate	14–20	20–30	30–40	>35
Urine output (mL/h)	>30	20–30	5–15	Negligible
CNS/mental status	Slightly anxious	Mildly anxious	Anxious and confused	Confused and lethargic

BV = blood volume; CNS = central nervous system.

Q: A 45-years old male patient, alcoholic, presented with a 24-hour history of upper abdominal pain and repeated vomiting. On examination of the abdomen, he was found to have these signs.

Q1: Name those signs?

A > Cullen's

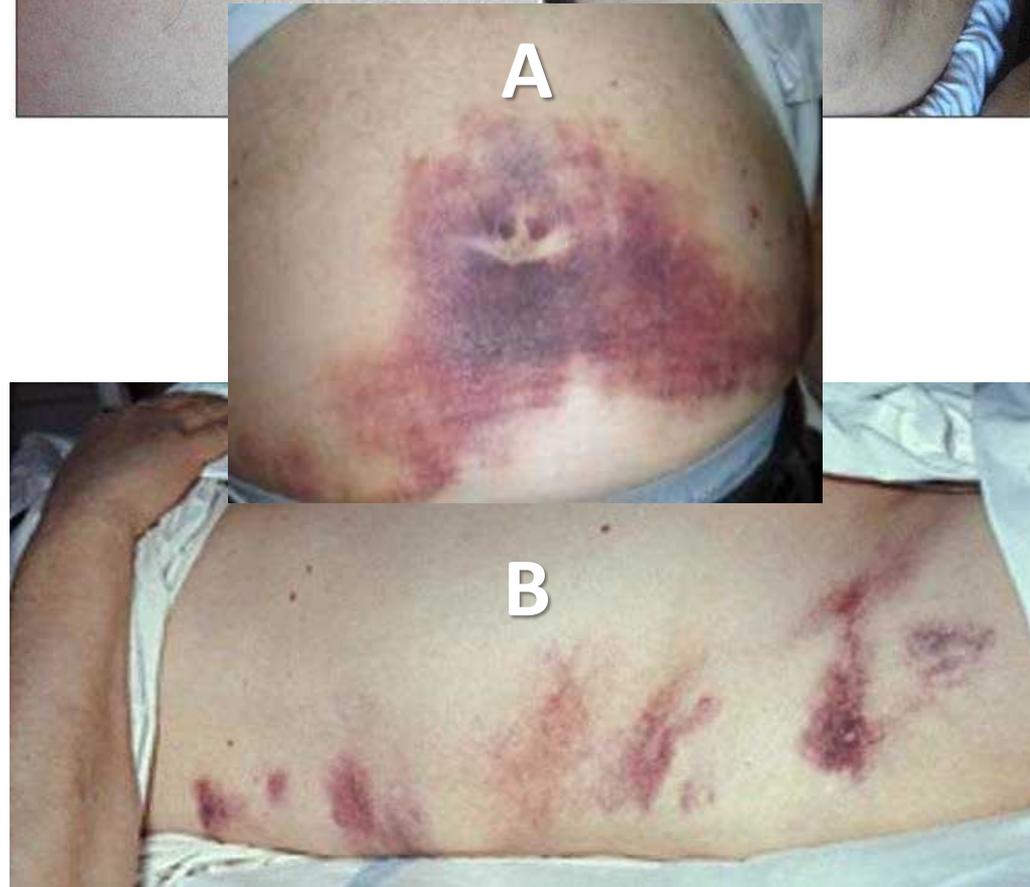
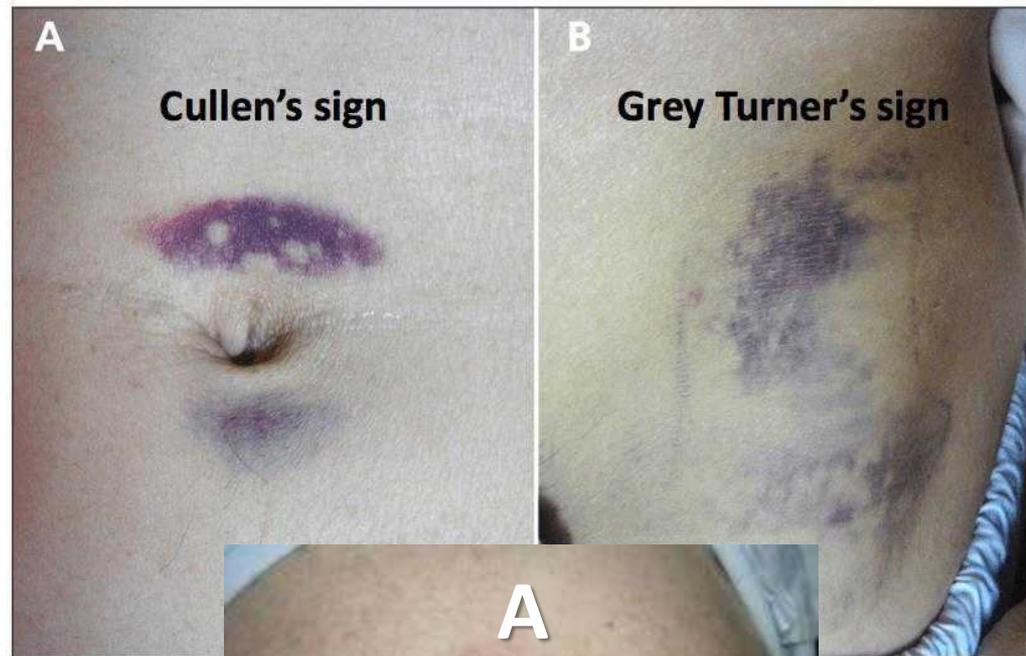
B > Grey Turner's

Q2: Mention 2 causes?

- Any retroperitoneal hemorrhage

1) Acute hemorrhagic pancreatitis

2) Abdominal trauma bleeding from aortic rupture



Q1: What is the type of imaging?

- MRCP

Q2: Mention 2 abnormalities?

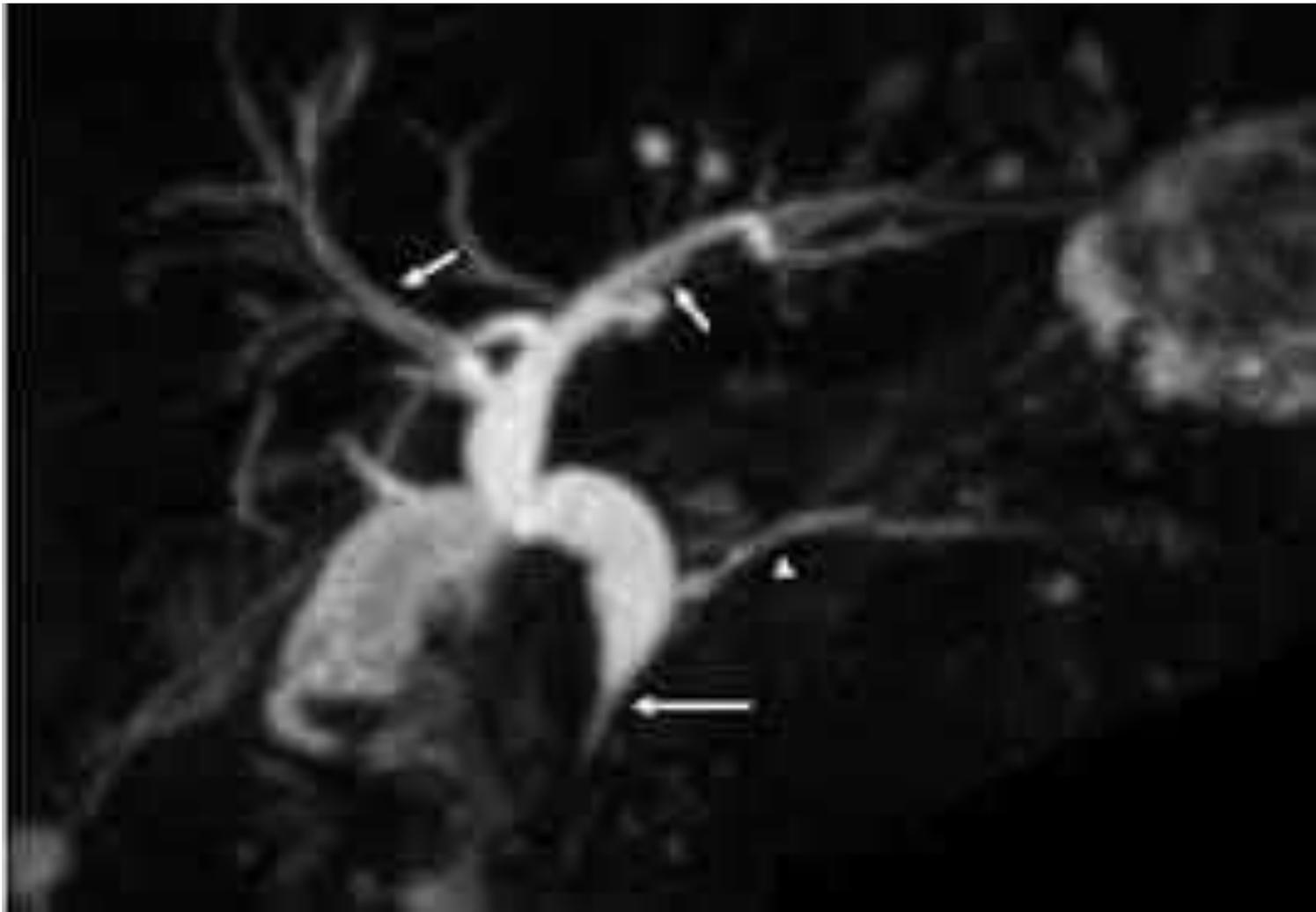
- 1) Stone in the CBD
(arrow – filling defect)
- 2) Dilated CBD



Q1: What is the study? MRCP

Q2: The structure pointed? Pancreatic duct (Stricture)

Q3: What is the next step? ERCP



Q: 60 year old female with RUQ pain and fever.

Q1: Identify this type of image:
MRCP

Q2: Give two radiological findings:
CBD stone shadow/ CBD dilation.

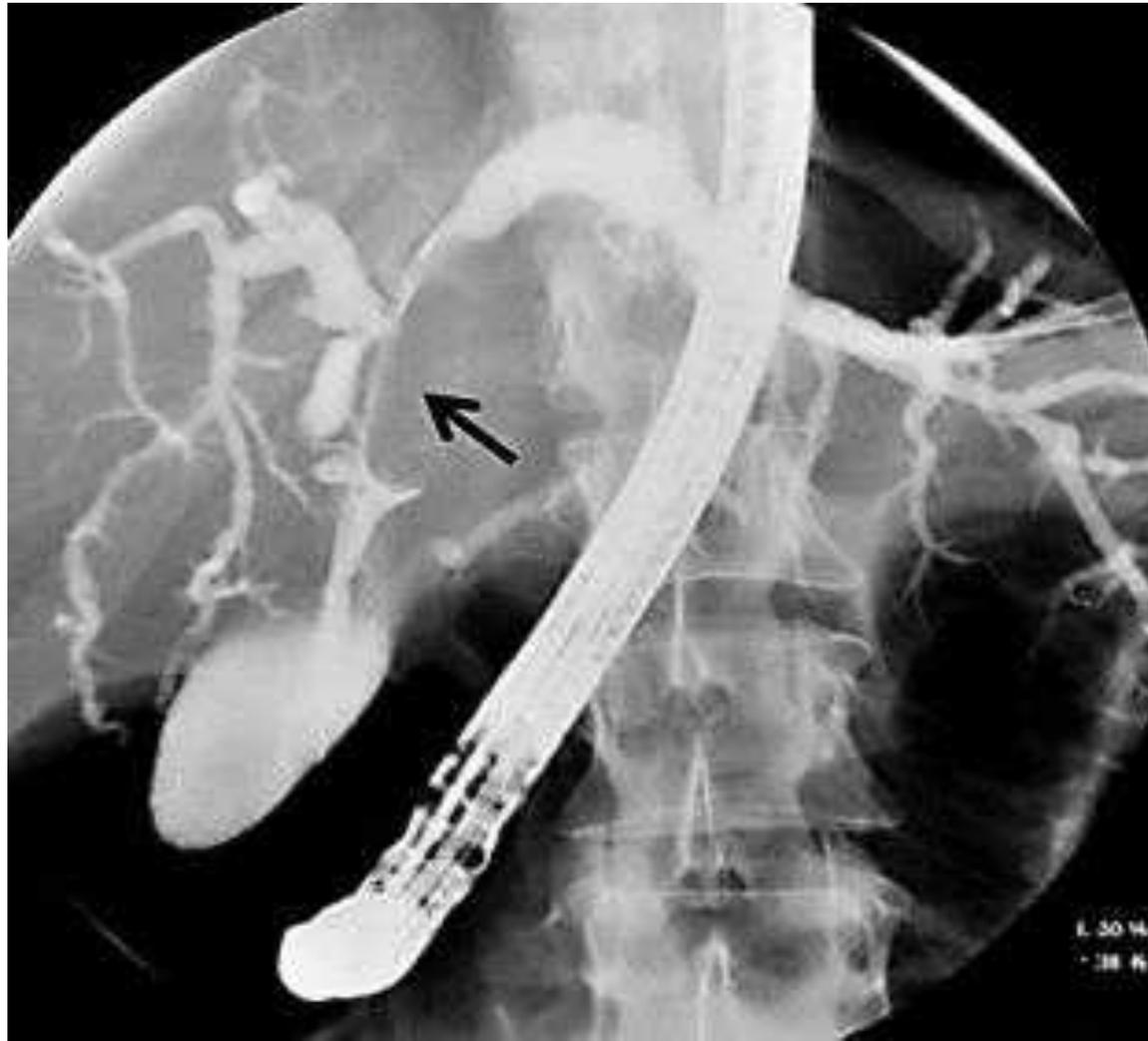
Q3: What is your diagnosis?
Ascending cholangitis.



Q1: What is the name of this investigation? ERCP

Q2: Mention two abnormalities seen in this picture:

Filling defect & distended common bile duct



Q1: What is the type of imaging?

- ERCP

Q2: Indications?

- Obstructive jaundice

Q3: Complications of ERCP?

- Pancreatitis

Q4: Mention 2 findings?

- 1) Dilated CBD
- 2) Multiple stones



Q1: What is the Dx?

- Primary sclerosing cholangitis (Beading)

Q2: Which disease is associated with it?

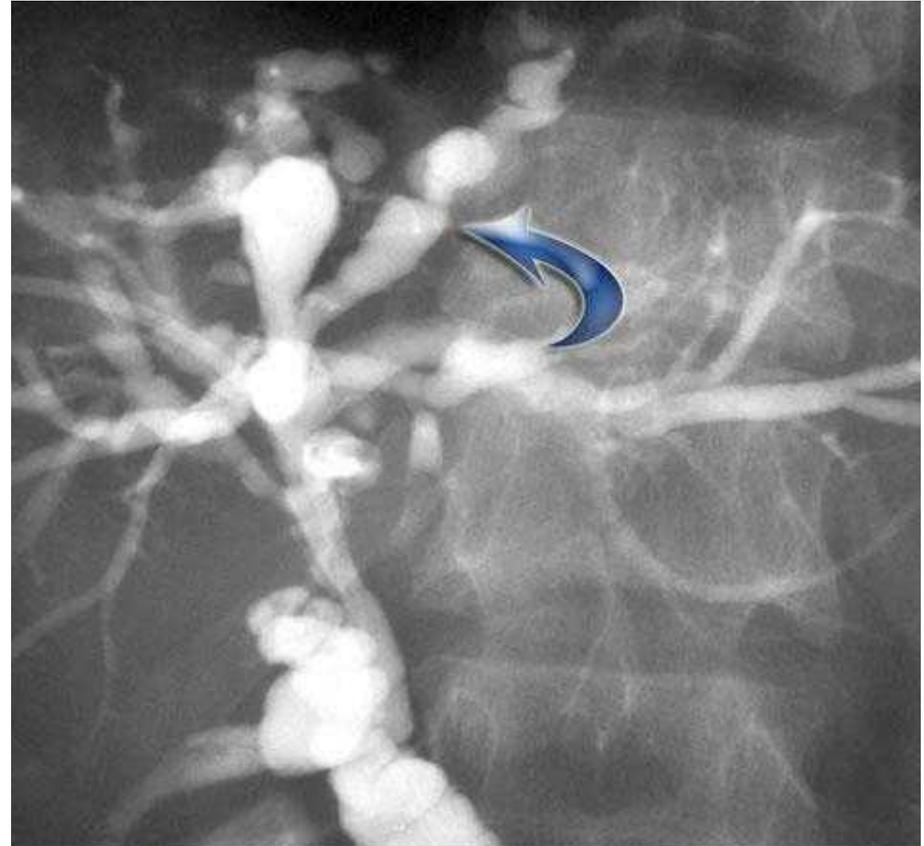
- Ulcerative colitis

Q3: Which type of malignancy the patient may develop?

- Cholangiocarcinoma

Q4: Diagnostic test?

- ERCP



Q: a patient with thyroid medullary cancer, & a CT was done:

Q1: What is your next step? (not sure what the dr. meant so here is the possibilities):

- Assess the functionality of the adrenal tumor by hx, physical ex and ordering lab tests: KFT (Na, K, Creatinine, Urea) / Aldosterone levels/ cortisol/ metanephrine / noremetanephrine / vanillyl mandelic acid (VMA)
- pheochromocytoma
- 24h urine analysis for catecholamine metabolites (VMA/Meta)

Q2: If the patient has no genetic abnormality and the lesion is not functioning what will you do next?

- Because it is very large > surgery adrenalectomy, the dr said : If it was more than 4 cm then you have to remove it immediately



Q: a patient presented with episodic sweating and hypertension:

Q1: What is the Dx?

- Pheochromocytoma

Q2: What is the 1st thing to do?

- Check if functional or not by checking cortisol, renin, angiotensin and VMA,... etc

Q3: What raise the possibility of malignancy?

- >4 cm
- necrosis
- hemorrhage

Q2: What is the size that would be considered an indication for surgery?

- >4 cm



Q: Lab investigations show high aldosterone level and high ratio of PAC to PRA:

Q1: What is your Dx?
- Conn's tumor

Q2: Mention a common presentation for this patient?
- Hypertension



Functional adrenal tumors can cause several problems depending on the hormone released. These problems include:

1. Cushing's Syndrome:

This condition occurs when the tumor leads to excessive secretion of cortisol. While most cases of Cushing's Syndrome are caused by tumors in the pituitary gland in the brain, some happen because of adrenal tumors. **Symptoms of this disorder include diabetes, high blood pressure, obesity and sexual dysfunction.**

2. Conn's Disease:

This condition occurs when the tumor leads to excessive secretion of aldosterone. **Symptoms include personality changes, excessive urination, high blood pressure, constipation and weakness.**

3. Pheochromocytoma:

This condition occurs when the tumor leads to excessive secretion of adrenaline and noradrenaline. **Symptoms include sweating, high blood pressure, headache, anxiety, weakness and weight loss.**

Q: A 40-years-old female, previously healthy, presented with acute abdominal pain, fever and itching

1. What is the diagnosis?

Ascending Cholangitis

2. What is the next imaging test to order for this patient?

MRCP, ERCP

3. Why is she having itching?

Bile salts accumulation



**Q: Female present
with fever and itching
and jaundice:**

Q1: What is the Dx:
Ascending cholangitis

**Q2: Why she is having
Itching?**

Bile salts
accumulation





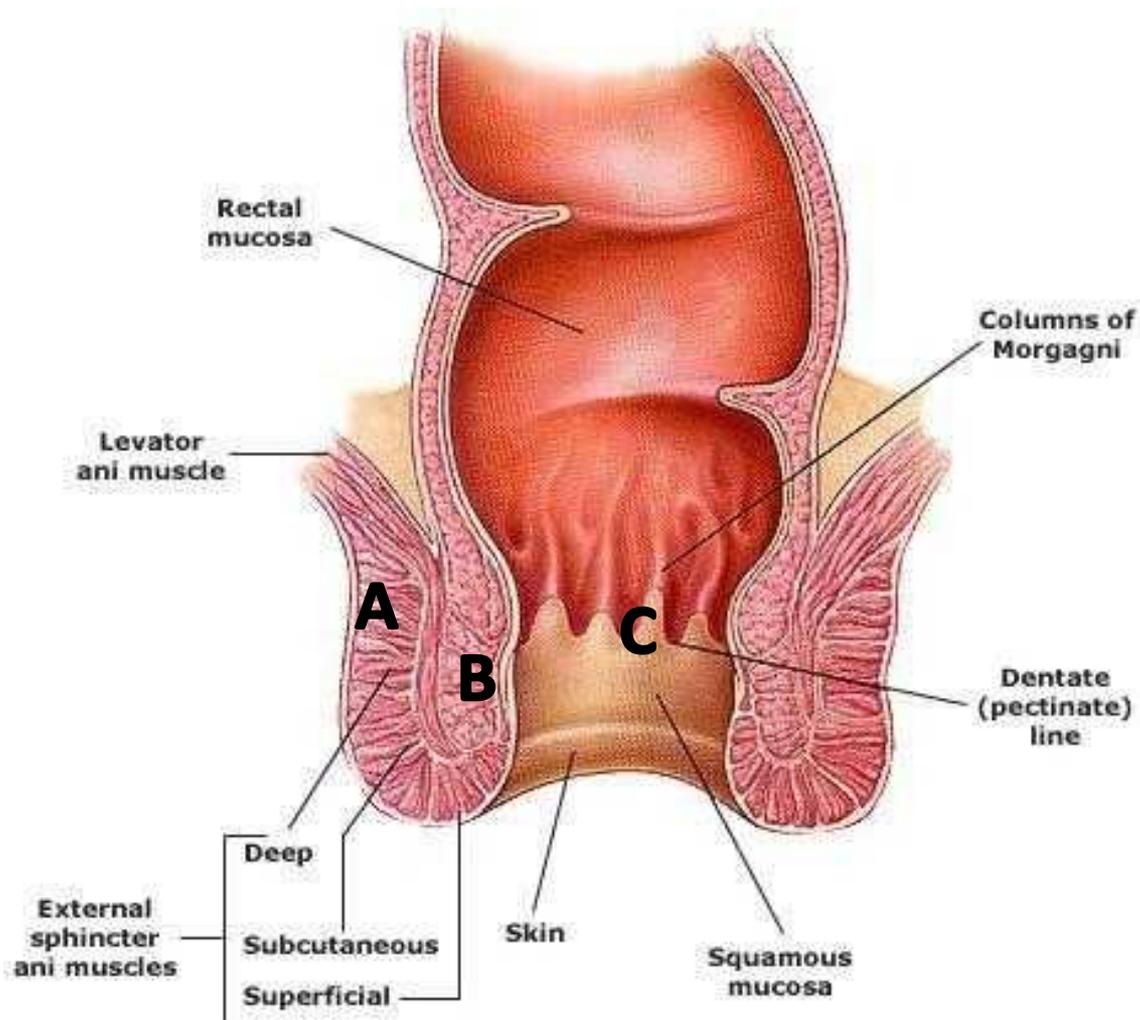
Anorectal

Q: About the anatomy of anal canal:

A: External anal sphincter

B: Internal anal sphincter

C: Dentate line



Q: Patient has anal pain and itching:

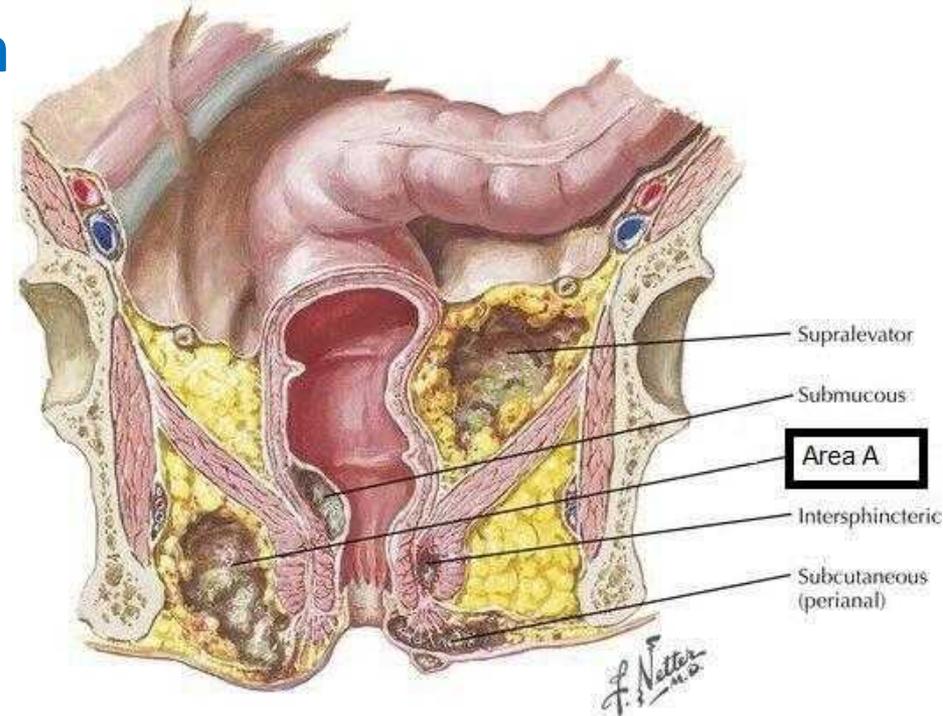
Q1: What type of anal condition in this area (Area A)?

- Ischiorectal abscess

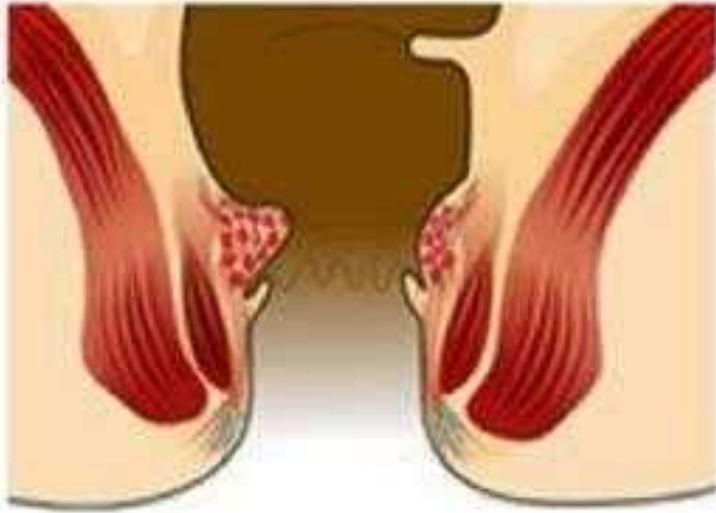
Q2: What is the Mx?

- Cruciate incision with drainage with drainage of pus (without antibiotic)

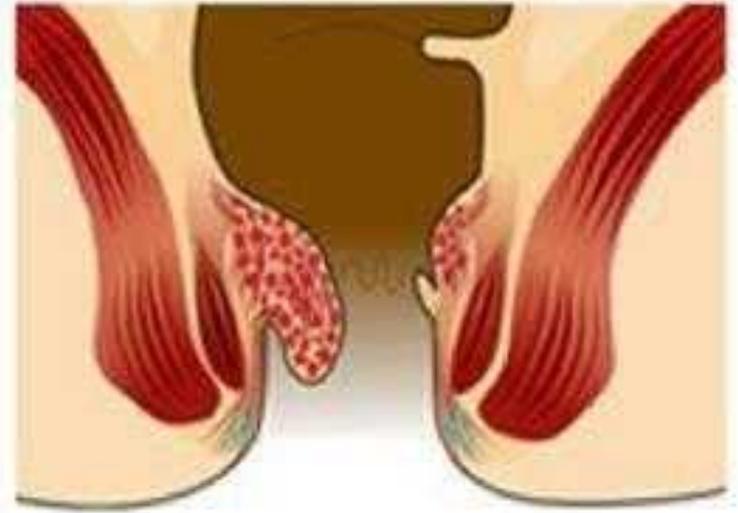
- Extra: we use antibiotic in: systemic inflammatory response or sepsis extensive cellulitis, diabetes, immunosuppression



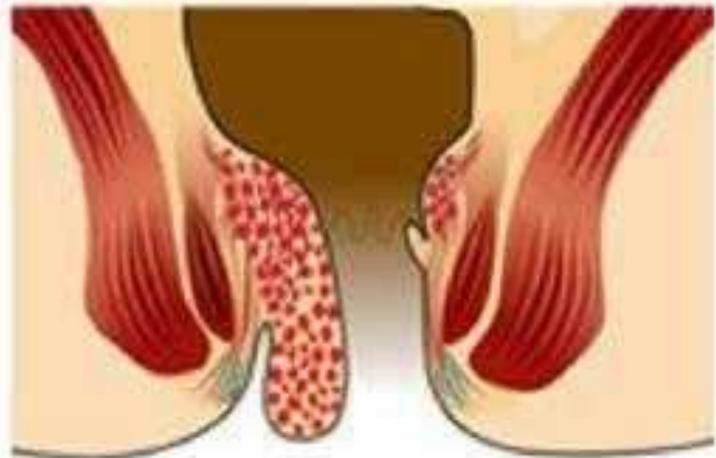
1st Degree: No Prolapse
Just prominent vessels



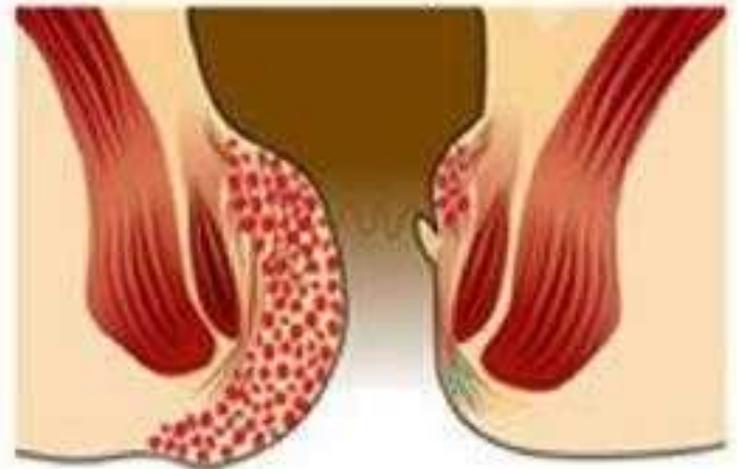
2nd Degree: Prolapse (come out) with strain
but spontaneously reduce (go back in)

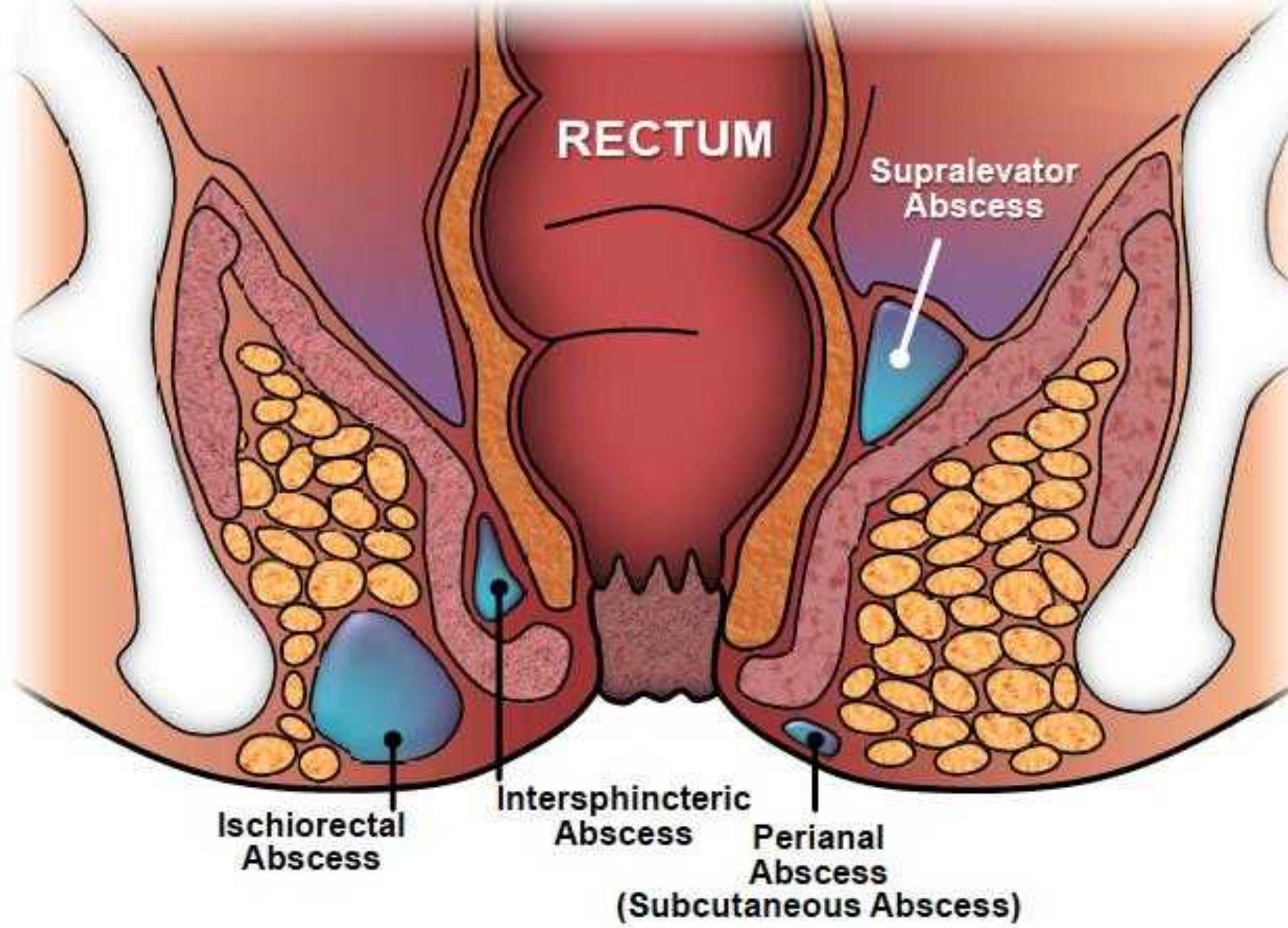


3rd Degree: Prolapse with strain
and have to be pushed back in



4th Degree: Prolapsed out and
cannot be reduced or pushed back in





RECTUM

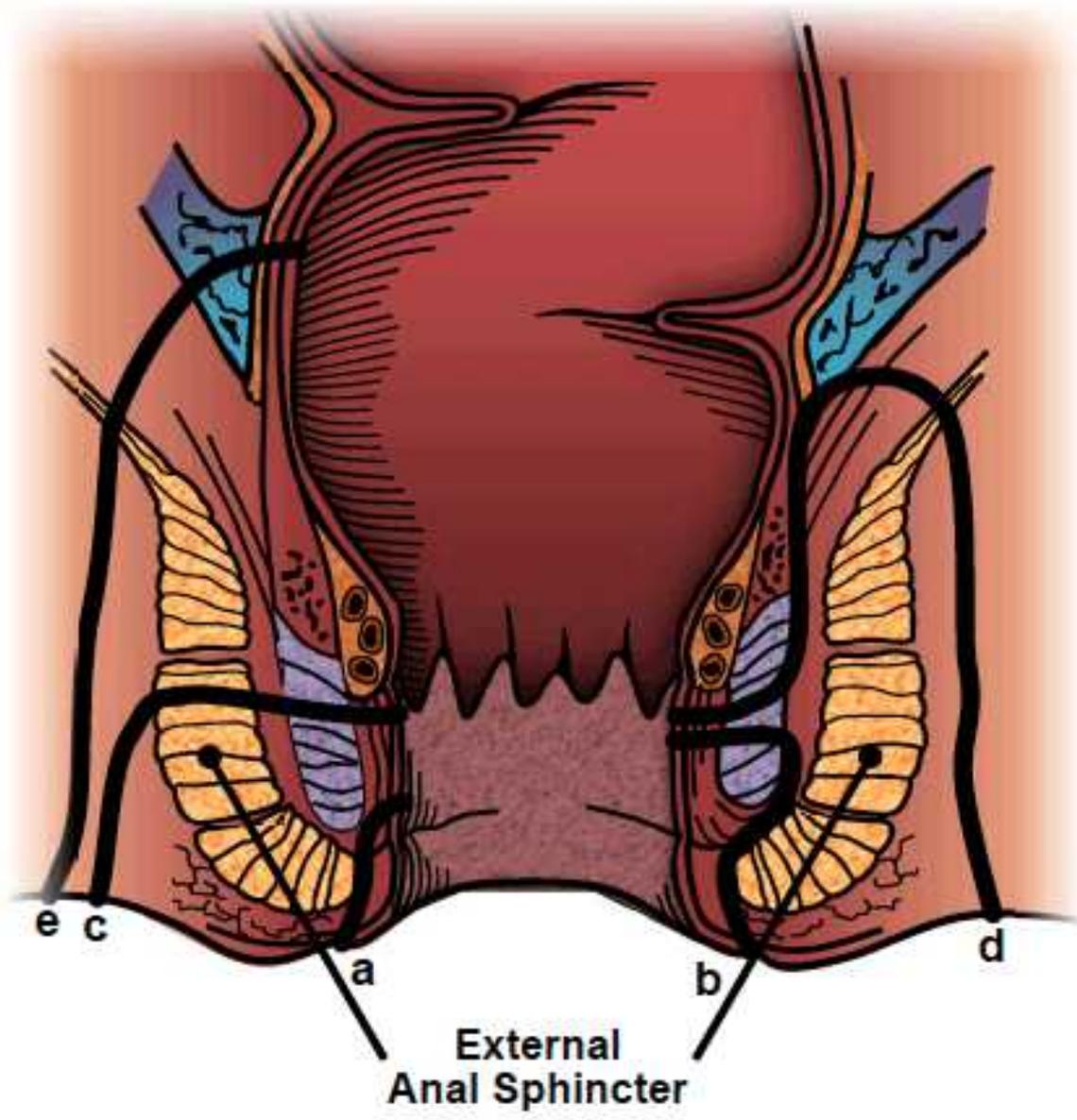
**Supralevator
Abscess**

**Ischiorectal
Abscess**

**Intersphincteric
Abscess**

**Perianal
Abscess
(Subcutaneous Abscess)**

- a: superficial fistula
- b: intersphincteric fistula
- c: transsphincteric fistula
- d: suprasphincteric fistula
- e: extrasphincteric fistula

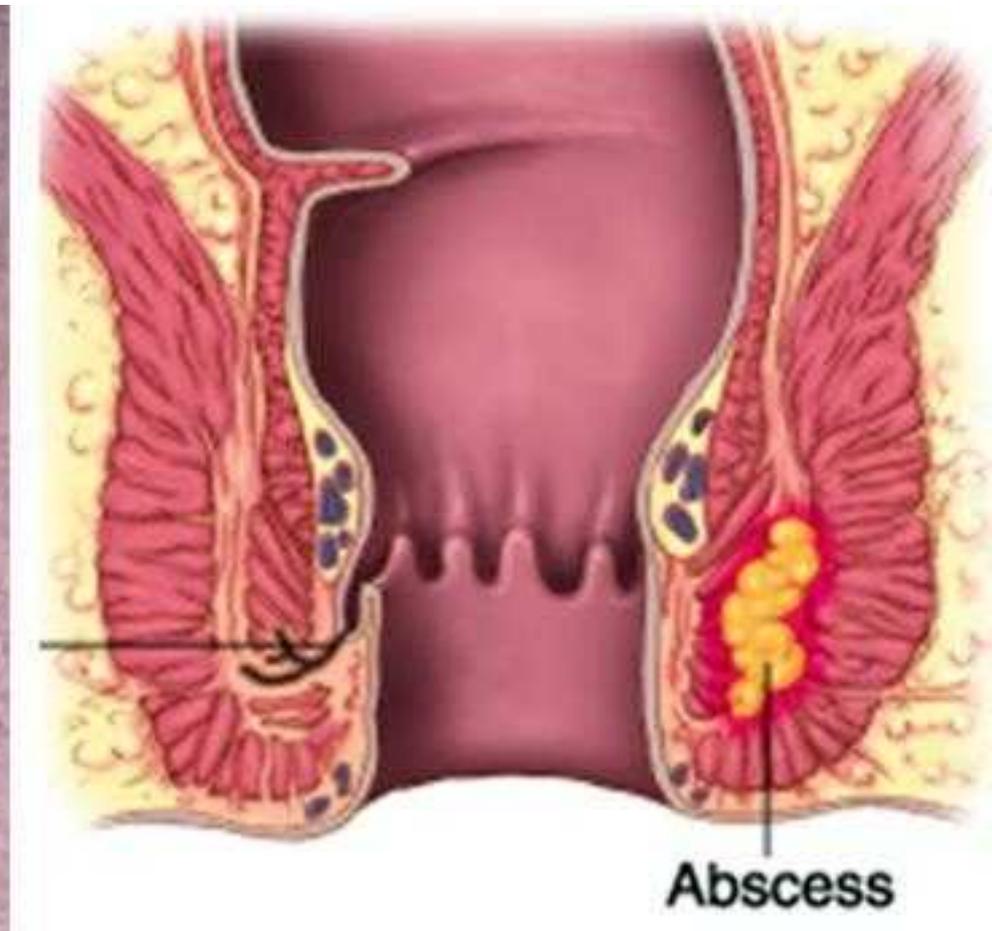


Q: This is a 35-years-old patient c/o severe anal area pain

1. What is the diagnosis? Perianal Abscess

2. What is the treatment? Drainage & Antibiotics Cover

3. What is the possible sequel for this condition? Fistula



Q: A 25 year old male presented with anal pain and fresh blood PR, the peri-anal area is shown:

Q1: What is the Dx? Bleeding Hemorrhoids

Q2: What do you recommend?

1) Bath sitz 2) Laxatives 3) High-fiber diet

Q3: Beside bleeding, name 2 more complications?

1) thrombosis 2) Infection 3) Ulcers

Classification: Internal (above dentate line)
external (below dentate line).

Risk factors: constipation/ straining/
pregnancy/ ascites/ portal HTN.

Hemorrhoidectomy:

* contraindicated in chron's.
* complications: pelvic infection/ anal
stricture/ incontinence.



Q1: Name the Dx?

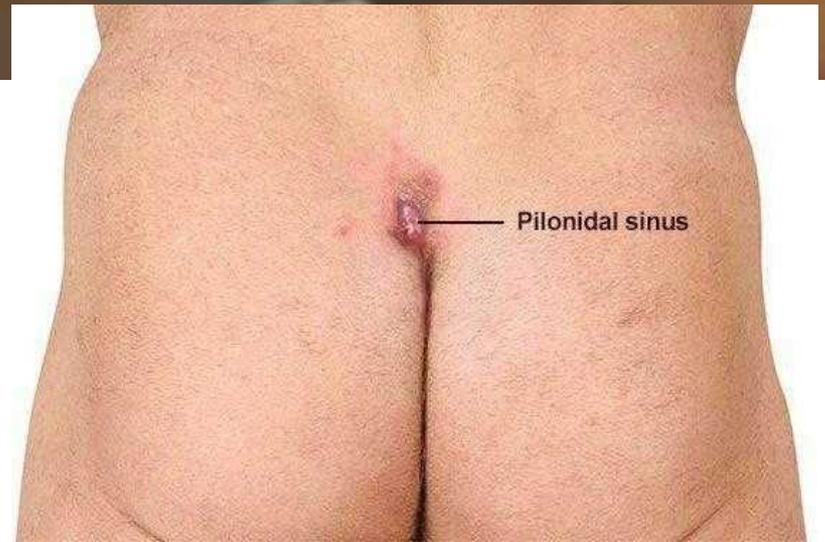
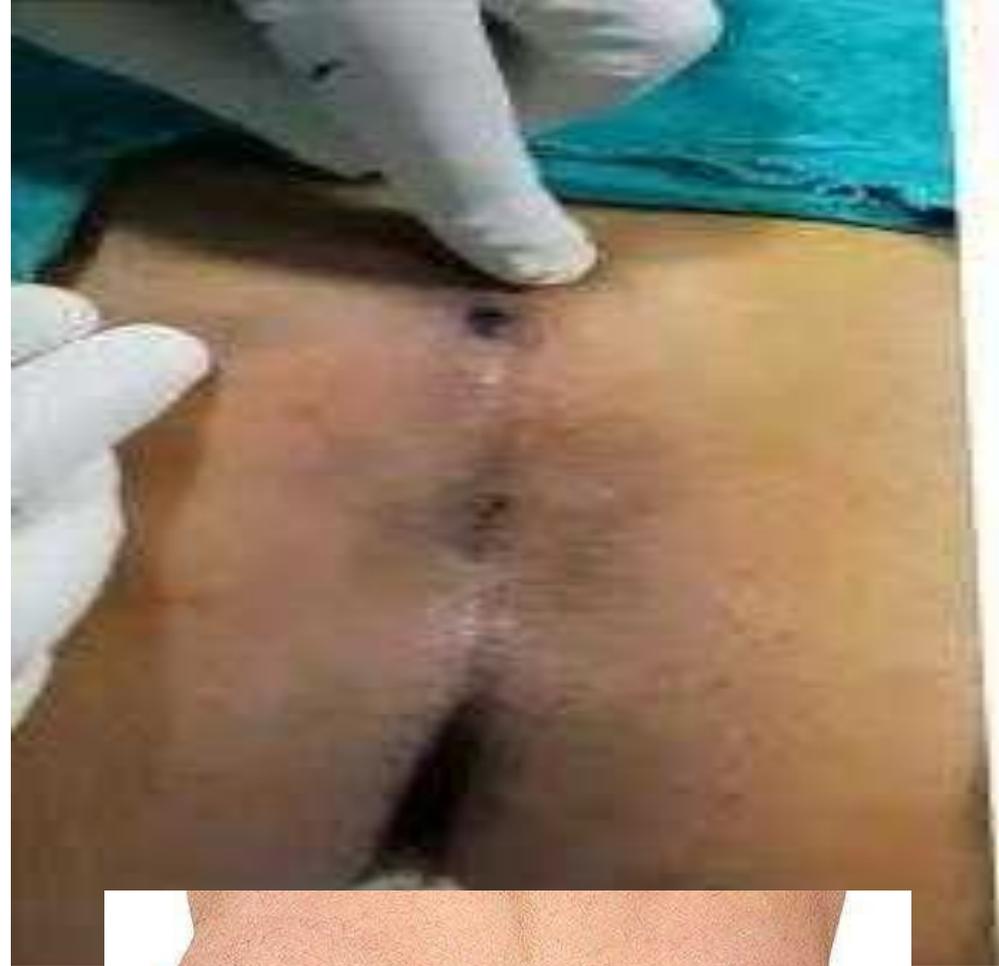
- Pilonidal Sinus (PNS)

Q2: Name 4 sites for it?

- 1) Inter-digital space
- 2) Natal cleft
- 3) Between breast
- 4) Axilla

Treatment If your PNS does get infected, surgery will most likely be recommended and may include the following:

- 1) Incision and Drainage
- 2) Wide Excision (reduce your chances of a reinfection. However; Your wound may take a long time to heal)
- 3) Excision and Primary Closure (reinfection chances are higher)



Q: A 22-years old male patient presented with upper natal cleft area increasing in pain for the last 3 days.

1. What is your diagnosis?

Gluteal Cleft Abscess of a Pilonidal Sinus

2. What is the treatment?

Incision & Drainage



Q: This pt has painful defecation:

1. Name the findings on examination of the anal area.

A > Anal Fissure

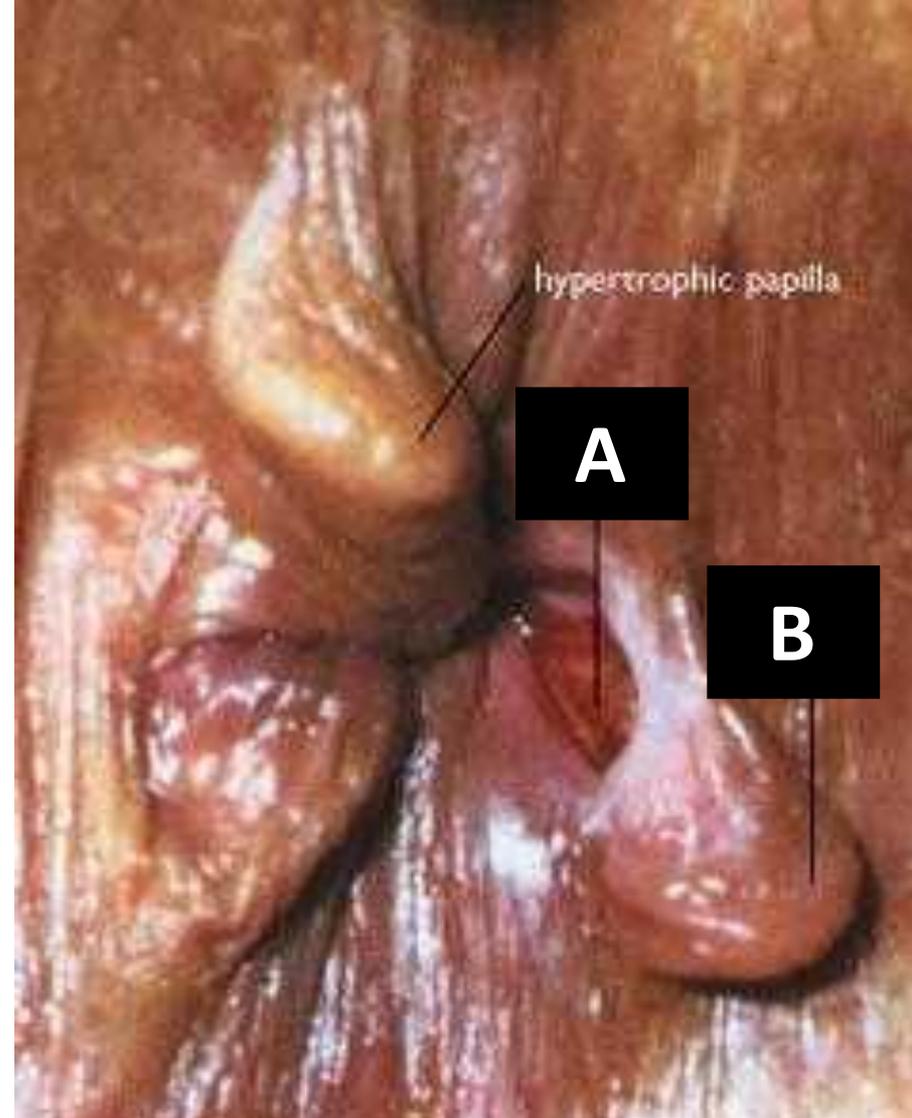
B > Sentinel Pile

2. Mention 2 treatment options.

-Lifestyle modification with high fiber diet and increase fluid intake

-Medical Management (Laxatives, stool softeners, local anesthetic creams, botulinum toxin injection, sitzbath...etc)

-Surgical Management (Sphincter dilatation, Lateral internal sphincterotomy, Fissurectomy)

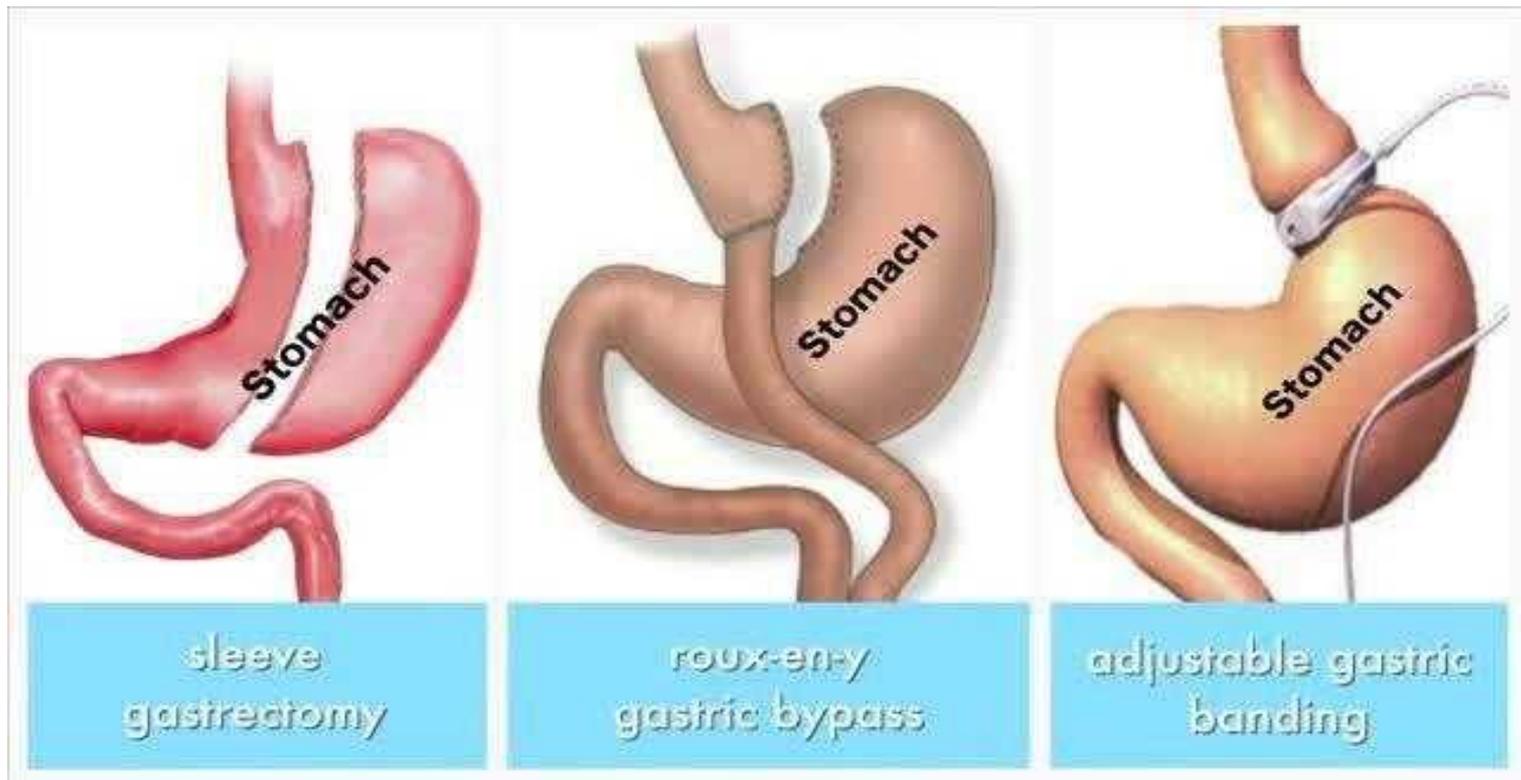


This is a chronic fissure with hypertrophic papilla & pile formation, the guidelines state that for chronic fissures medical management with botulinum toxin, stool softeners and anesthetic creams is indicated first. If the fissure is refractory to medical management then surgical intervention with lateral internal sphincterotomy is highly indicated, but sphincter dilatation could also be used.



Bariatric Surgery

- Weight reduction surgery for the morbidly obese.
- Morbid obesity : BMI > 40 or BMI > 35 with a medical problem related to morbid obesity (sleep apnea/ CAD/ DM/ HTN/ pulmonary disease/ breast cancer/ colon cancer/ arthritis/ sex hormone abnormalities/ venous stasis ulcers).



Q1: Name this surgery?

- Gastric bypass

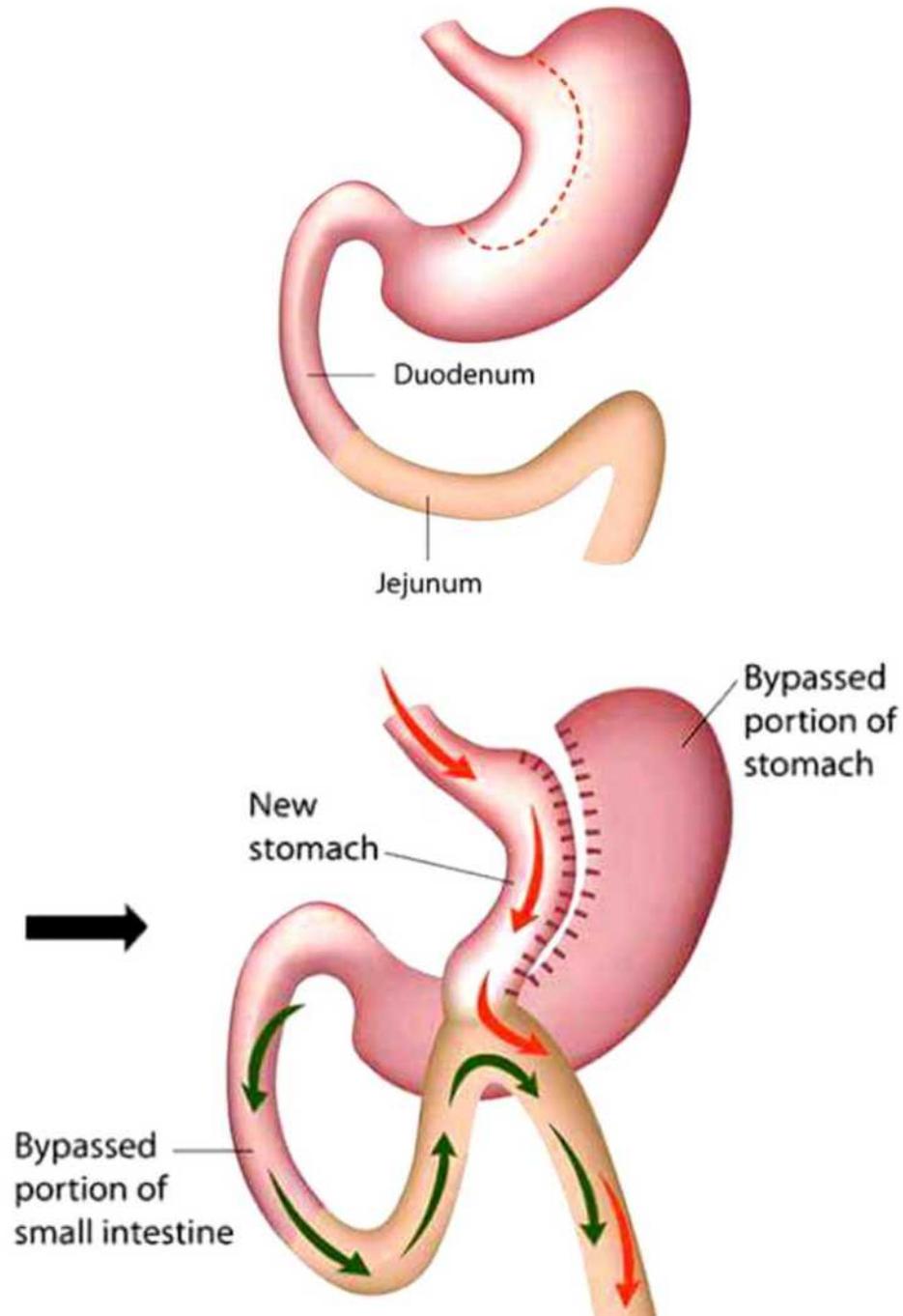
(Single Anastomosis Gastric Bypass)

Q2: Mention 2 types?

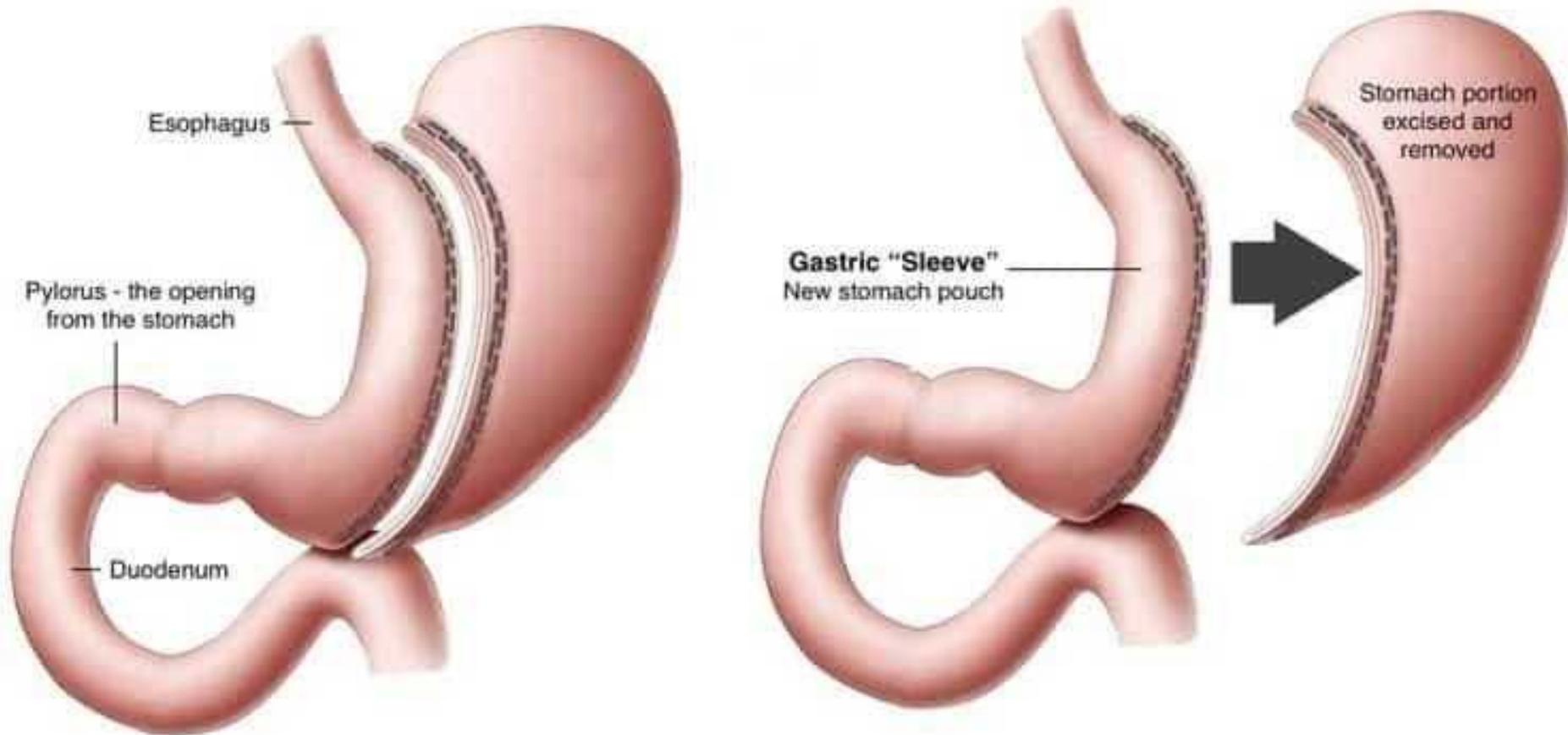
- 1) Gastrojejunostomy
- 2) Duadenoileostomy

Q3: What BMI is an indication for a surgery in a DM patient?

- >35



Lap Sleeve Gastrectomies (LSG)



Q: A Patient that needed to reduce weight ASAP, and this surgery was done:

Q1: Which procedure is this?

- Gastric Sleeve

Q2: 2 Complications for it?

- 1) Blood clots.
- 2) Gallstones
- 3) Hernia.
- 4) Internal bleeding
- 5) Leakage.
- 6) Perforation
- 7) Stricture



Q1: Name this surgery?

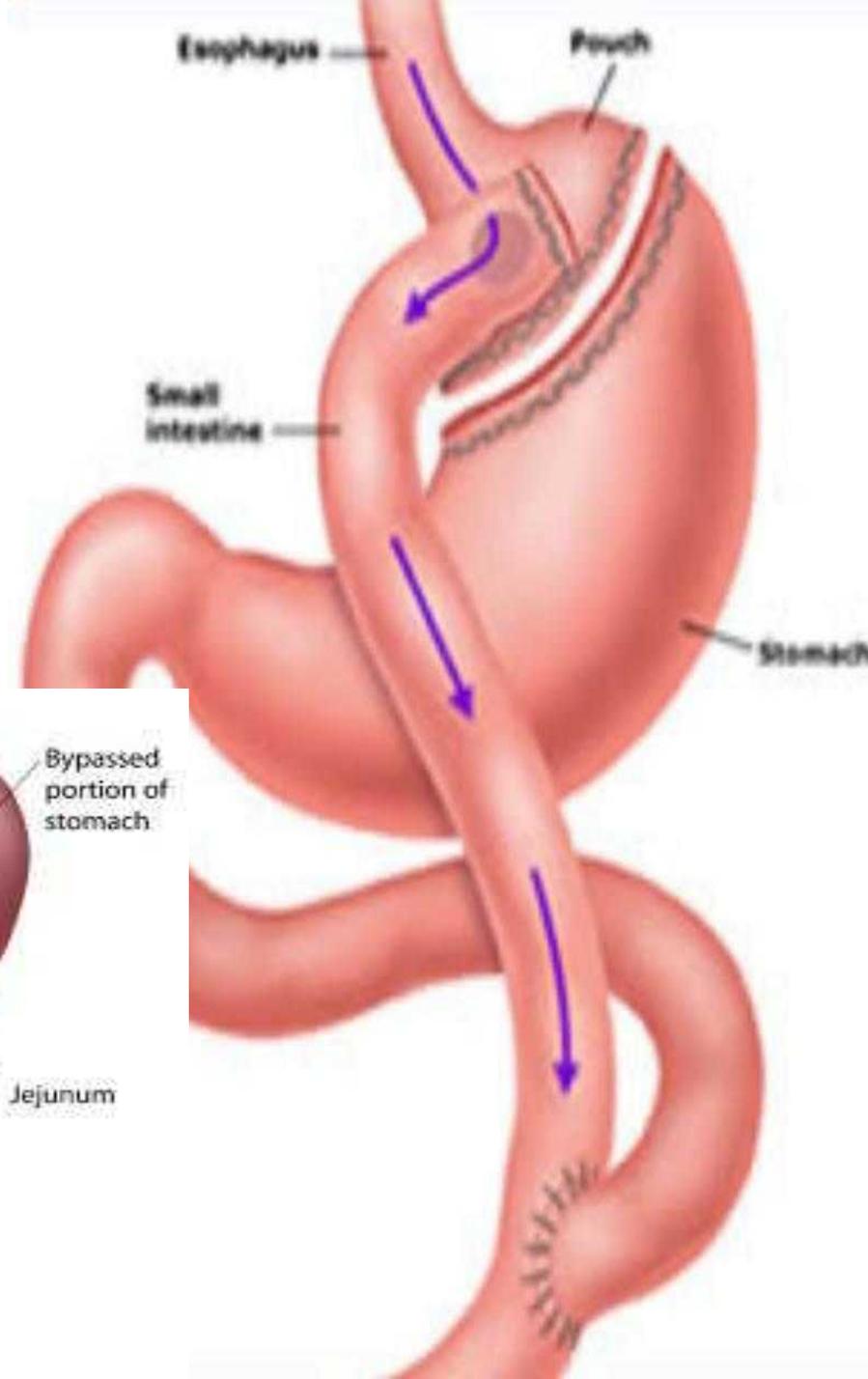
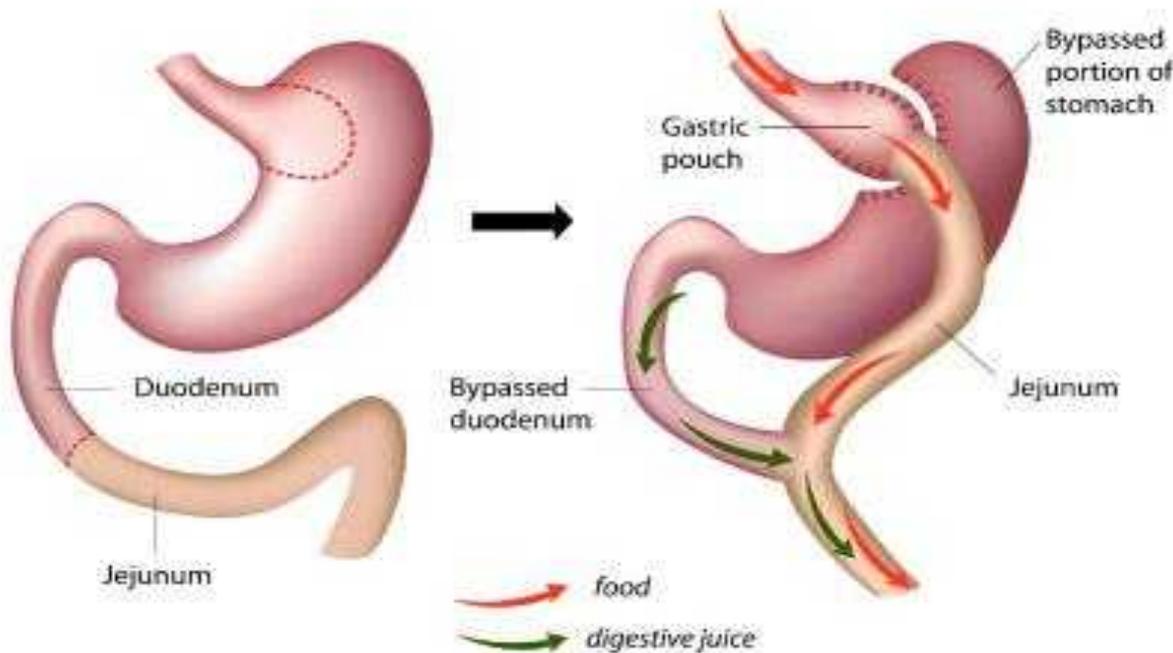
- Roux-en-y gastric bypass (RYGB)

Q2: Mention 2 mechanisms?

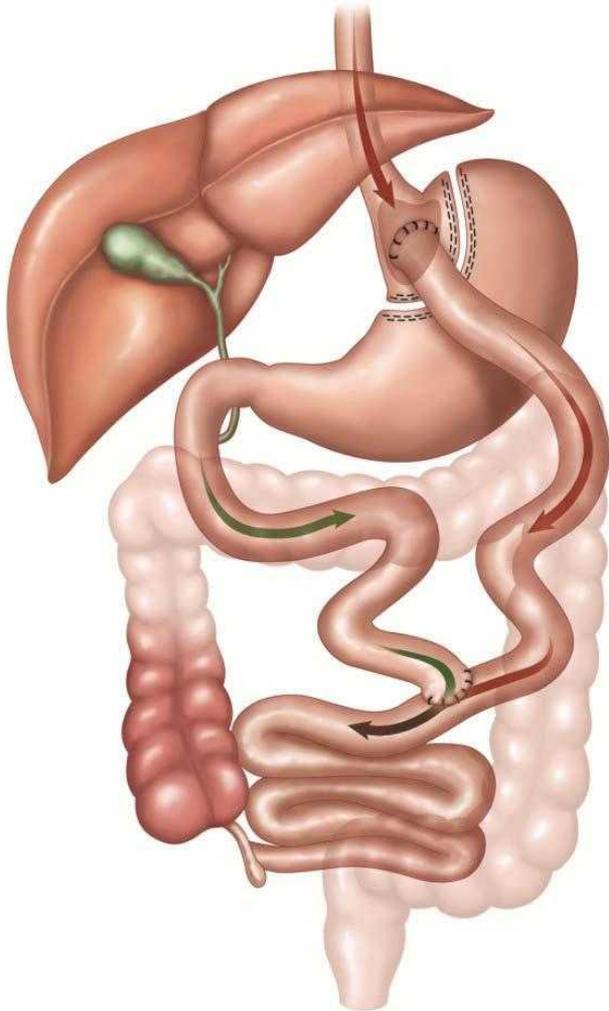
1) Malabsorption

(Decrease gastric absorption)

2) Less space for food
(early satiety)



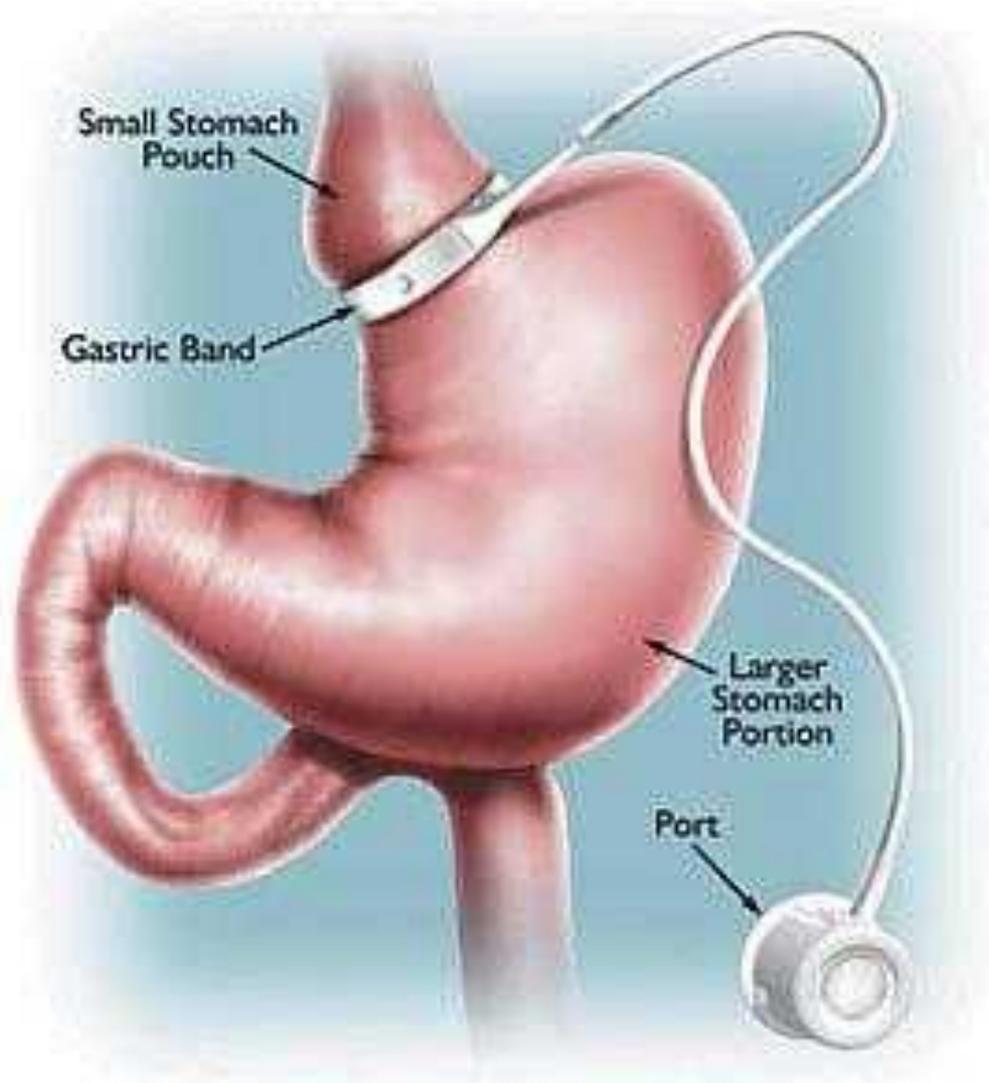
Roux-en-Y gastric bypasses (RYGB)



Gastric Balloon

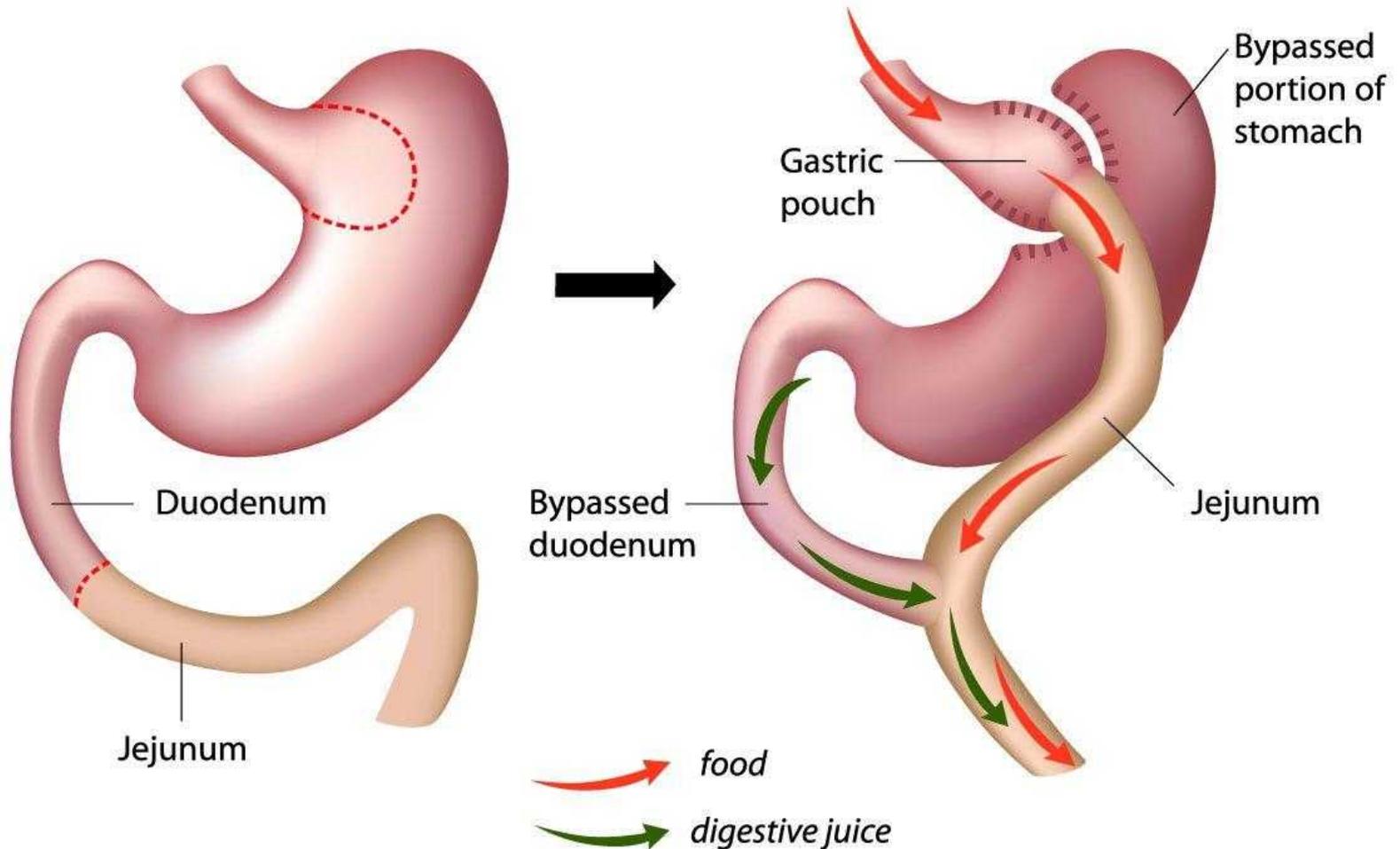


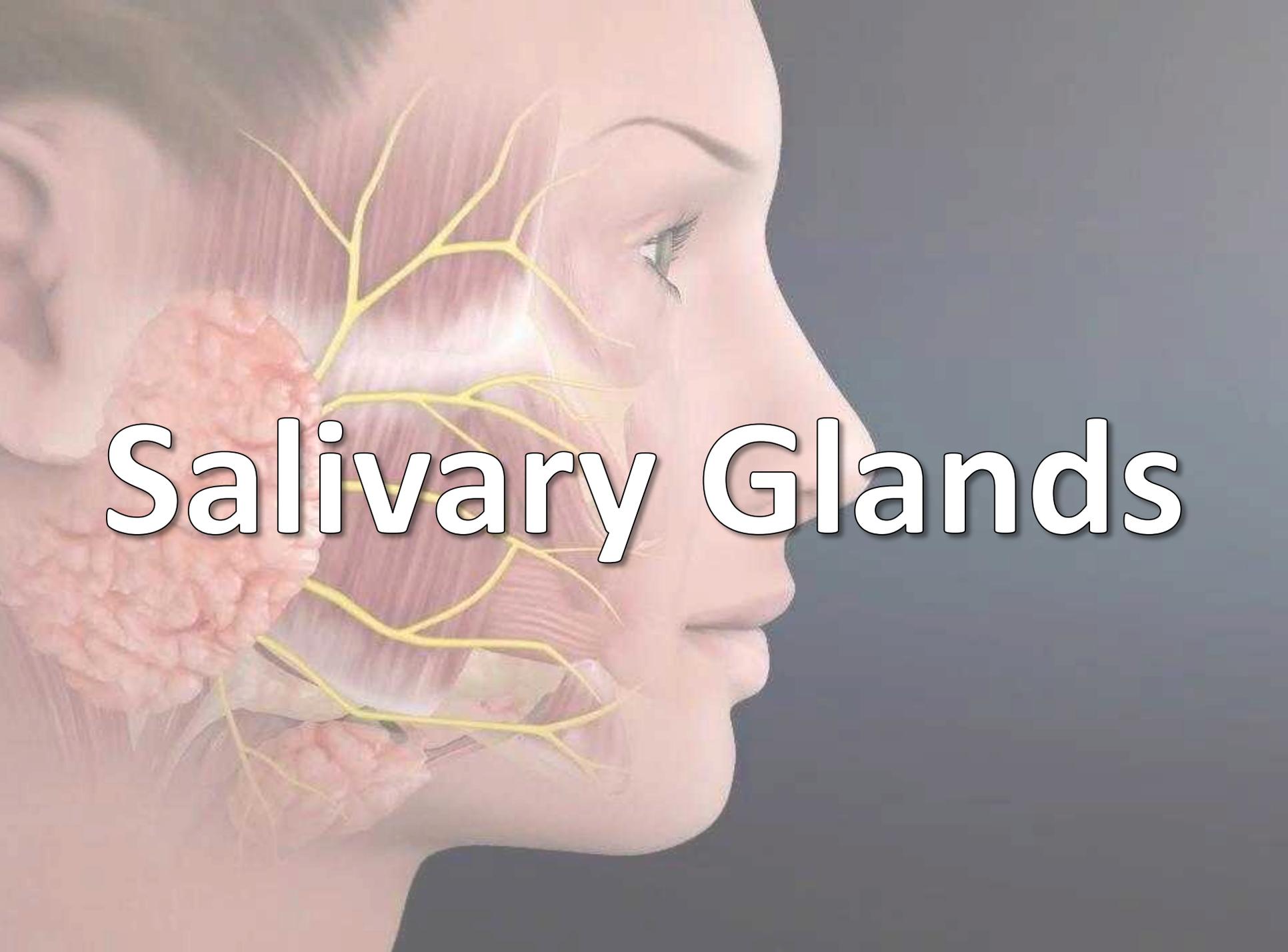
Gastric Band (LAGB)



Mini Gastric Bypass

Gastric Bypass



An anatomical illustration of a human head in profile, showing the salivary glands and their associated nerves. The parotid gland is visible in the upper part of the neck, the sublingual gland is located under the tongue, and the submandibular gland is situated below the jawline. The nerves are depicted as yellow branching structures. The text "Salivary Glands" is overlaid in the center of the image.

Salivary Glands

Q1: What is the organ affected?

- Parotid gland

Q2: What is the most likely Dx?

- Parotid Pleomorphic Adenoma

Q3: What is the most common subtype?

- Myxoid

Q4: What is 1 sign that will confirm your Dx?

- Rubbery-hard, does not fluctuate and of limited mobility on physical examination

- **Benign** salivary gland tumor.
- The most common salivary gland tumor.
- Usual location : parotid gland.
- single firm, mobile, well- circumscribed mass.
- **Painless.**
- Slow growing.

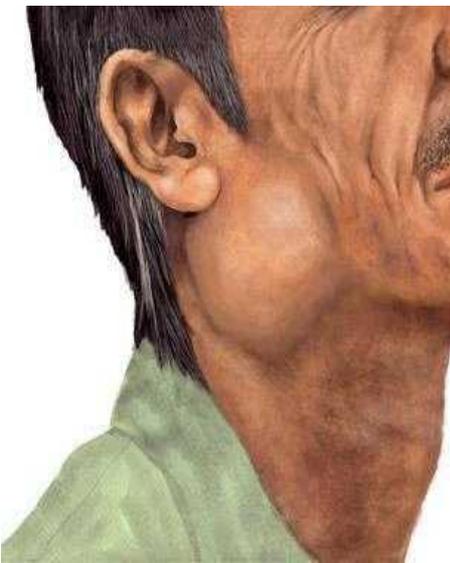


Q5: How do we treat this pt?

- Superficial parotidectomy, some said total parotidectomy

Q6: Histology?

- Epithelial
- Myoepithelial
- Stroma
- Pseudopods
- No true capsule



Q: a patient had a superficial parotidectomy:

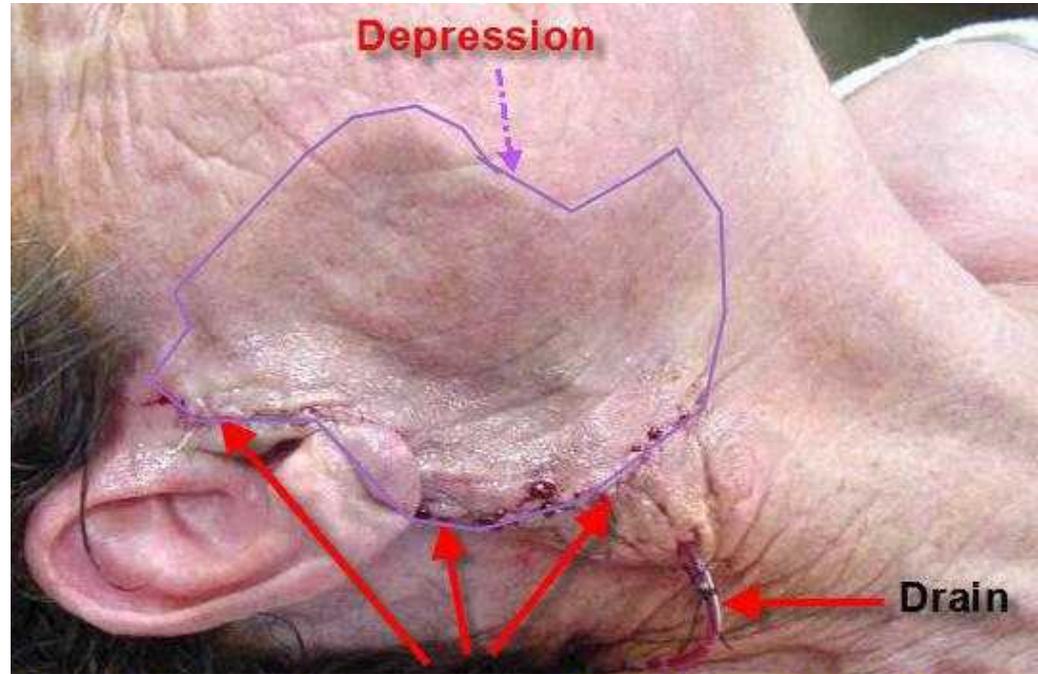
Q1: What is the most likely indication?

- Parotid gland tumor
(most likely pleomorphic adenoma)

Q2: What is the nerve in risk of being damaged?

- Facial nerve

Some said: great auricular nerve



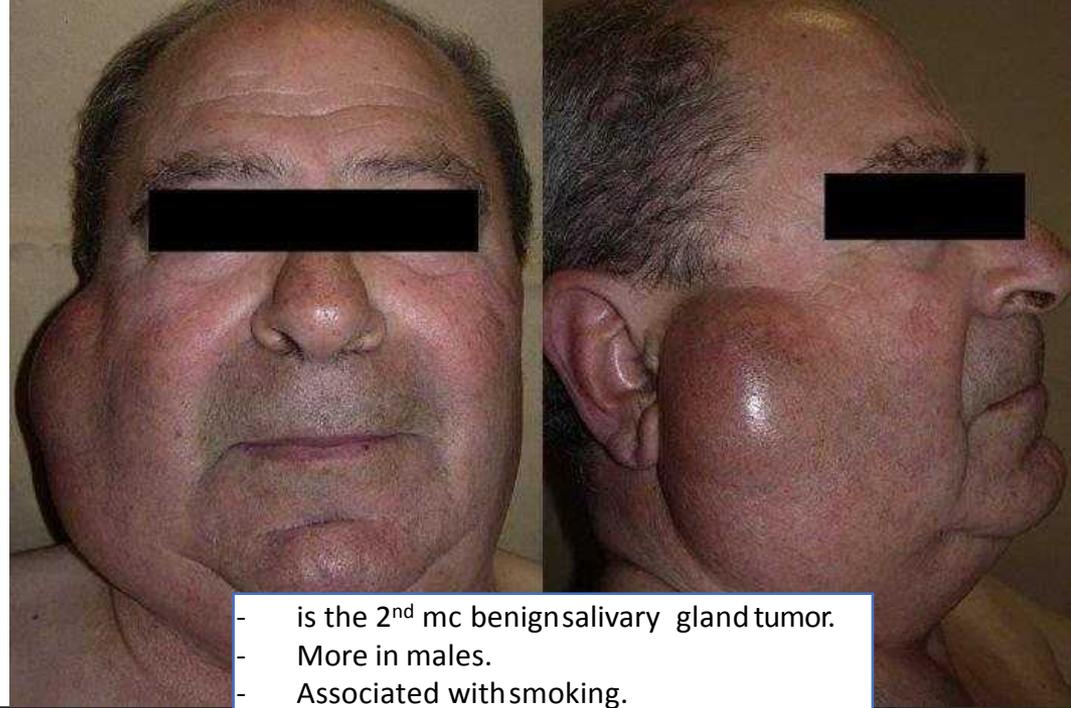
Q: 50 yo pt presented with bilateral neck swelling:

Q1: What is the Dx?

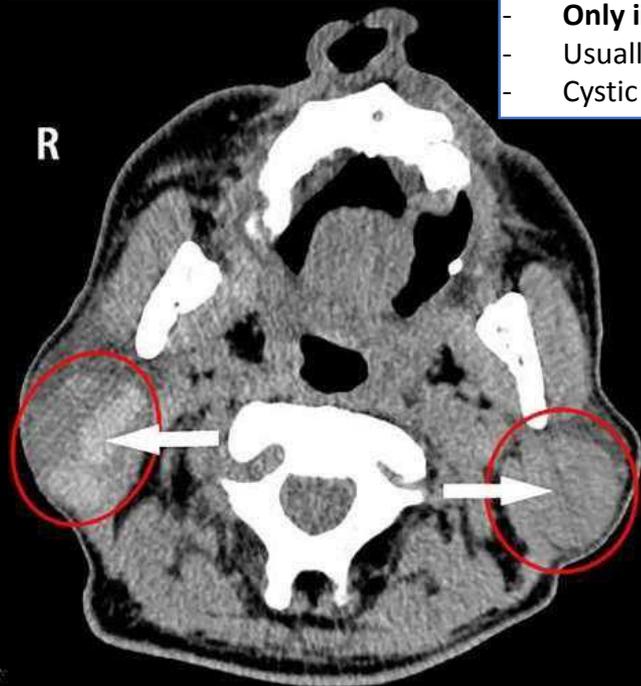
- Warthin's tumor

Q2: What is the malignancy risk?

- 0.3%



- is the 2nd mc benign salivary gland tumor.
- More in males.
- Associated with smoking.
- **Only in parotid.**
- Usually at parotid tail.
- Cystic mass.

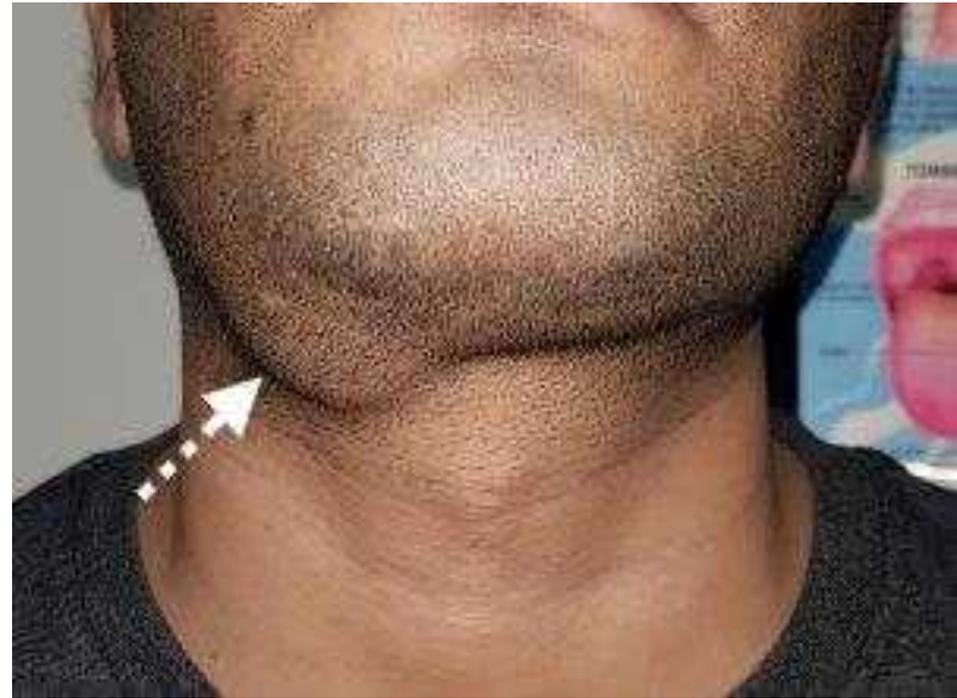


**Q1: if a surgery was done
what is the nerve at risk to
be injured?**

- Marginal Mandibular Nerve

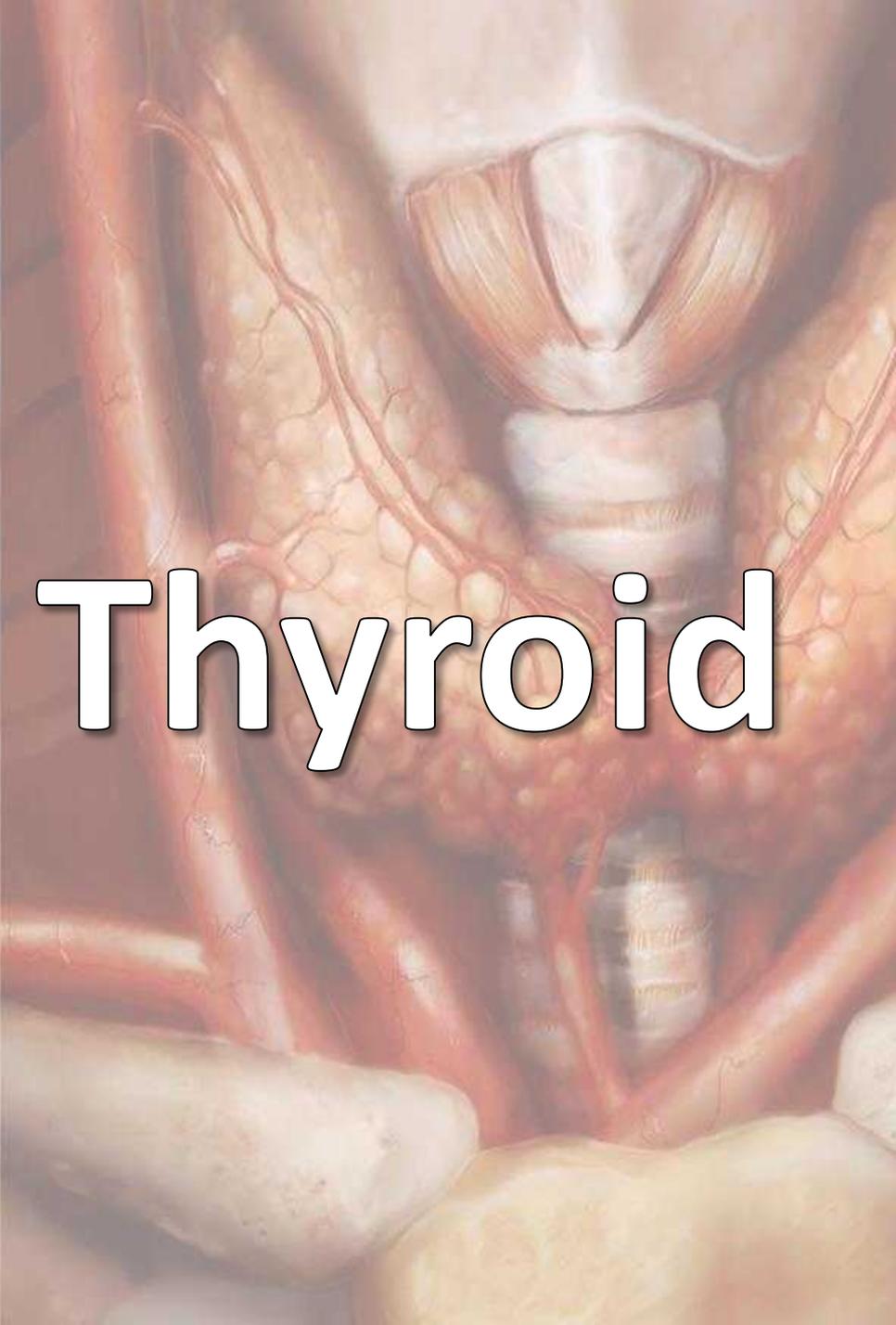
**Q2: What is the risk of
malignancy?**

-50%



Salivary Gland	Malignancy Rate	Incidence of Tumor
Parotid	20%	80%
Submandibular	50%	15%
Sublingual & Minor	70%	5%





Neck & Thyroid

DDx of neck lumps

	Midline	Lateral
Neoplastic	Thyroid Parathyroid Pharyngeal/Laryngeal	Most tumors (lymphoma, carotid...)
Congenital	Thyroglossal duct cyst Laryngocele	Cystic Hygroma Branchial cleft cyst
Infectious	Ludwig's Angina	Most infections (cat-scratch, mononucleosis, sialadenitis...)
Inflammatory	Submental reactive lymphadenopathy Thyroiditis	Most reactive lymphadenopathy

Q1: What is the Dx?

- Lacerated neck wound

Q2: What zone?

- Zone 2

Q3: Name the borders for it?

- From the angle of the mandible to the cricoid cartilage

Q4: When to intubate the patient?

- 1) Expanding hematoma
- 2) Obstructive complication
- 3) Cervical vertebrae injury



PENETRATING NECK INJURIES

What depth of neck injury must be further evaluated?

Penetrating injury through the platysma

Define the anatomy of the neck by trauma zones:

Zone III

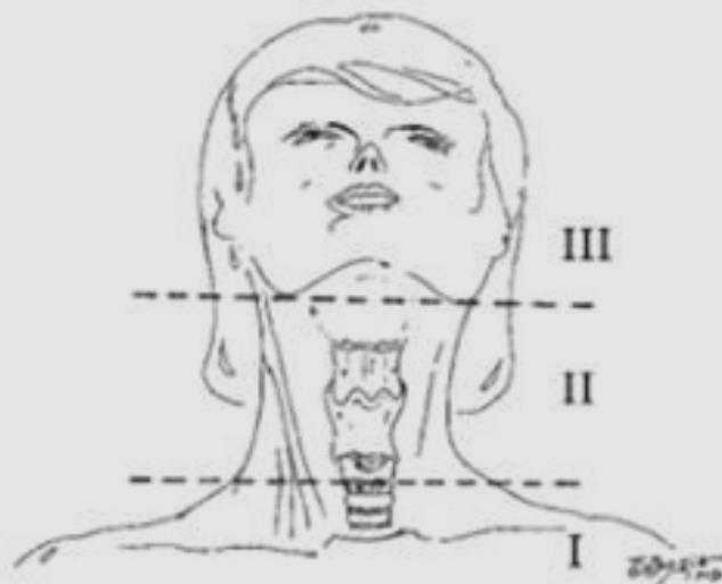
Angle of the mandible and up

Zone II

Angle of the mandible to the cricoid cartilage

Zone I

Below the cricoid cartilage



How do most surgeons treat penetrating neck injuries (those that penetrate the platysma) by neck zone:

Zone III

Selective exploration

Zone II

Surgical exploration vs. selective exploration

Zone I

Selective exploration

What is selective exploration?

Selective exploration is based on diagnostic studies that include A-gram or CT A-gram, bronchoscopy, esophagoscopy

What are the indications for surgical exploration in all penetrating neck wounds (Zones I, II, III)?

"**Hard signs**" of significant neck damage: **shock**, exsanguinating hemorrhage, expanding hematoma, pulsatile hematoma, neurologic injury, subQ

Bethesda diagnostic category

VERY COMMON QUESTION!

Risk of malignancy

Usual management

I	Nondiagnostic or unsatisfactory	Cyst fluid only Virtually acellular specimen Other (obscuring blood, clotting artifact, etc.)	1% to 4%	Repeat FNA with ultrasound guidance
II	Benign	Consistent with a benign follicular nodule (includes adenomatoid nodule, colloid nodule, etc.) Consistent with lymphocytic (Hashimoto) thyroiditis in the proper clinical context Consistent with granulomatous (subacute) thyroiditis Other	0% to 3%	Clinical follow-up
III	Atypia of undetermined significance or follicular lesion of undetermined significance		5% to 15%	Repeat FNA
IV	Follicular neoplasm or suspicious for a follicular neoplasm	Specify if Hurthle cell (oncocytic) type	15% to 30%	Surgical lobectomy
V	Suspicious for malignancy	Suspicious for papillary carcinoma Suspicious for medullary carcinoma Suspicious for metastatic carcinoma Suspicious for lymphoma Other	60% to 75%	Near-total thyroidectomy or surgical lobectomy
VI	Malignant	Papillary thyroid carcinoma Poorly differentiated carcinoma Medullary thyroid carcinoma Undifferentiated (anaplastic) carcinoma Squamous cell carcinoma Carcinoma with mixed features (specify) Metastatic carcinoma Non-Hodgkin lymphoma Other	97% to 99%	Near-total thyroidectomy

Q1: What is the Dx?

- Thyroglossal duct cyst

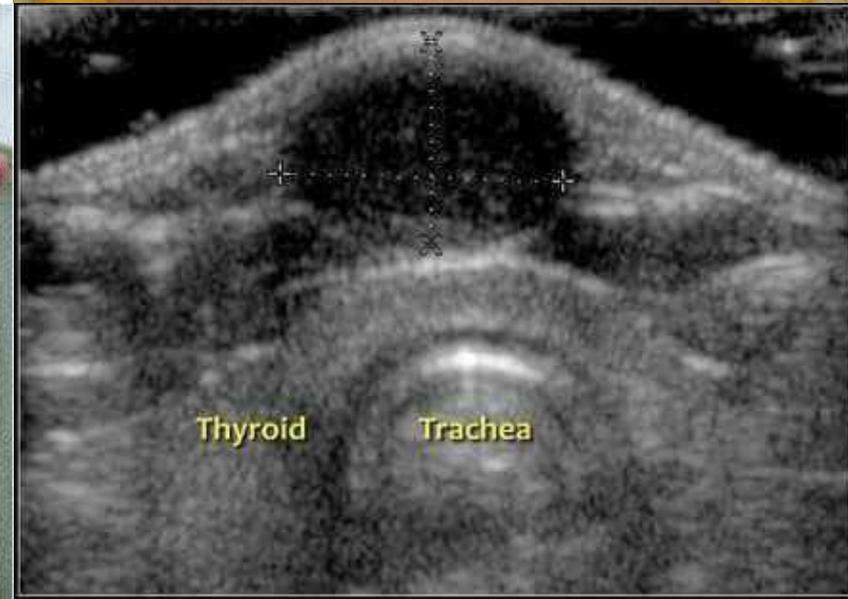
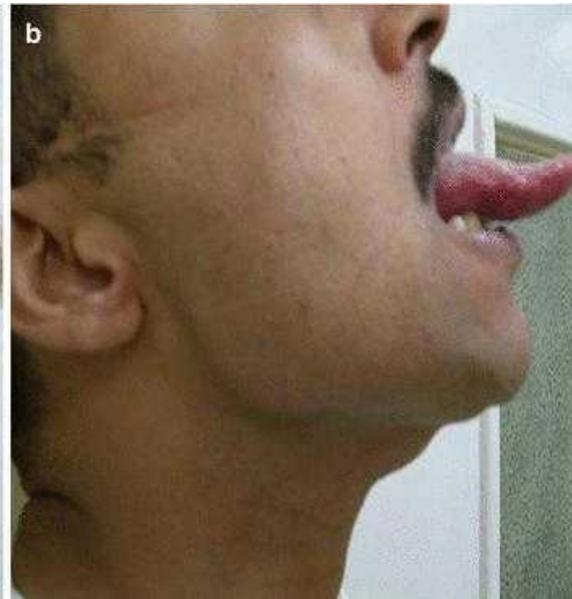
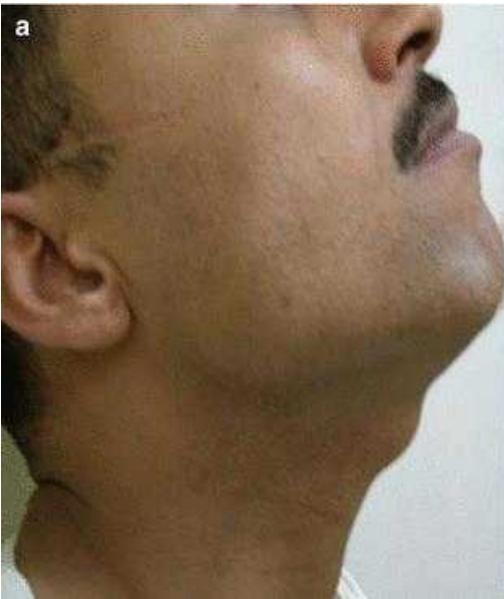
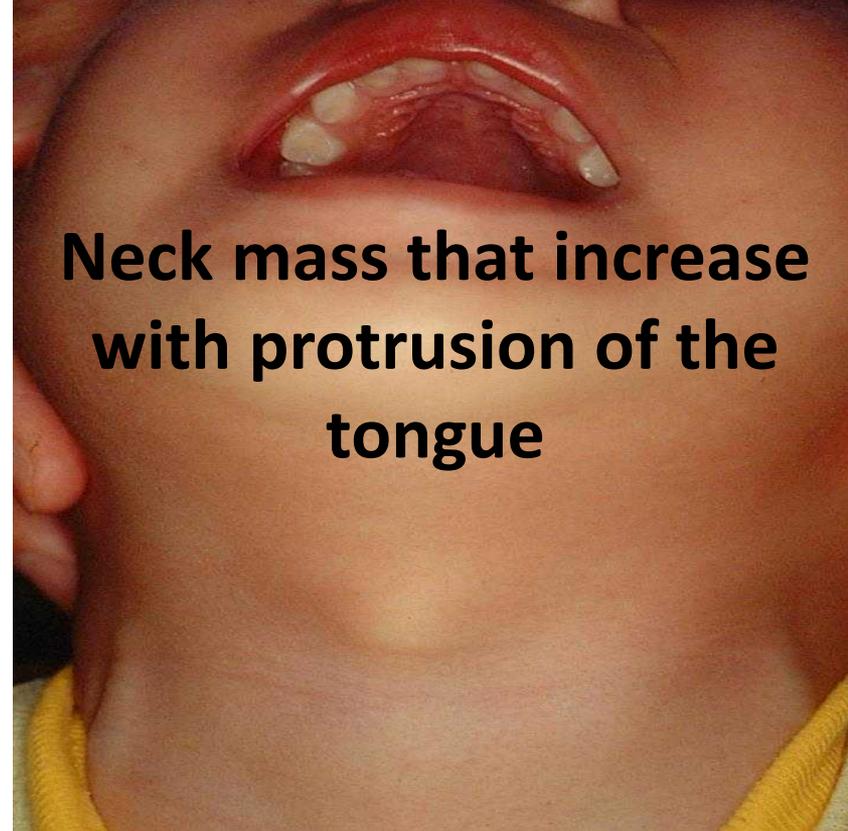
Q2: What is the structure on U/S (involved bone)?

- Hyoid bone

Q3: What is the Mx?

- Sistrunk's procedure

(if the hyoid bone not removed the recurrence rate is > 50-60%)



Q4: What is the malignancy risk?

- 2%

Q5: Name the malignancy that does not occur here?

- Medullary Ca

Q6: Complications?

- Infection, malignant risk

Q7: Sign to confirm your Dx?

- Movement with tongue protrusion

Q8: What is the risk of recurrence?

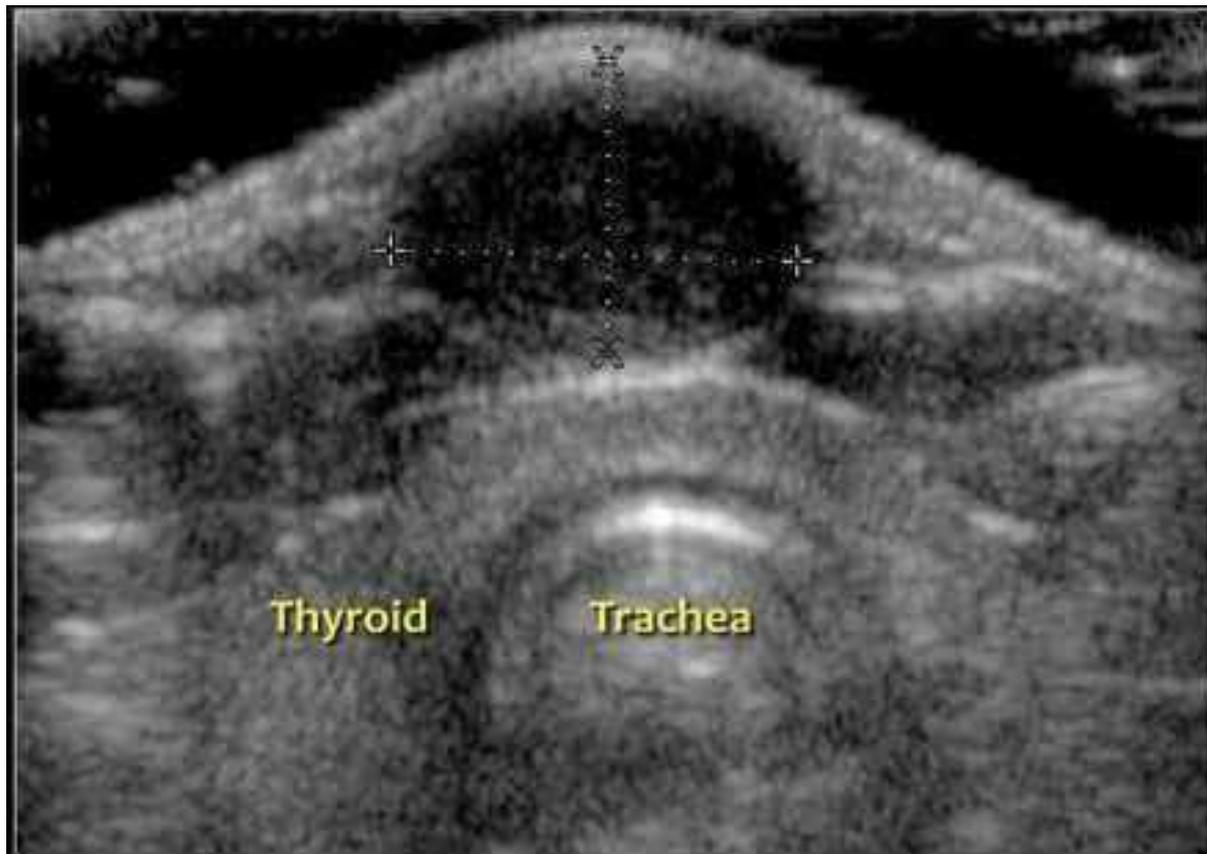
- Sistrunk procedure reduces the recurrence risk from 60% to < 10%



Q: This is the US of a 20 yo male with a neck lump.

1. What is the next step in approaching his condition? FNAC

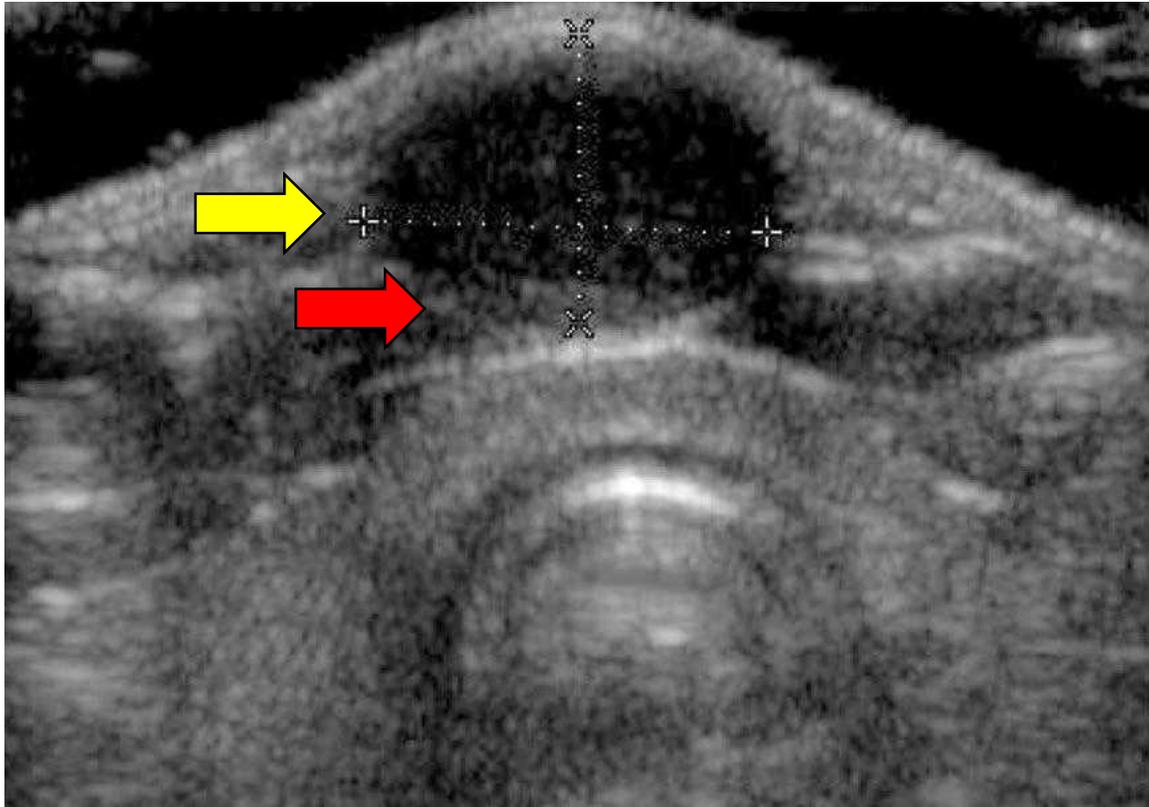
2. What is the most likely Dx? Thyroglossal Duct Cyst



Q: This patient underwent surgery for the pathology depicted by the yellow arrow. Histology reported a malignancy of non-thyroid origin.

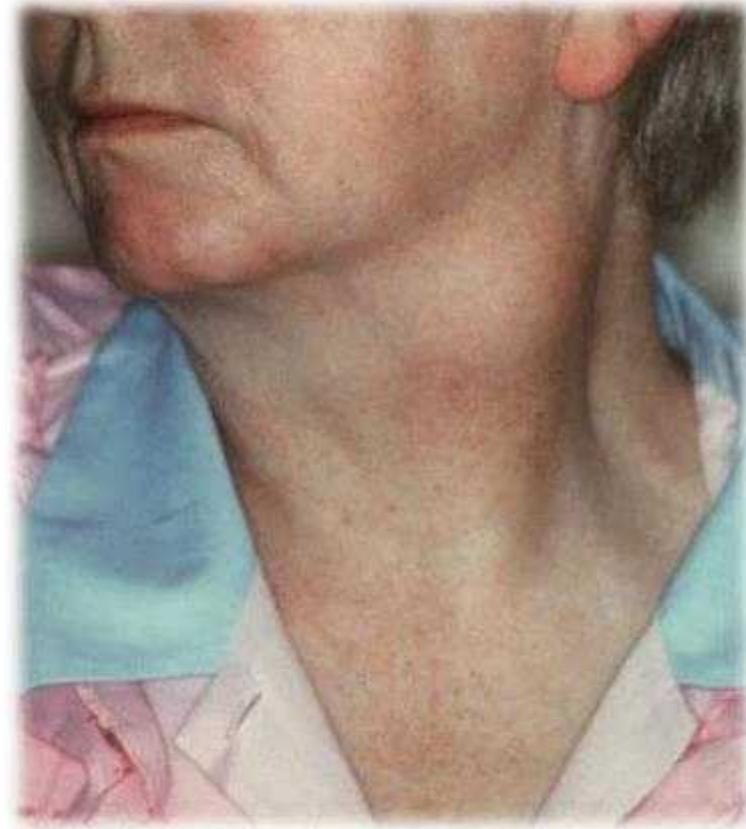
What is the most likely malignancy? SCC

What structure does the red arrow point to? Hyoid bone



Q1: Name the triangle of the neck in which the lesion is situated:
anterior triangle.

Q2: Give 2 DDx for the lump:
sialodenitis/ lipoma.



Q: Hx that suggest a thyroid nodule:

Q1: What is the Dx?

- Multi-nodular goiter

Q2: How to approach the patient with this Dx?

- TFT

- US

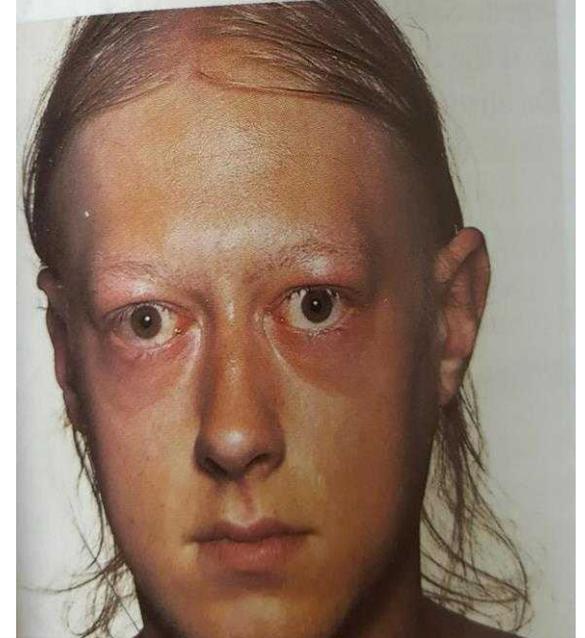


Q1: What is the Dx?

- Graves disease

Q2: Mention 2 signs that you can see?

- Exophthalmos
- Significant hair loss
- Lid retraction



Q3: What is the 1st Sx patient will develop if she develops ophthalmoplagia?

- Diplopia or Proptosis (not sure)

Q4: What is a drug you can give this patient before getting into surgery?

- PTU (Propyl thiouracil), propranolol



**Q: 50 year old female patient
present with hypothermia:**

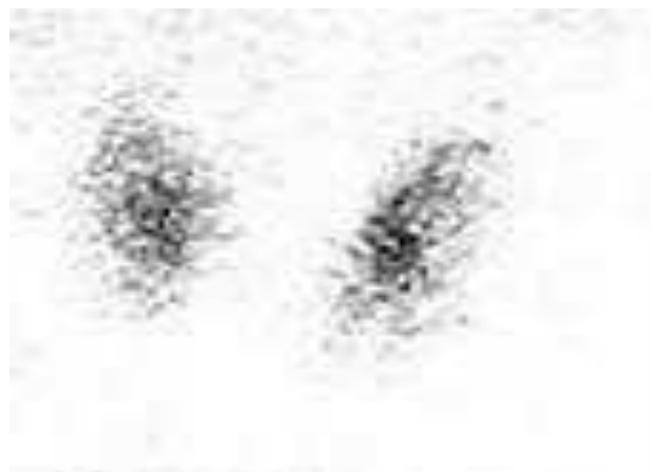
**Q1: What is the endocrine
disorder?**

- Hypothyroidism

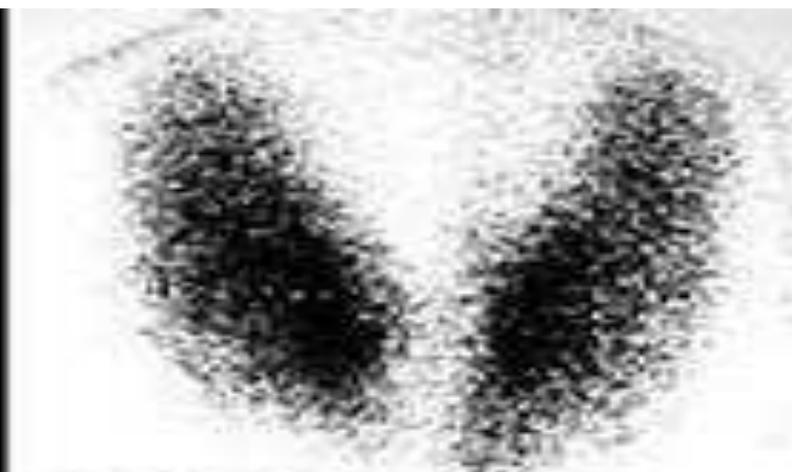
Q2: Mention 3 signs on face?

- 1) Puffy face
- 2) Periorbital edema
- 3) Coarse hair





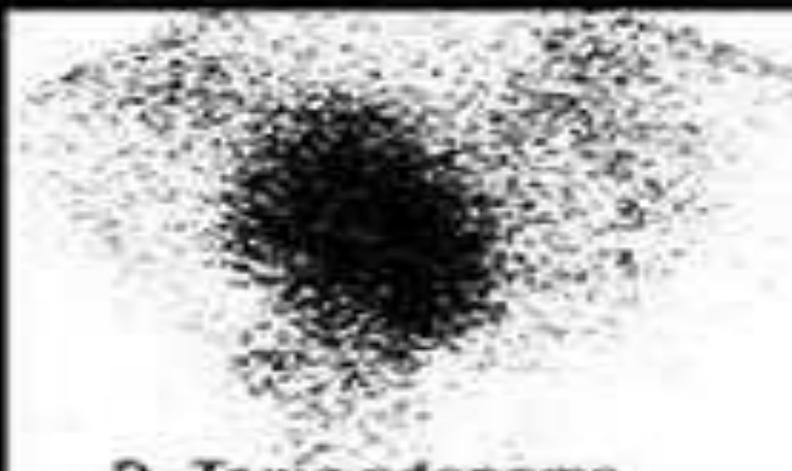
A. Normal



B. Graves' disease



C. Toxic mng



D. Toxic adenoma

Q: Patient with hyper diffuse functioning thyroid:

Q1: What is the Dx?

- Graves Disease

Q2: What is the serological marker?

- TSI (thyroid stimulating immunoglobulin)

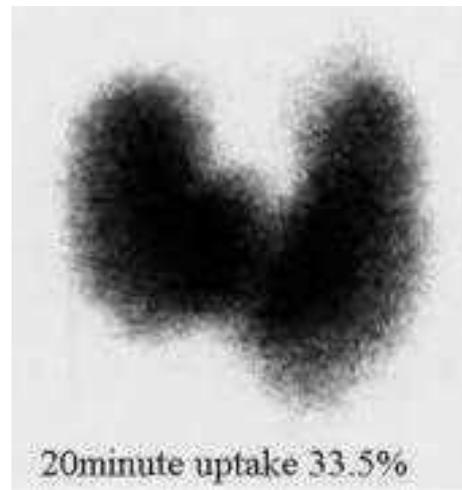
Q3: Mention 3 lines of Mx?

1) Anti-thyroid drugs (carbimazole) + β -blockers

2) Radio-iodine

3) Surgery

** All 3 are considered 1st line Mx



Q1: What is the pathology?

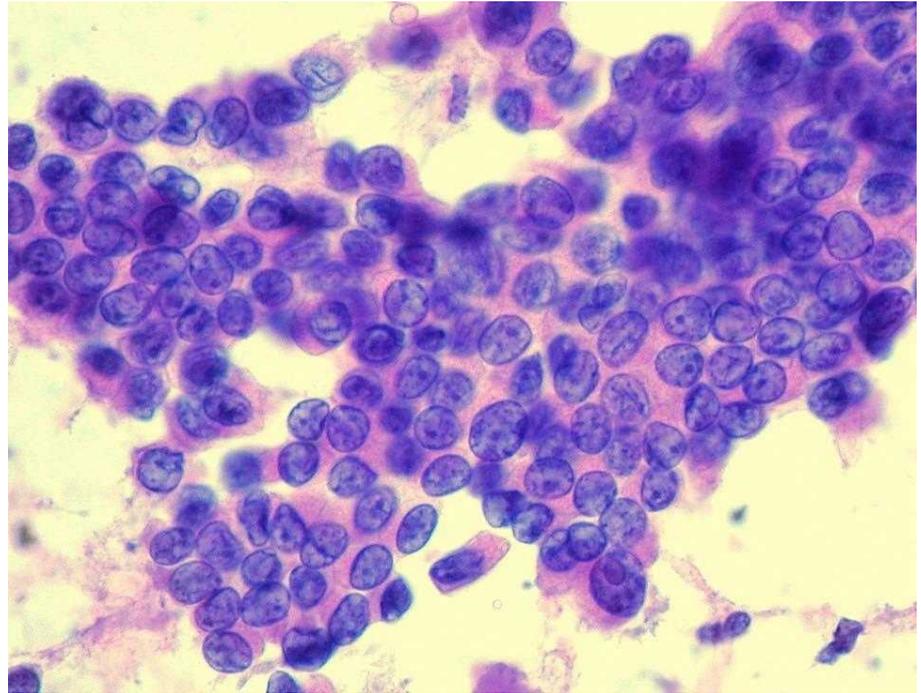
- Papillary Thyroid Carcinoma

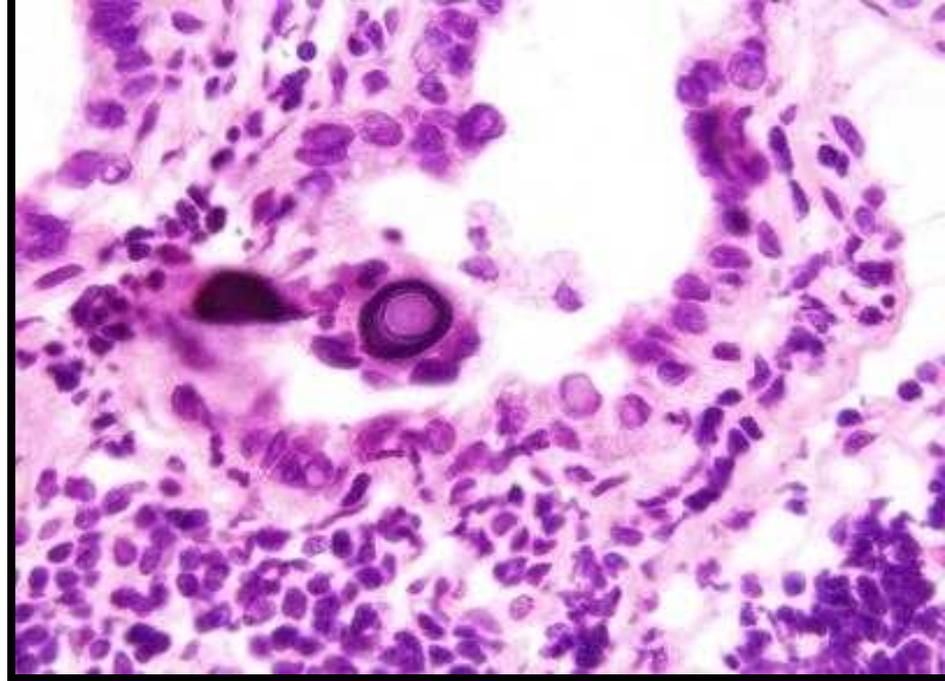
Q2: What is the rate of the malignancy?

- 97-99%

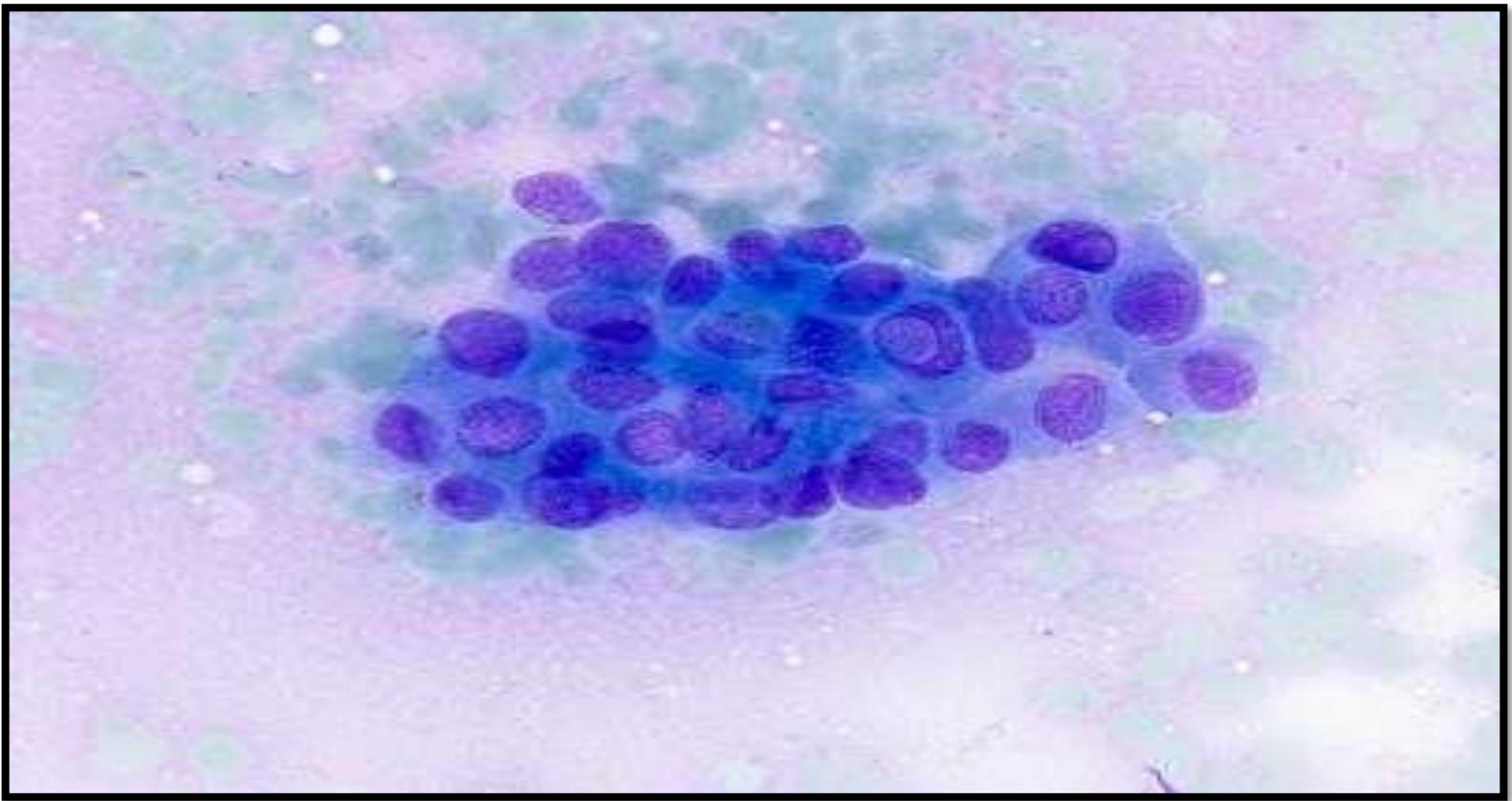
Q3: Mention 2 features seen in the picture?

- 1) Nuclear Crowding
- 2) Orphan Annie Nuclei





- Papillary thyroid carcinoma:**
- a. Nuclear groove (blue arrow).**
 - b. Psammoma body.**



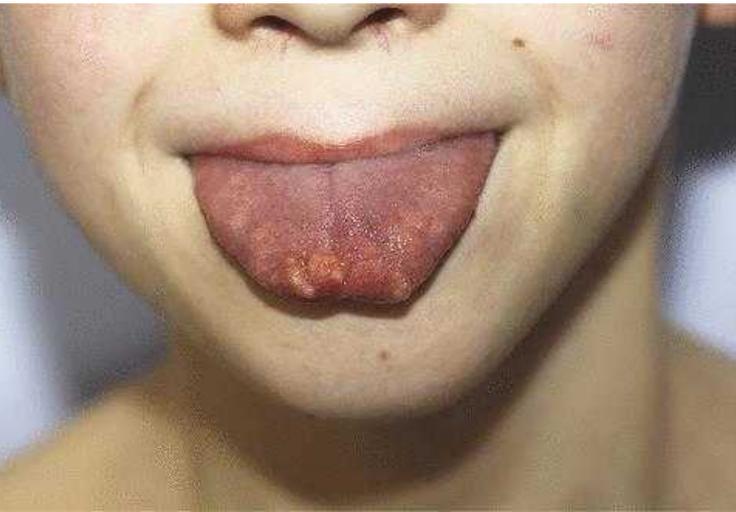
Papillary thyroid carcinoma:
(Intranuclear cytoplasmic inclusions)

Q1: What type of thyroid cancer do you expect to see in this patient?

- Medullary

Q2: What's the marker?

- Calcitonin



Q1: What type of thyroid cancer do you expect to see in this patient?

- Medullary cancer

Q2: Before surgery what type you must exclude?

- MEN 2 (Pheochromocytoma)



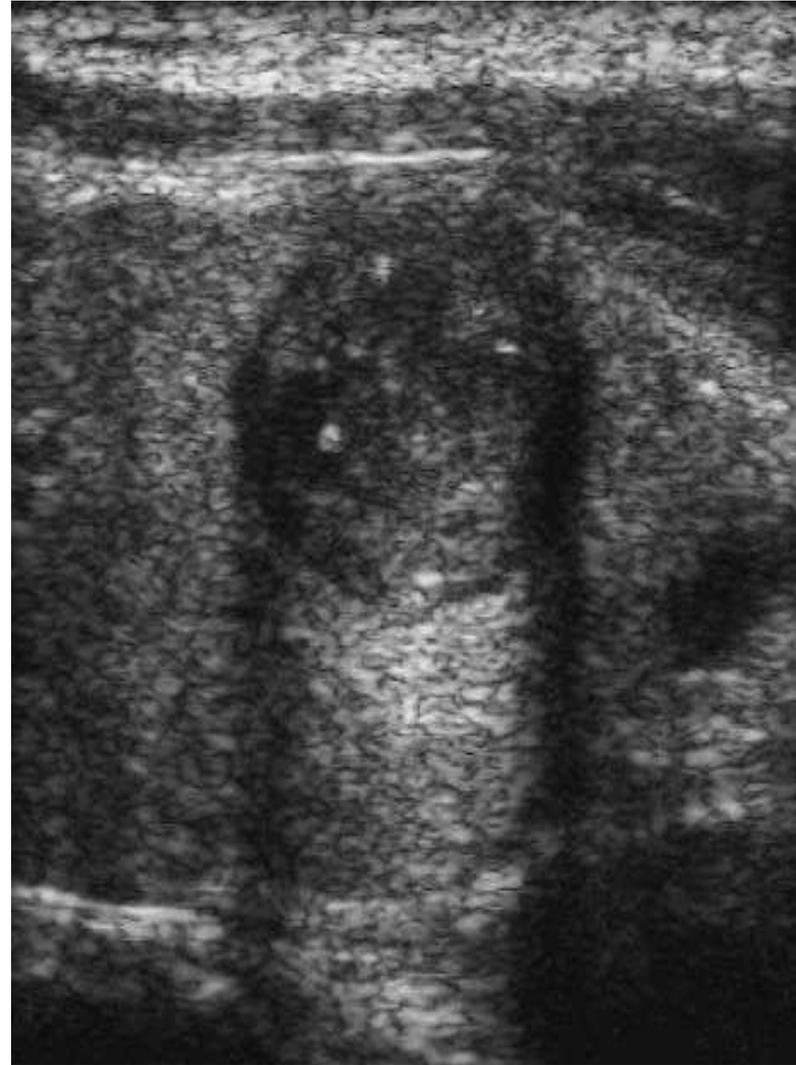
Q: Hx of thyroid nodule, US showing: micro-calcifications, investigation of blood vessels and reactive LN:

Q1: Bethesda Grade?

- Bethesda 6

Q2: What is your Mx?

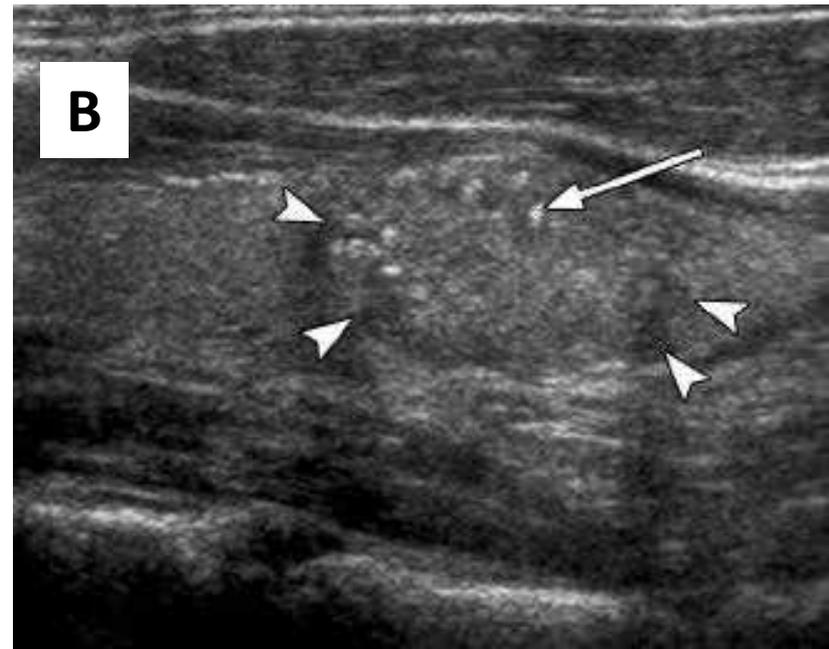
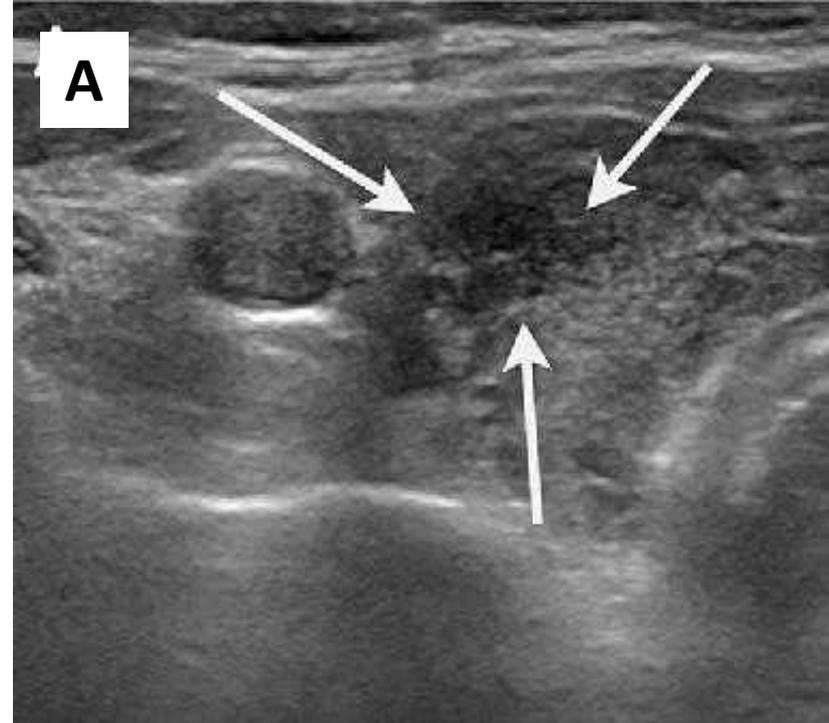
- Total Thyroidectomy



Q: Images A & B demonstrate thyroid nodules that are considered sonographically suspicious for malignancy. Name the feature labelling each nodule suspicious.

A > Heterogeneous

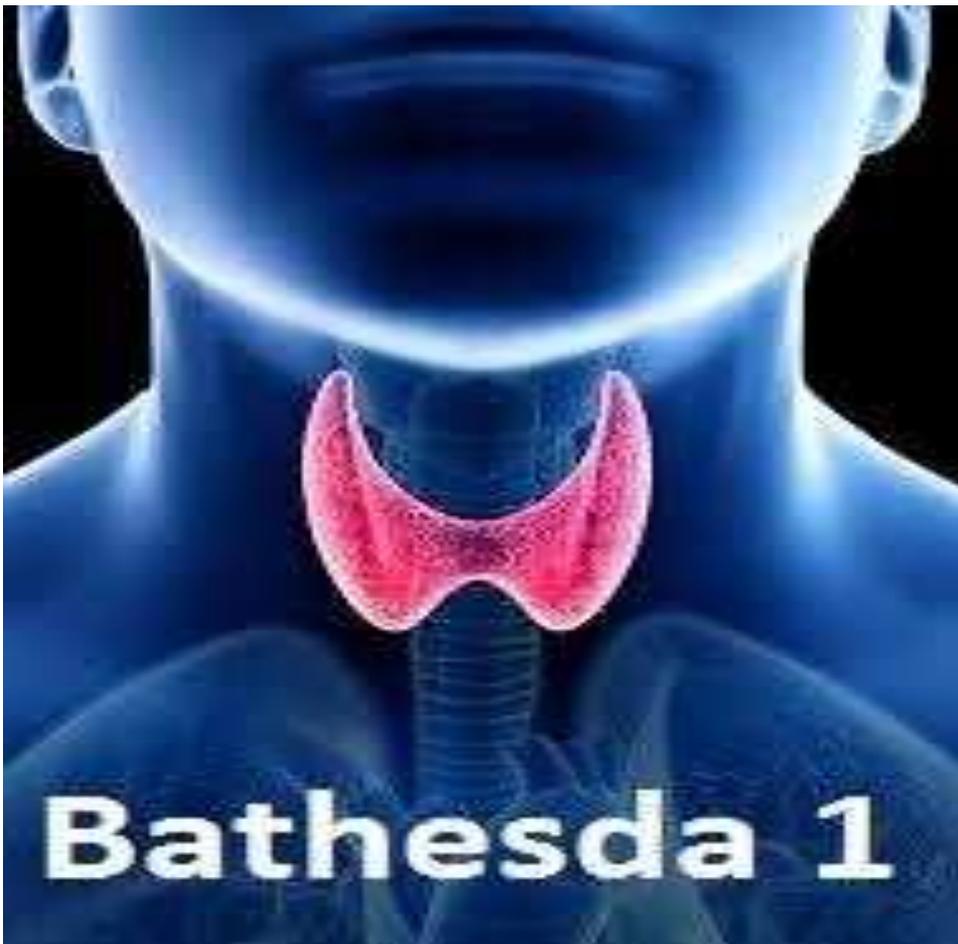
B > Calcification



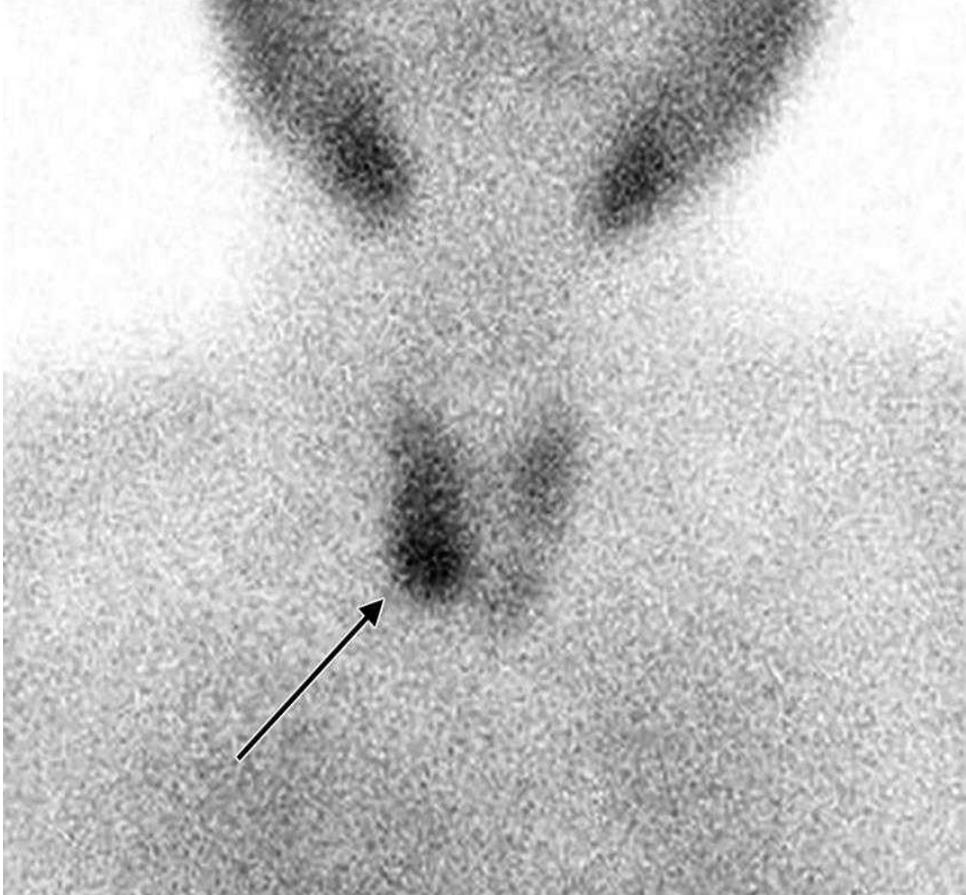
Q: What shall you do in the following cases ?

A. Thyroid → repeat cytology

B. Parathyroid → removal (parathyroid adenoma)



Anterior neck – 10 mins



Q1: Name the study?

- Sestamibi scan of parathyroid

Q2: What is the most common cause of the condition?

- Adenoma



15 minutes



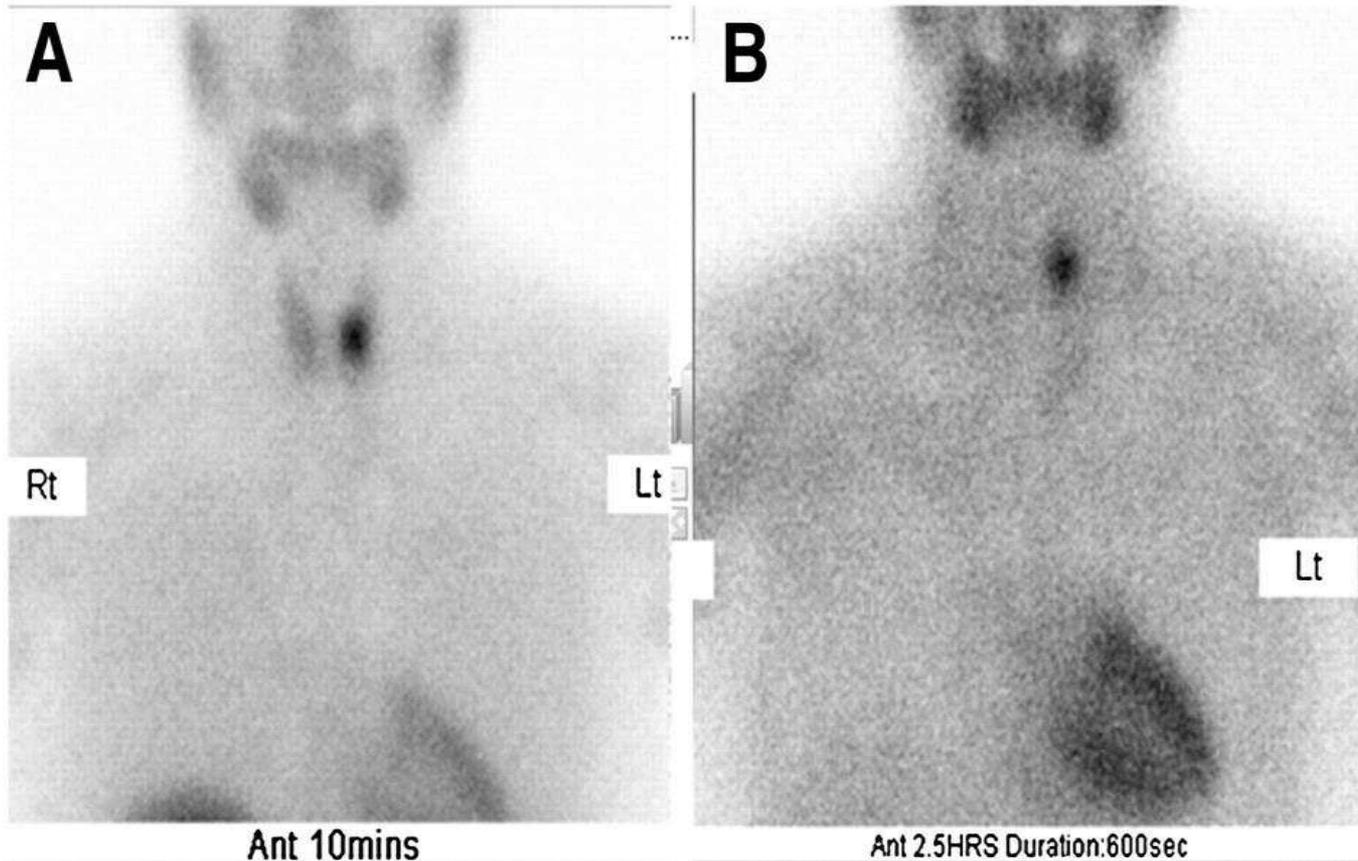
2 hours

Q1: Name the study?

- Sestamibi scan

Q2: What is the pathology you see?

- Hyperfunctioning parathyroid glands



Q1: Risk of disease to be from single nodule?

- 85-90% Adenoma

Q2: What is your Dx?

- Single parathyroid gland adenoma

Q3: What is your Mx?

- Removal

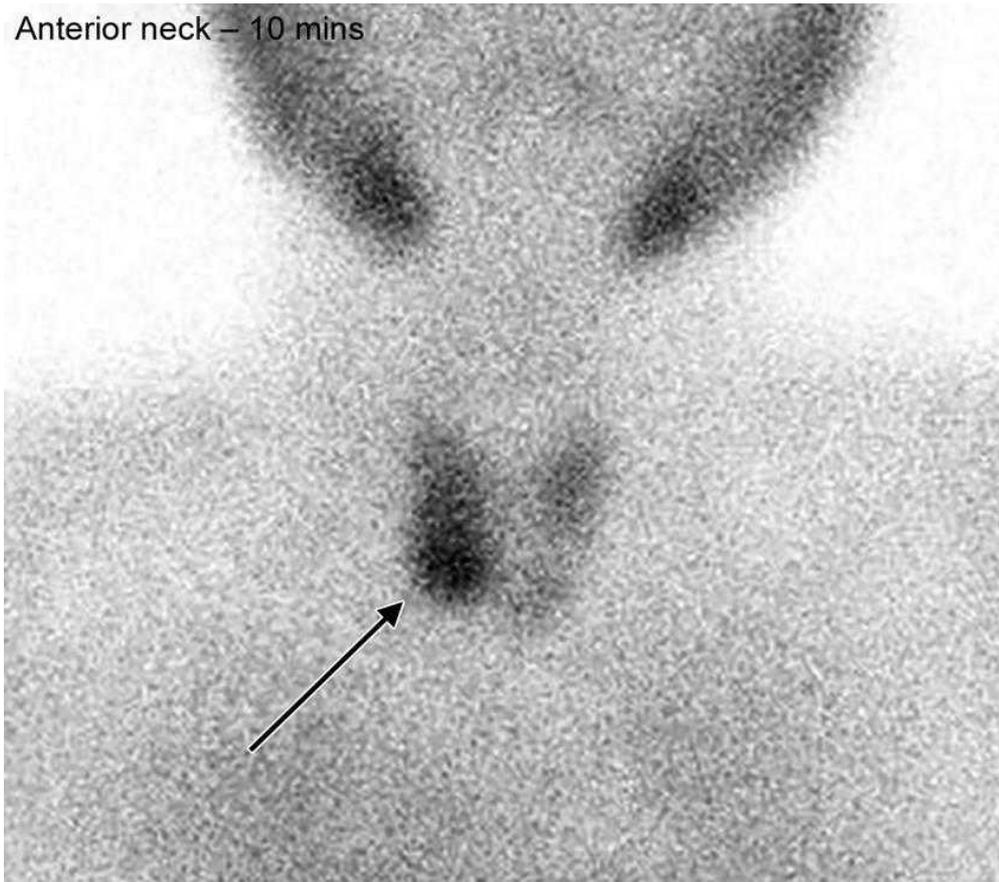


Q1: What is the Dx?

- Parathyroid adenoma (1ry hyperparathyroidism)

Q2: The 1st Sx to develop if the patient had high PTH & Calcium?

- Bone pain (Since it's Hyper)
- if Hypo: Peri-oral numbness, carpal spasm



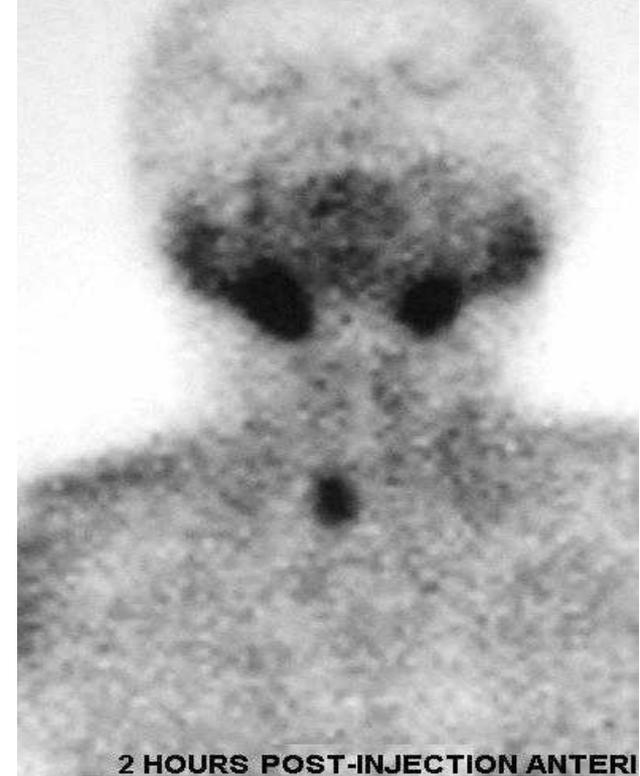
Q: A 60-years old female complains of pain in her bones. She presents with a palpable central neck lump below the cricoid cartilage that moves upward upon swallowing.

1. What does the lump mostly represent?

Parathyroid Carcinoma

2. What is the bone condition called?

Osteitis Fibrosia Cystica



Q1: Name the Dx?

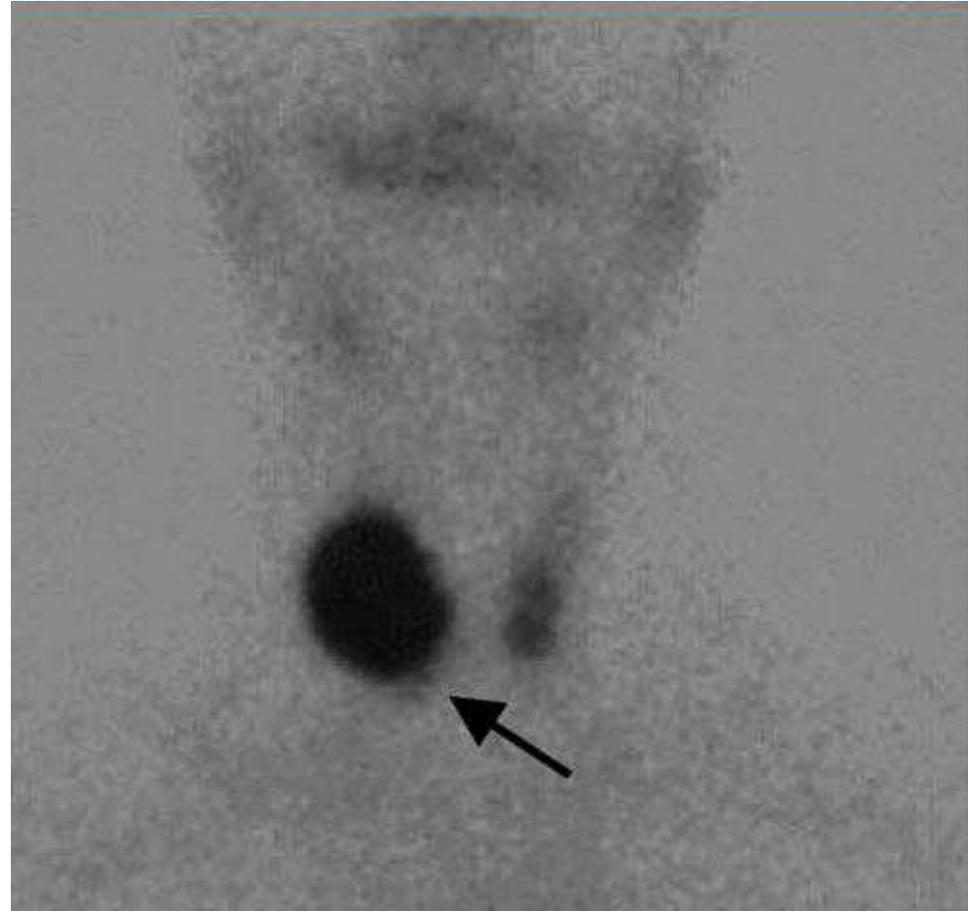
- Parathyroid hot nodule

Q2: Name the Rx?

- Surgery (Lobectomy)

Q3: Risk of malignancy?

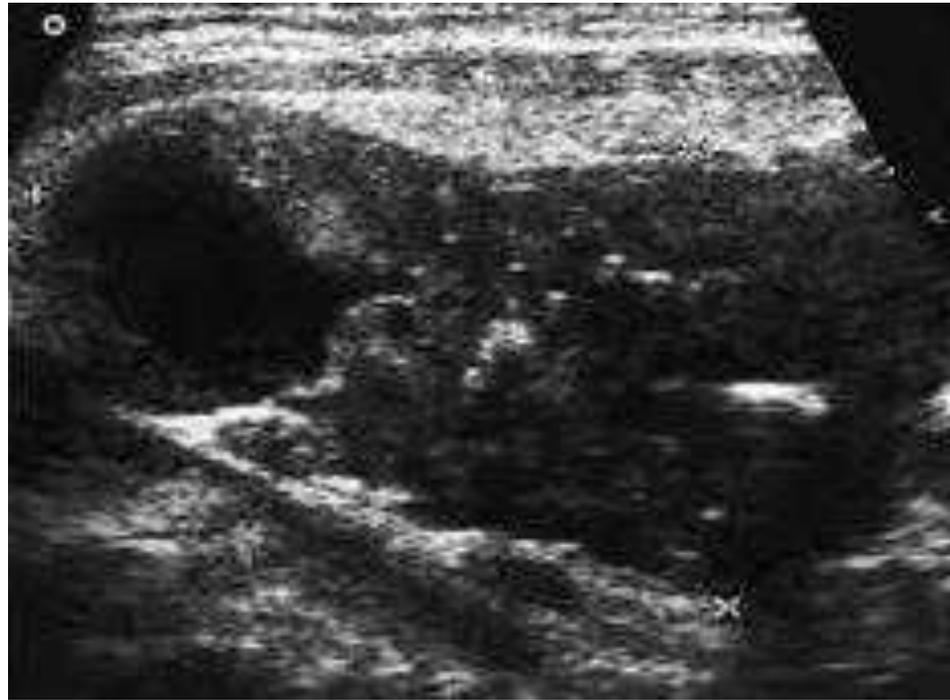
- Low risk (<3-5%)



Q: Hx of palpable neck mass, recurrent renal stone, high level of calcium and parathyroid hormone:

Q1: Name the Dx?

- Parathyroid carcinoma



Q2: What is the minimal Mx to be done?

- Parathyroidectomy or en-bloc resection of the parathyroid mass and any adjacent tissues that have been invaded by tumor . (from uptodate)

*** Note: En-bloc resection could include the ipsilateral thyroid lobe, paratracheal alveolar and lymphatic tissue, the thymus or some of the neck muscles, and in some instances, the recurrent laryngeal nerve

Q: The morning post-total thyroidectomy the patient developed the sign seen in this figure:

Q1: Name of the sign?

- Trousseau Sign

Q2: What is the cause?

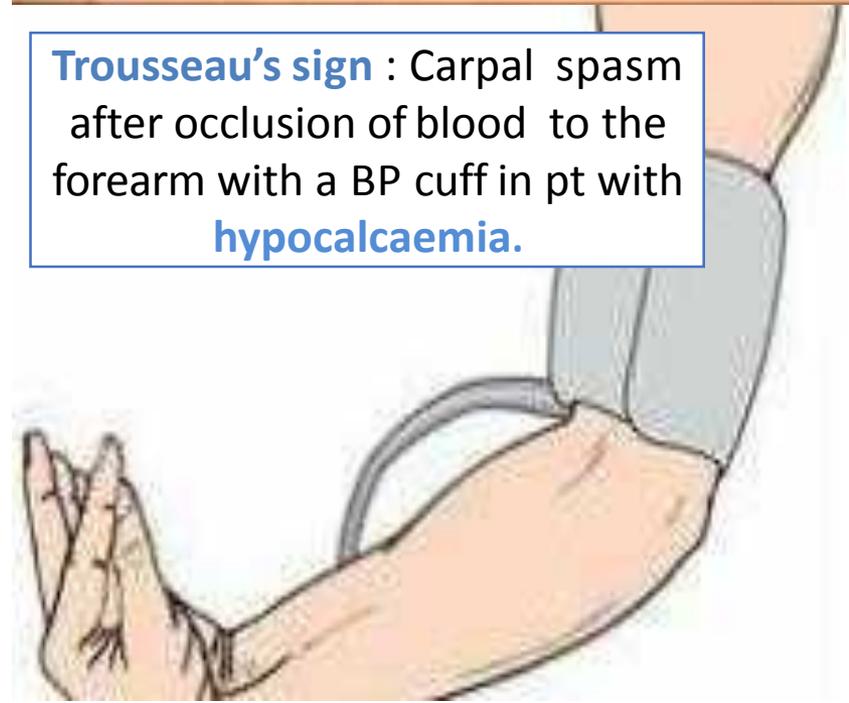
- Hypocalcemia after removal of parathyroid glands

Q3: What is the most likely cause of hypoparathyroidism?

- Ischemic Injury



Trousseau's sign : Carpal spasm after occlusion of blood to the forearm with a BP cuff in pt with **hypocalcaemia**.





Q1: What are the signs?

- Chvostek and Trousseau signs

Q2: What is the cation that influx and cause this sign?

- Na⁺ Sodium

A woman with blonde hair, wearing pink scrubs, stands in a clinical setting. She has her hands clasped in front of her and is looking down. To her left is a piece of medical equipment with a tray. The background shows a wall with a corkboard and some papers.

Breast

<https://radiologyassistant.nl/breast/bi-rads-for-mammography-and-ultrasound-2013>

BI-RADS CATEGORIES

BI-RADS 0 (incomplete): Recommend additional imaging -- mammogram or targeted ultrasound

BI-RADS 1 (negative): Routine breast MR screening if cumulative lifetime risk $\geq 20\%$

BI-RADS 2 (benign): Routine breast MR screening if cumulative lifetime risk $\geq 20\%$

BI-RADS 3 (probably benign): Short-interval (6-month) follow-up

BI-RADS 4 (suspicious): Tissue diagnosis

BI-RADS 5 (highly suggestive of malignancy): Tissue diagnosis

BI-RADS 6 (known biopsy-proven malignancy): Surgical excision when clinically appropriate

Final Assessment Categories

Category		Management	Likelihood of cancer
0	Need additional imaging or prior examinations	Recall for additional imaging and/or await prior examinations	n/a
1	Negative	Routine screening	Essentially 0%
2	Benign	Routine screening	Essentially 0%
3	Probably Benign	Short interval-follow-up (6 month) or continued	>0 % but ≤ 2%
4	Suspicious	Tissue diagnosis	4a. low suspicion for malignancy (>2% to ≤ 10%) 4b. moderate suspicion for malignancy (>10% to ≤ 50%) 4c. high suspicion for malignancy (>50% to <95%)
5	Highly suggestive of malignancy	Tissue diagnosis	≥95%
6	Known biopsy-proven	Surgical excision when clinical appropriate	n/a

FNAC (Breast)

C1: Unsatisfactory

C2: Benign

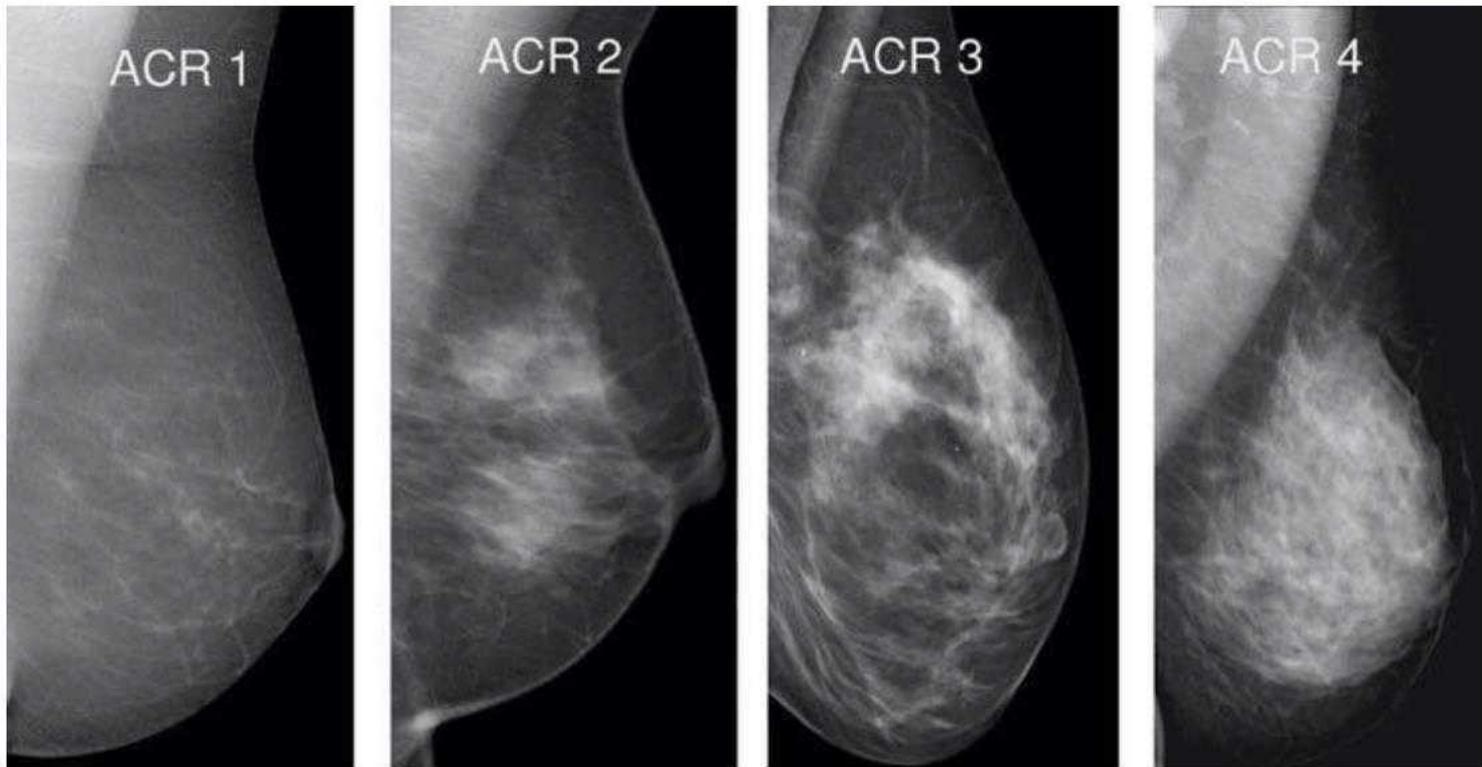
C3: Atypical cells

C4: Suspicious cells

C5: Malignant

ACR classification of breast density

ACR = American College of Radiology



There are four categories of mammographic density :

ACR 1 : almost entirely fatty.

ACR 2 : scattered areas of fibroglandular density.

ACR 3 : heterogeneously dense.

ACR 4 : extremely dense.

Metrics	Results	ACR type	Density percentage value (%)	Sensitivity (%)	Specificity (%)	Accuracy (%)
TP	97	1 (fatty breast)	<10	90.65	73.59	85.00
FP	14					
TN	39					
FN	10					
TP	66	2 (Fibro-glandular dense)	25-50	61.68	90.57	71.25
FP	5					
TN	48					
FN	41					
TP	22	3 (Heterogeneous dense)	50-75	20.56	96.23	45.63
FP	2					
TN	51					
FN	85					
TP	6	4 (Extremely dense)	75>	5.61	98.11	36.25
FP	1					
TN	52					
FN	101					

TNM Class

Criteria

T0 No evidence of primary tumor

T1a Carcinoma in situ

T1 < or = 2 cm

T1m1c microinvasion .1 cm or less

T1a >.1 to .5 cm

T1b >.5 to 1 cm

T1c >1 to 2 cm

T2 >2 to 5 cm

T3 >5cm

T4 Any size tumor with direct extension to : a) Chest wall or b) skin

T4a Chest wall, not including pectoralis muscle

T4b Skin edema, ulceration, satellite skin nodule

T4c 4a and 4b

T4d Inflammatory carcinoma

TNM Class	Criteria
Nx	Regional lymph nodes cannot be removed
N0	No regional lymph node metastasis
N1	<input type="checkbox"/> Metastasis to movable ipsilateral axillary lymph nodes <input type="checkbox"/> 1–3 ALN
N2	<input type="checkbox"/> Metastases in ipsilateral axillary lymph nodes fixed or matted (N2a) or met. only in clinically apparent ipsilateral mammary nodes without clinically evident axillary lymph nodes. (N2b) <input type="checkbox"/> 4–9 ALN
N3	<input type="checkbox"/> Metastases in ipsilateral axillary or infraclavicular lymph nodes (N3a) or clinically apparent ipsilateral internal mammary lymph nodes (N3b) or ipsilateral supraclavicular lymph nodes (N3c) <input type="checkbox"/> 10 or more ALN
MX	Distant metastasis cannot be assessed
M0	No distant metastasis
M1	Distant metastasis

Q1: What is the finding? Male breast nipple changes

Q2: Most common gene mutation associated with male breast cancer? BRCA 2



Q: A nipple biopsy for a female patient shows large cells with a clear cytoplasm, high grade nuclei and prominent nucleoli:

Q1: What is your Dx?

- Paget disease of the breast/nipple (PDB)

Q2: Mention 2 immuno-histochemical tests to differentiate it from melanoma?

- 1) CEA (pos. in PDB)
- 2) Protein S100 (neg. in PDB)



Q1: What is the Dx?

- Breast mastitis, Abscess

Q2: MCC?

- S. Aureus

Q3: Mx?

- Abx
- Incision & Drainage



**Q: 50 yo female has breast pain,
breast only shows skin redness?**

Q1: What is the Dx?

- Inflammatory breast cancer

Q2: Diagnostic procedure?

- Tissue biopsy

Q3: Mx?

- Mastectomy + Radiotherapy

Q4: What is the modality of Dx?

- Triple assessment

- Mammogram + US

**Q5: According to TNM stage system
the T stage is?**

- T4d



Q1: What is the pathology?

- Carcinoma en cuirasse

Q2: What is its TMN?

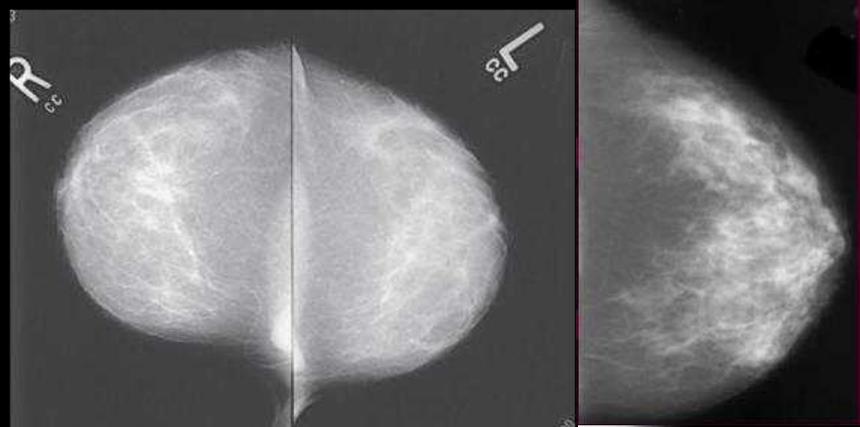
- T4



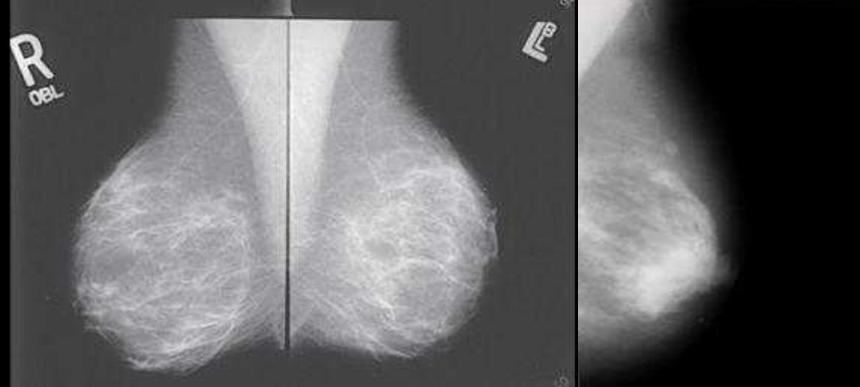
Q: Name the following views for mammogram:

- Craniocaudal (CC)
- Mediolateral Oblique (MLO)

Craniocaudal (CC)



Mediolateral oblique (MLO)



Q1: Name the study?

- Mammogram

Q2: Mention 2 abnormalities?

- Mass with irregular border and calcification

Q3: What is the Dx?

- Breast Ca

Q4: How to confirm your Dx?

- Biopsy



Q1: What is this view?

- Mediolateral oblique

Q2: What is this structure (arrow)?

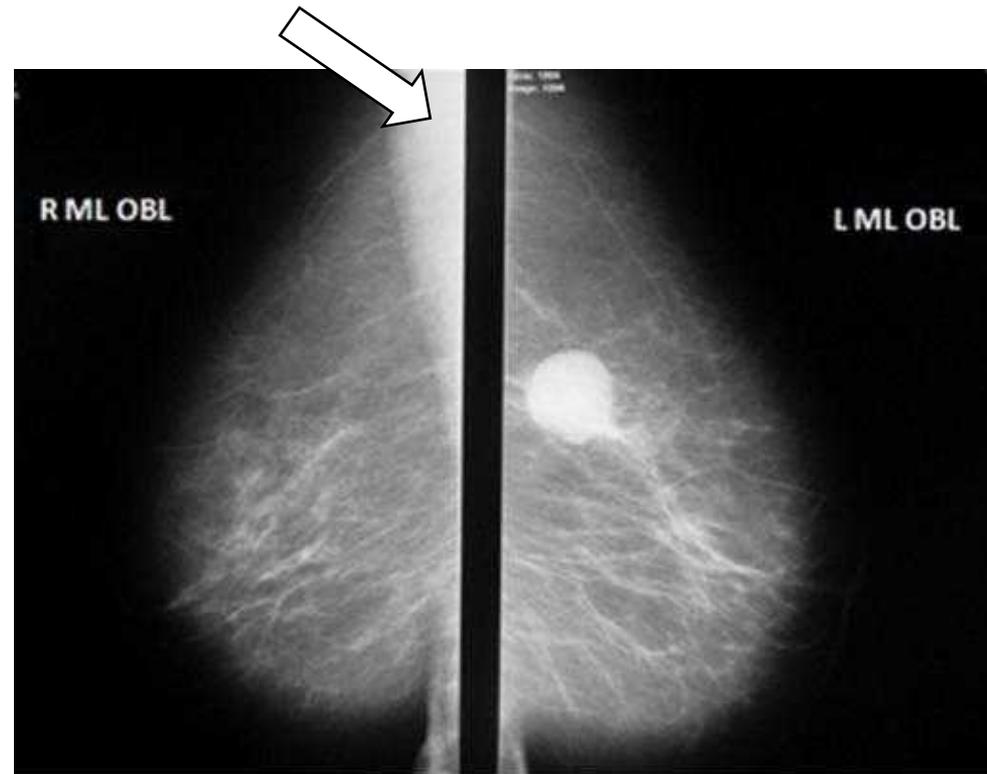
- Pectoralis major muscle

Q3: What are the malignant changes seen on mammograms? Mention 3?

1) Calcifications

2) Speculations

3) Mass with greater density than normal tissue



Q: A 23-year-old single female presented to the clinic with rapidly growing (9cm) left breast mass over the last 6 months. The mass was irregular, hard and fixed at the time of examination:

Q1: Your Dx?

- Phyllodes tumor

Q2: What is this structure (arrow)?

- Pectoralis major muscle

Q3: if it is malignant, what is the common route of METS?

- Hematogenous

Q4: The mc site of METS?

- Lungs



Q: Female with ACR of 4 and BIRAD 0:

Q1: What is the % of breast density?

- >75%

Q2: What to do next?

- Birads score: requires further investigations

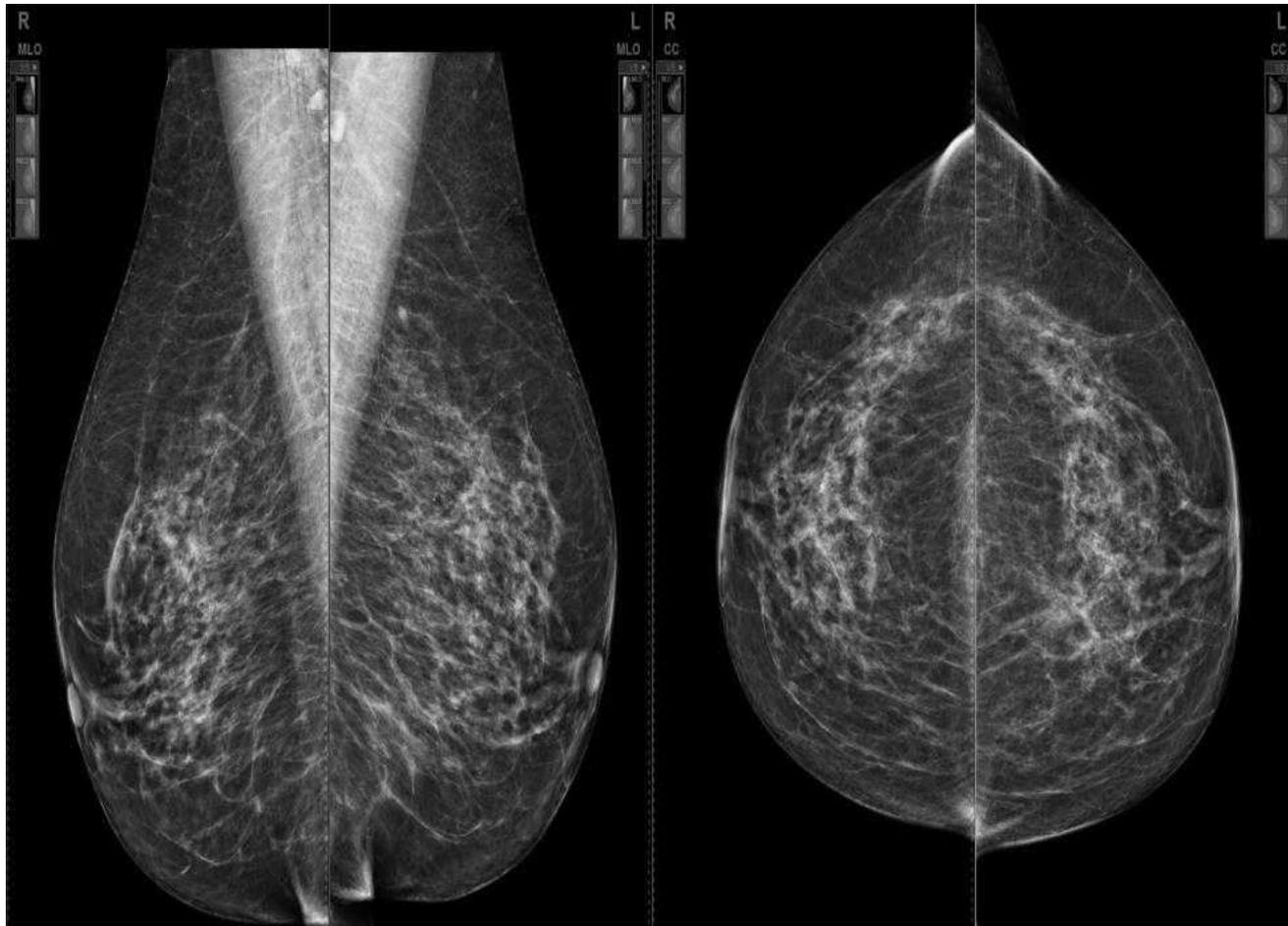
Q: Breast with Birad 2:

Q1: What is the next step in Mx?

- Routine screening

Q2: What is the view in B?

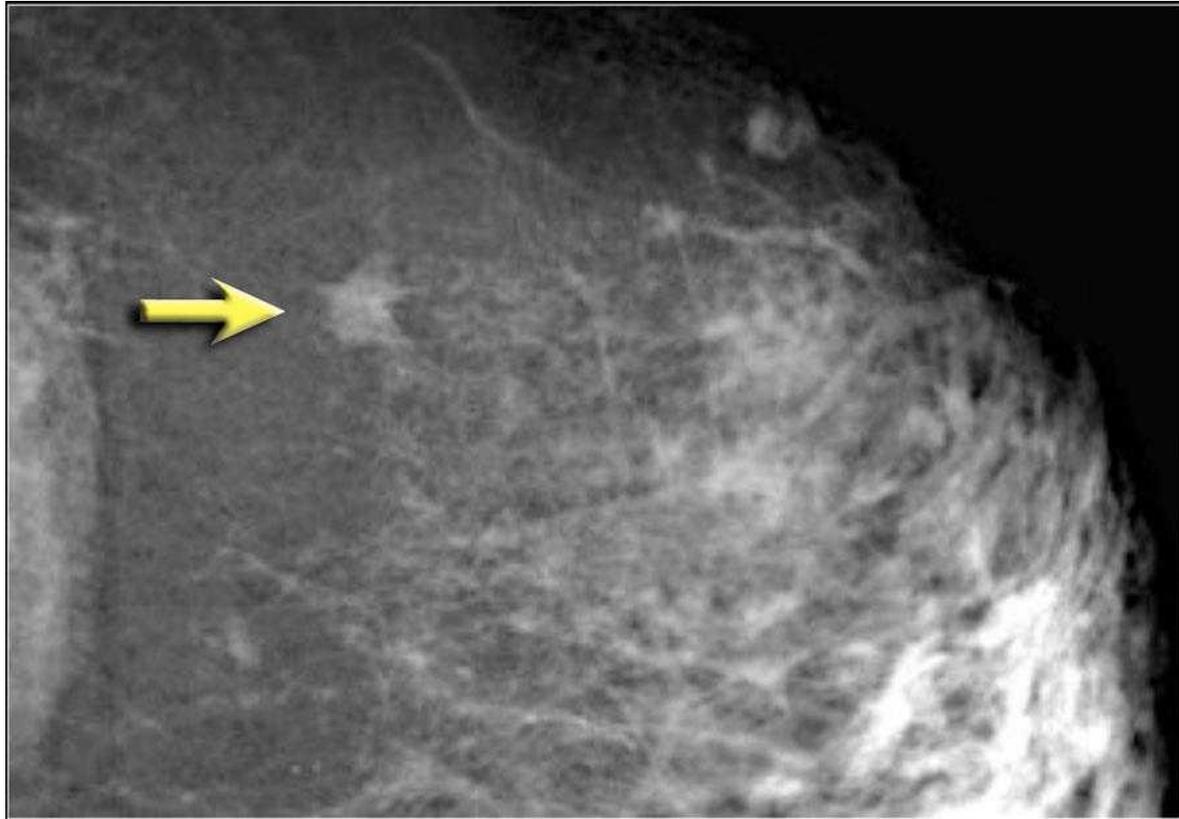
- Mediolateral oblique view



Q: A 37-year-old female presented with right breast pain for the last 3 months. A breast ultrasound showed these findings consistent with BIRAD 4c.

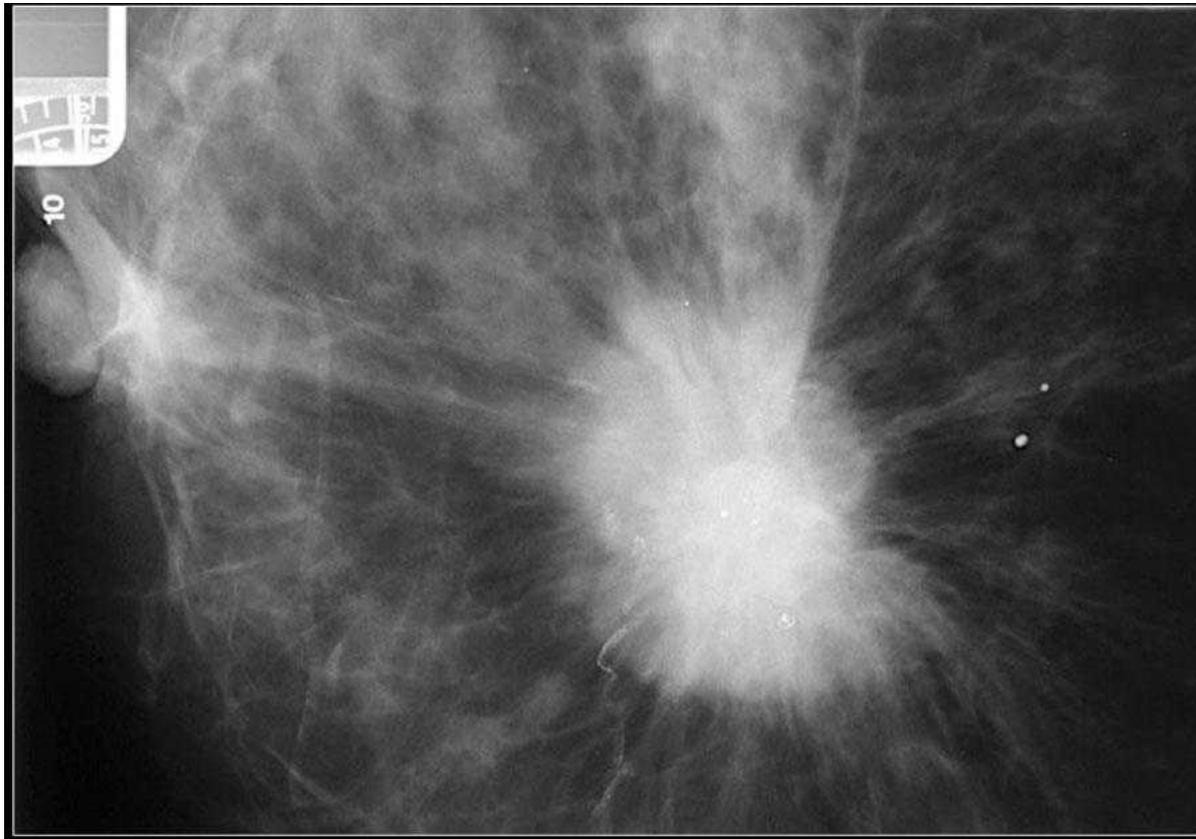
Q1: The likelihood of malignancy is: 50-90%

Q2: The clinical T stage “if a diagnosis of invasive carcinoma is proved” is: T4



Q: A 40-years old married female presented with a right breast mass for 1-year duration. The patient had a history of a right breast mass excision 3 years ago. Physical exam showed a 4cm hard right breast mass which is fixed to the chest wall & the skin. Mammogram and ultrasound were consistent with BIRADS 5.

- 1. Based on the TNM, the clinical T stage for this patient is? T4c**
- 2. The likelihood of malignancy based on imaging findings is? >95%**



****T4a : to chest wall only****

****T4b : to skin only****

****T4c : to both****

****T4d: Inflammatory breast cancer****

Q1: What is the pathology?

- Infiltrative ductal carcinoma

Q2: What is its TMN?

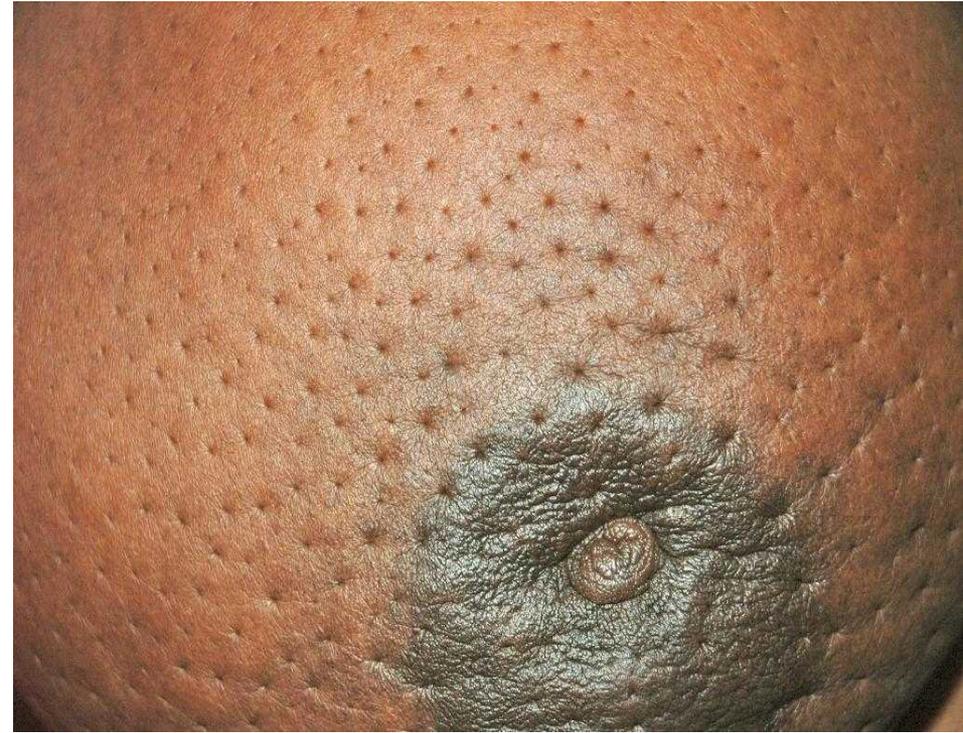
- Stage T3

Q3: What is the sign?

- Peau'd orange and nipple retraction, skin dimpling

Q4: Give 2 DDX?

- 1) Invasive ductal carcinoma
- 2) Inflammatory breast cancer



Q5: What is the cause of this?

- Invasion of lymphatics, causing lymph nodes obstruction

Q: A pt came complaining of a tender cord like subcutaneous structure, pain, swelling and redness of the left breast:

Q1: Dx? Mondor's Disease (Superficial Thrombophlebitis)

Q2: What is the Mx?

- NSAIDS

- Usually benign and self-limiting condition



Q1: What is the name of this study?

- Mammogram

Q2: Mention 2 signs you see.

- 1) Speculated mass
- 2) Microcalcifications

Q3: What is the Dx?

- Infiltrative Ductal Carcinoma



Q1: What is the pathology?

- Phyllodes tumor (Brodie's)

Q2: What is the Mx?

- Wide local excision

Q3: What is the like hood (%) of this tumor to be benign?

- 90% benign



Q: Female with mobile, mouse like lump in one breast:

Q1: What is the Dx?

- Fibroadenoma

Q2: What is the stage according to FNA?

- C2



C1 = unsatisfactory.

C2 = cells present all benign; no suspicious features.

C3 = cells suspicious but probably benign.

C4 = cells suspicious but probably malignant.

C5 = Definitely malignant.

Q: a 35 yo female patient:

Q1: What is the Dx?

- Breast Cyst

Q2: Name the sign (black arrow)?

- Acoustic enhancement

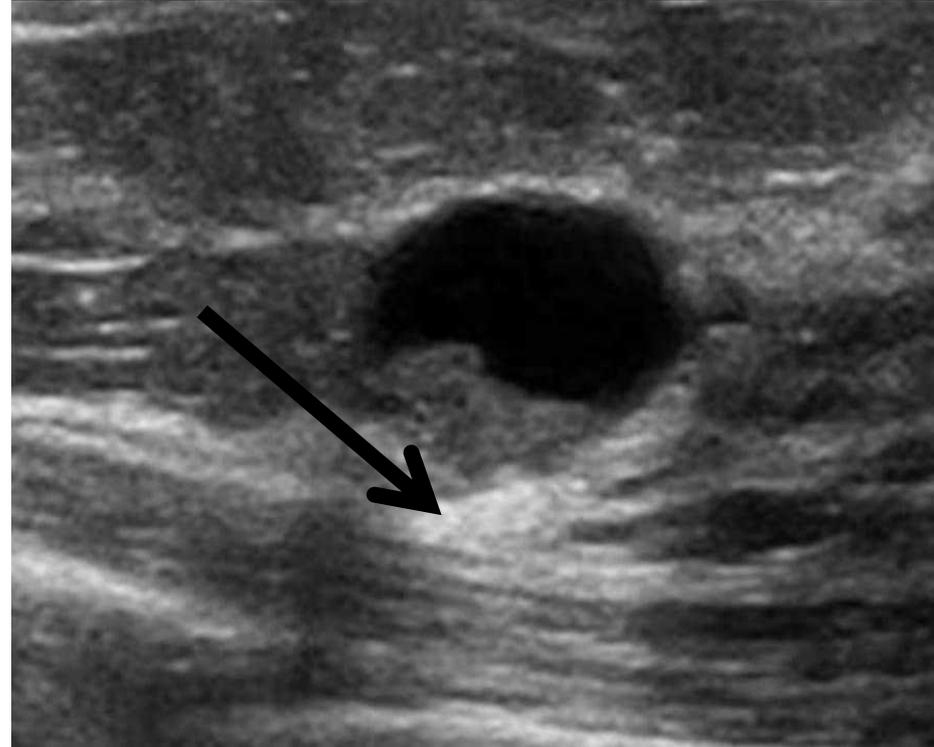
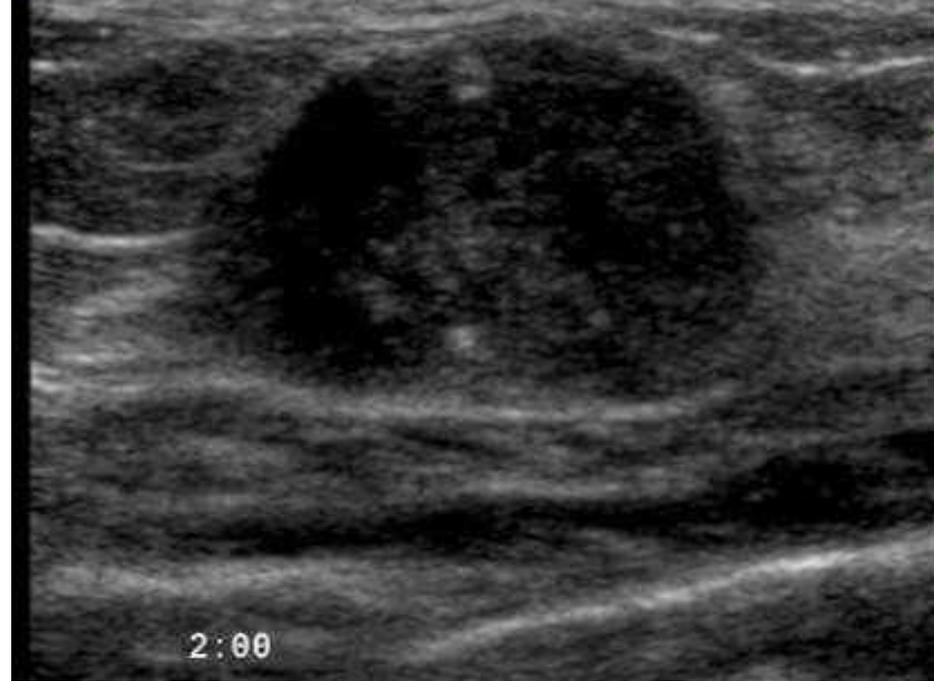
Q3: What are the indications for a biopsy in this female?

1) Bloody aspiration

2) Failure to completely resolve

3) Recurrence after 2nd aspiration

4) Atypical cells



Q1: Describe the discharge?

- Uniductal Bloody Discharge

Q2: What is the pathology?

- Intraductal papilloma

Q3: Give a DDX?

- Intraductal papilloma
 - Duct Ectasia
- Ductal invasive carcinoma

Q3: 2 imaging studies?

- 1) Ductogram, Ductoscope
- 2) Mammogram, US

Q4: What is the risk of malignancy of this lesion?

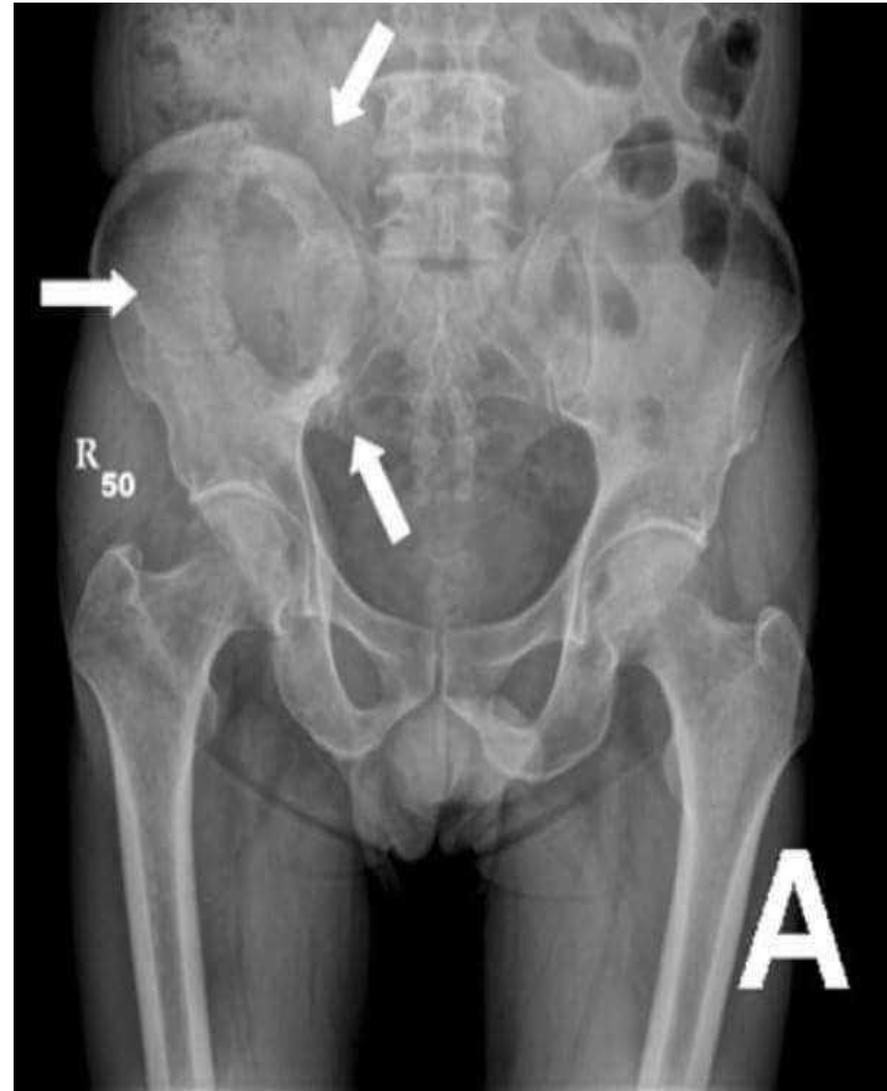
- 15%



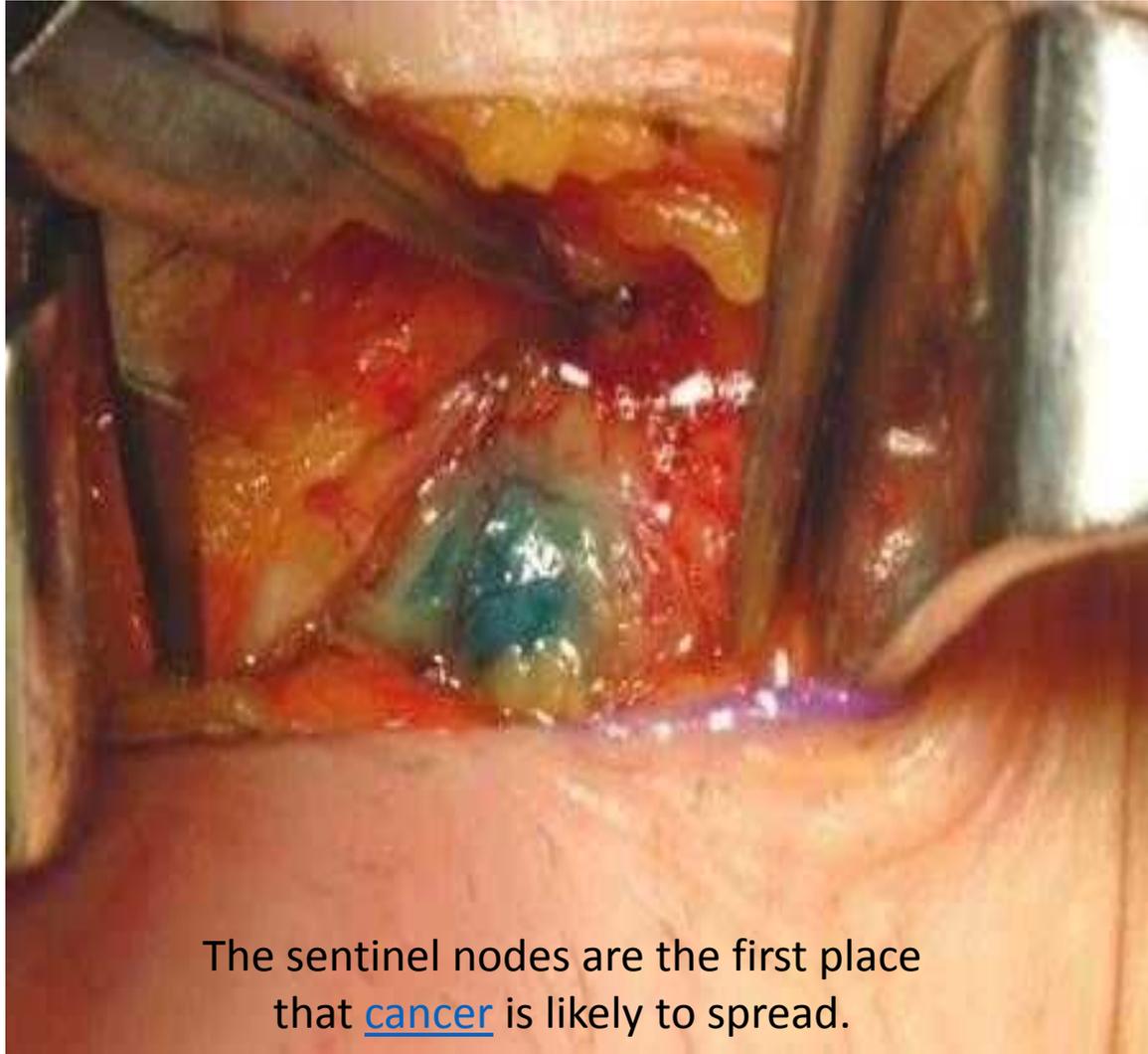
Q: What is the mechanism that the breast cancer causes hypercalcemia?

- Parathyroid hormone - related protein
(not due to osteoclastic METS)

** Note: The main pathogenesis of hypercalcemia in malignancy is increased osteoclastic bone resorption, which can occur with or without bone metastases. The enhanced bone resorption is mainly secondary to PTH-related protein



Sentinel Lymph Node



The sentinel nodes are the first place that [cancer](#) is likely to spread.

Q1: What are the skin changes indicative of breast cancer in this image?

Nipple retraction
Peau dé orange



Q2: What is this procedure?

Core needle biopsy
(true-cut biopsy)





Pediatric Surgery

Q1: What is the Dx? Prune belly syndrome

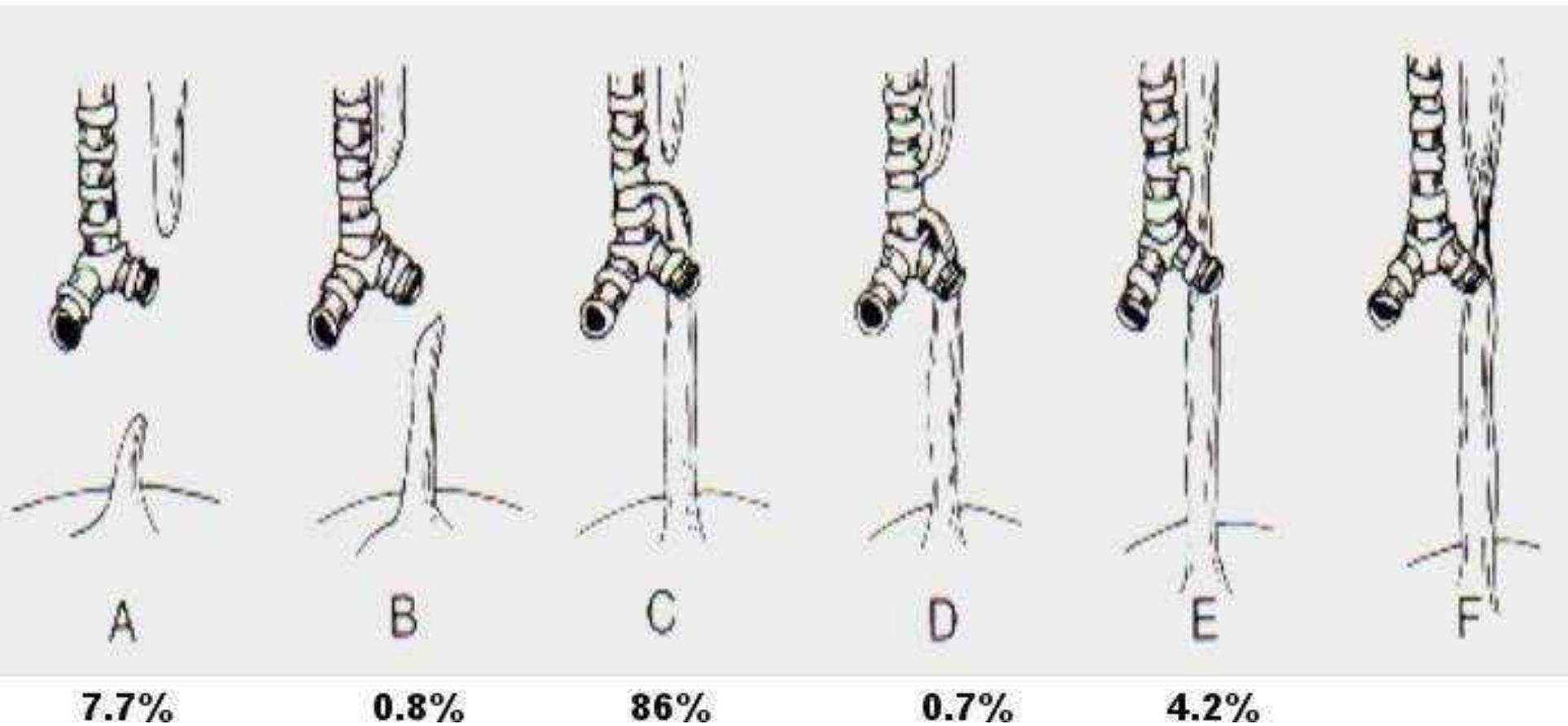
Q2: Mention 2 associated anomalies?

- 1) Undescended testicles
- 2) Urinary tract abnormality such as unusually large ureters, distended bladder, Vesicoureteral reflux, frequent UTI's
- 3) VSD
- 4) Malrotation of the gut
- 5) Club foot

- thin flaccid abdominal wall.
 - AKA eagle Barrett syndrome.
- absent abdominal wall musculature.
- dilation of bladder, ureter and renal collecting system.
- **95% in Males.**



Esophageal atresia and tracheoesophageal fistula



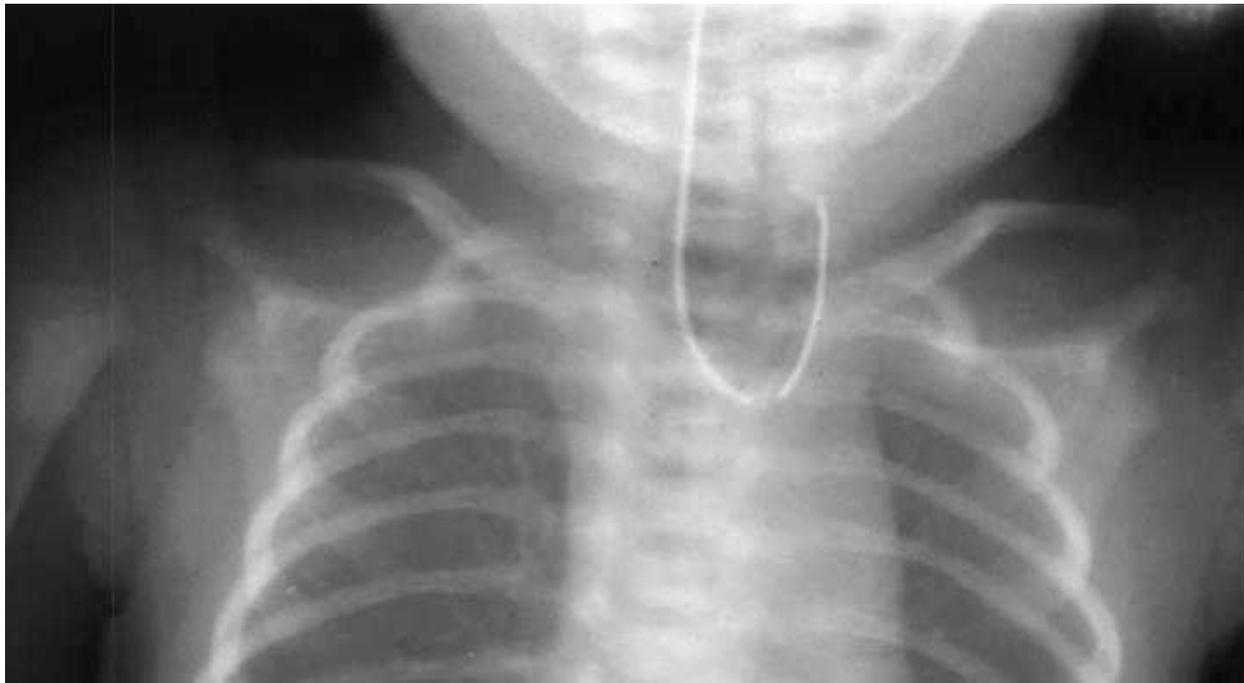
Q: New born x-ray, cyanosis and distressed:

Q1: What is your Dx?

- Tracheoesophageal fistula (because of the cyanosis)

Q2: Characteristic sign?

- Failure to pass the nasogastric tube



Q: A new-born baby had inability to swallow milk and frothy mouth secretions, this is his x-ray.

Q1: Mention two radiological signs?
inability to pass nasogastric tube/air in the stomach.

Q2: What is the diagnosis?
Esophageal atresia with tracheo-esophageal fistula.



	Omphalocele	Gastroschisis
Incidence	1:6,000-10,000	1:20,000-30,000
Delivery	Vaginal or CS	CS
Covering Sac	Present	Absent
Size of Defect	Small or large	Small
Cord Location	Onto the sac	On abdominal wall
Bowel	Normal	Edematous, matted

	Omphalocele	Gastroschisis
Other Organs	Liver often out	Rare
Prematurity	10-20%	50-60%
IUGR	Less common	Common
NEC	If sac is ruptured	18%
Associated Anomalies	>50%	10-15%
Treatment	Often primary	Often staged
Prognosis	20%-70%	70-90%

Q1: What is the Dx? Gastroschisis

Q2: Name the procedure? Silo

Q3: The prognosis depends on?

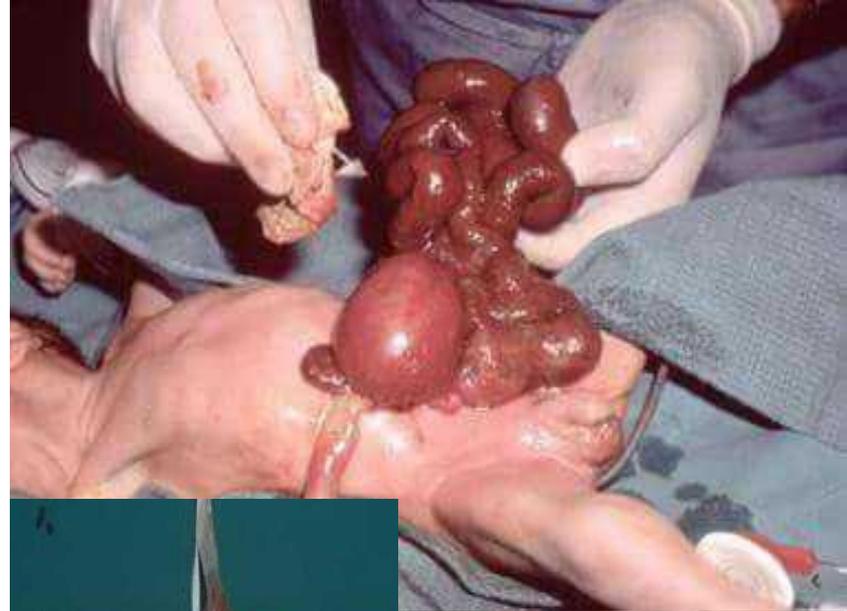
- Bowel status

Q4: The indication of this procedure?

- if the bowel is inflamed and primary closure is not possible

- to prevent dehydration, hypothermia, contamination

- **location : lateral to the umbilicus (to the right).**
 - defect size : 2-4 cm.
 - no sac.
 - cord is normally inserted into umbilicus.
- **contents : only bowel (edematous and matted).**
 - GIT function : **prolonged ileus.**
 - associated anomalies : infrequent.



Q1: What is the Dx?

- Omphalocele

Q2: How is the GI function?

- Normal

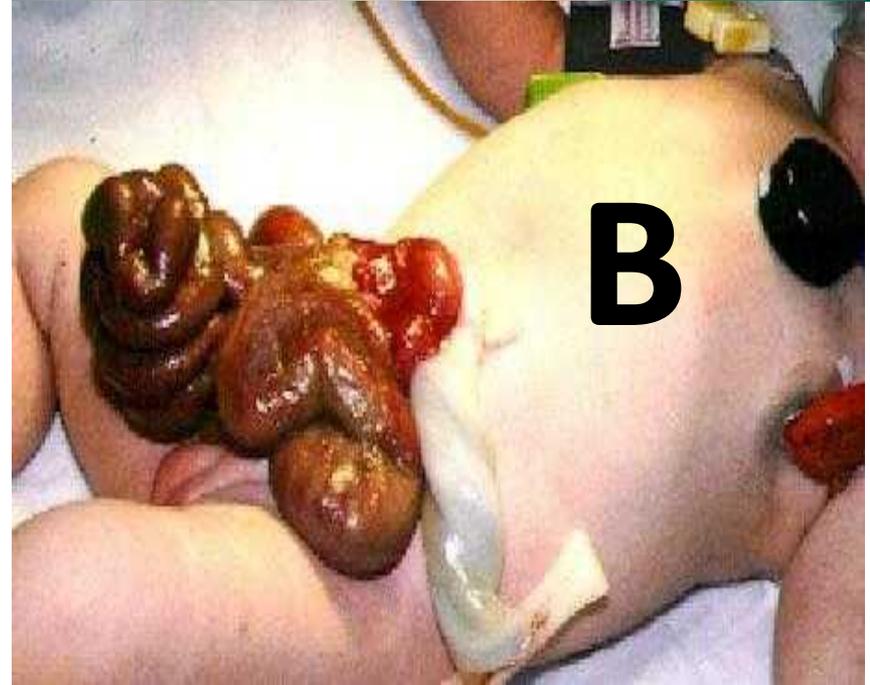


- location : umbilical ring.
- The protrusion is covered by peritoneum.
 - defect size : >10 cm.
- cord : inserted into the sac.
 - GIT function is normal.
 - contents : bowel +/- liver.
 - malrotation : present.
- associated anomalies : common (30-70 %).

Q1: What is the diagnosis in A,B?

A > Omphalocele

B > Gastroschisis



Q2: Which of these are more associated with congenital anomalies?

- Omphalocele

Q3: What is the 1st aid Mx for both?

- Carefully wrap in saline-soaked pads.
- Support without tension.
 - NG tube.
- Abdominal ultrasound.



Q: Malrotation:

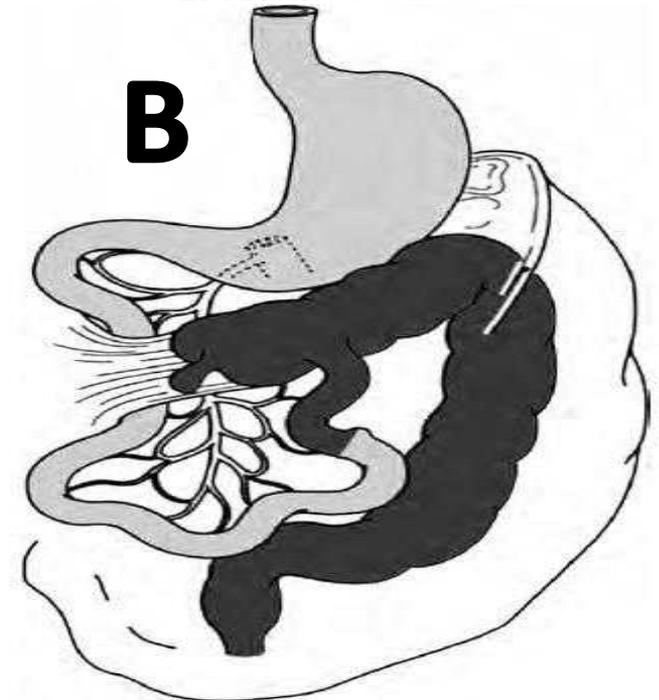
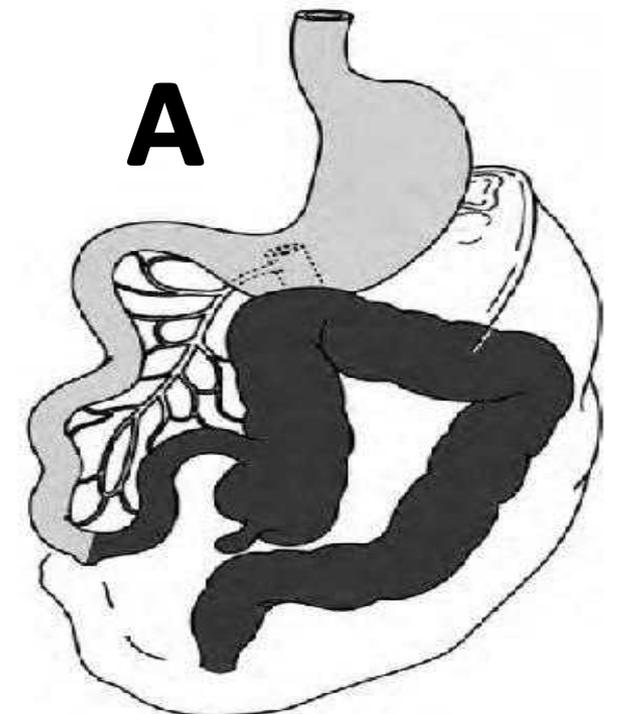
Q1: What's A and B?

A > Non-Rotation

B > Incomplete Rotation

Q2: Which one is the most commonly associated with volvulus?

- B



Q: What is the Dx according to:

A: Preterm baby > Necrotizing enterocolitis (NEC)

B: Full-term baby > Hirschsprung disease



Q1: What is the investigation?

- Abdominal US

Q2: Name of the sign?

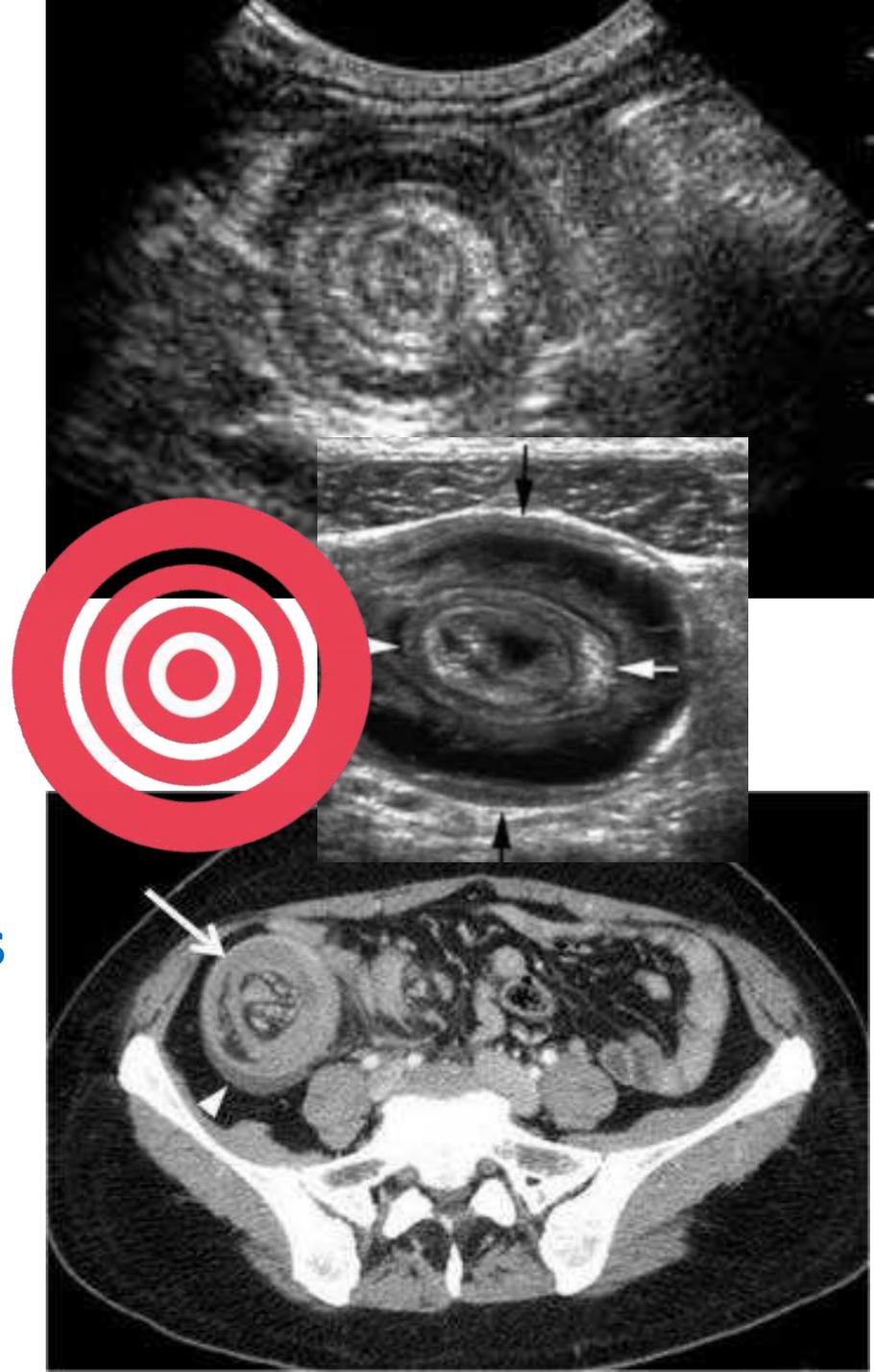
- Target sign

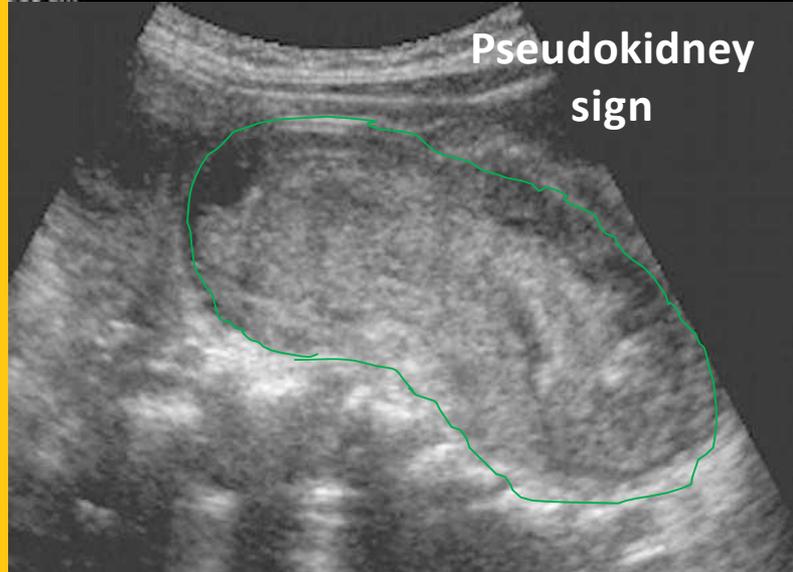
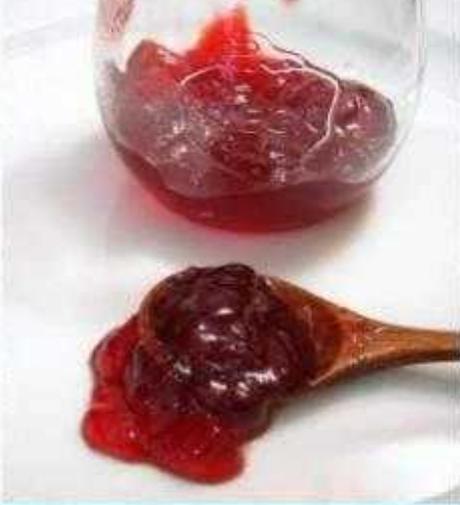
Q3: What is the pathology?

- Intussusception

Q4: How do we treat those patients in uncomplicated cases (stable)?/1st line of Mx?

- Resuscitation, Hydrostatic (pressure) reduction using gas air or barium enema





Red currant jelly

Stool



• INTUSSUSCEPTION •



Q1: What is this?

- Meckel's Diverticulum

Q2: Name 2 complications?

- 1) Intestinal hemorrhage
- 2) Intestinal obstruction
- 3) Diverticulitis

Q3: Mention one common ectopic tissue you can find?

- Gastric and pancreatic tissues



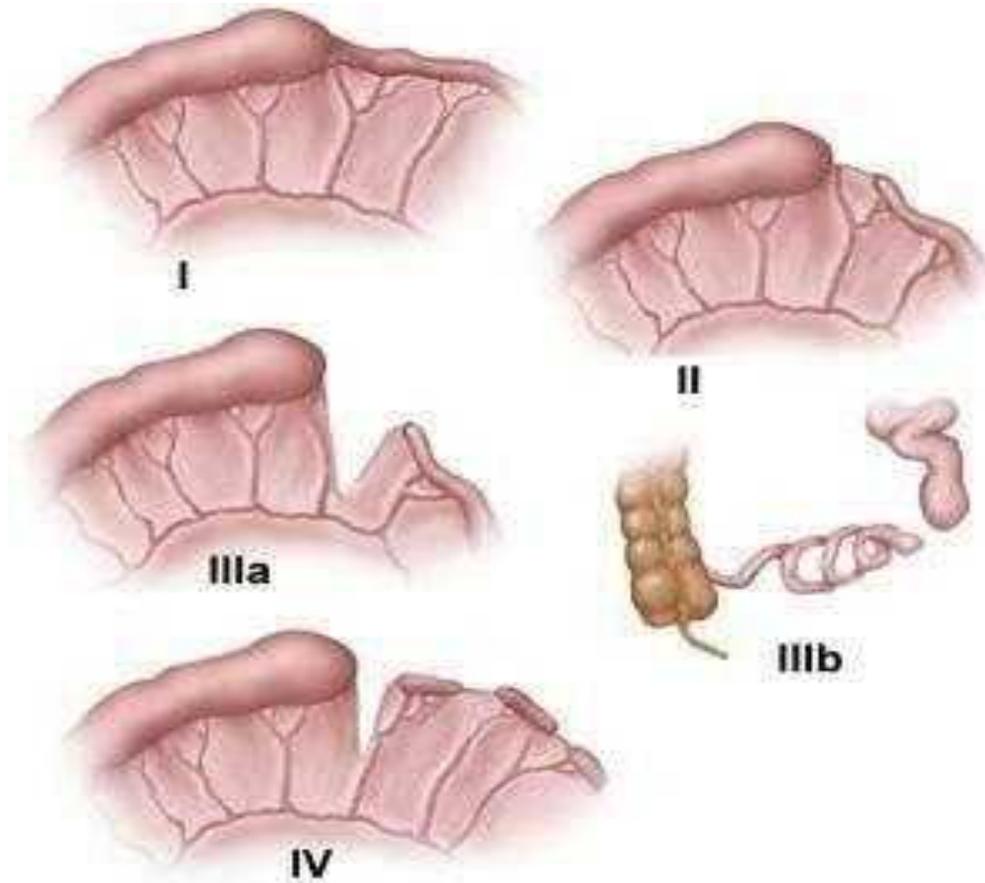
Q4: Is it a true or pseudo-diverticulum?

- True Congenital Diverticulum

-A memory aid is the rule of 2s:
2% (of the population).
2 feet (proximal to the ileocecal valve).
2 inches (in length).
2 types of common ectopic tissue (gastric and pancreatic)
2 years is the most common age at clinical presentation
2:1 male: female ratio



Types of intestinal atresia



Q1: What is the Dx?

Jejunal atresia.

Q2: Age of presentation?

Neonate (till one month)

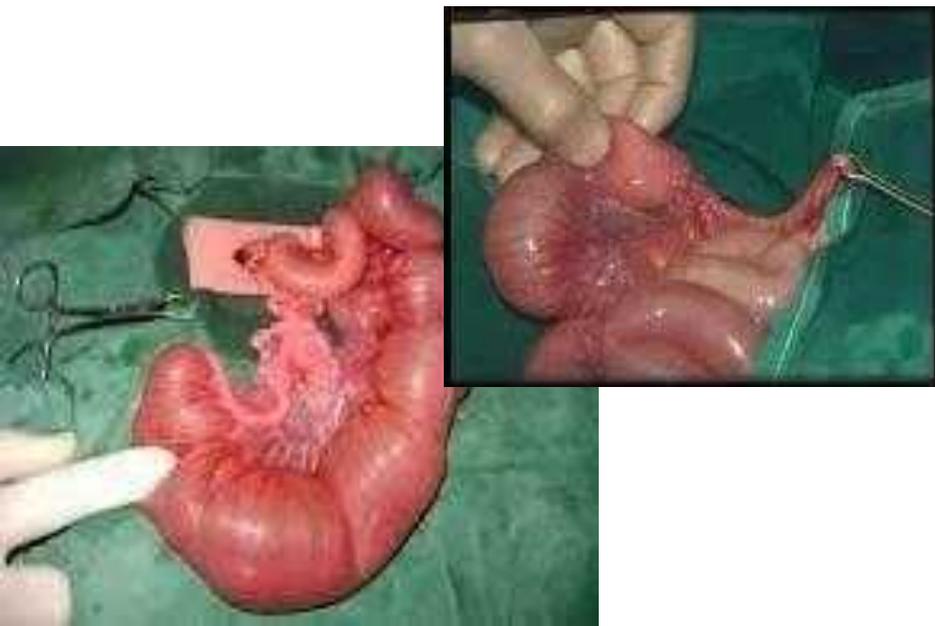
Q3: How would u manage?

Admit to NIC

fluid resuscitation

Antibiotic

NG suction and parental nutrition.



Q: Intra-op image of a baby with symptoms of obstruction.

Q1: Give two findings:

Dilated proximal loop,
collapsed distal loop.

Q2: What is the diagnosis?

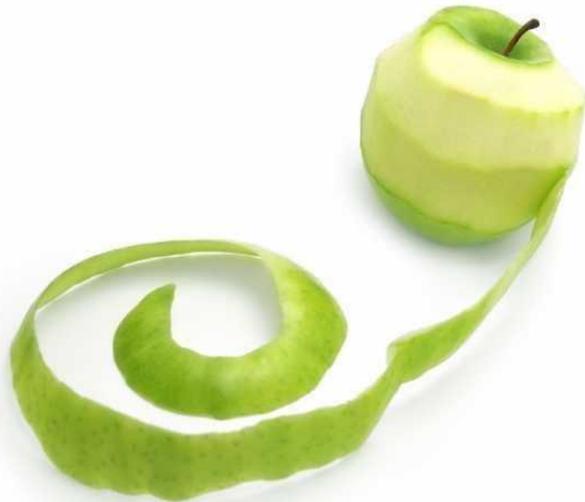
Type 1 intestinal atresia.



- **Apple peel intestinal atresia**
(also type IIIb or **Christmas tree atresia**).

- Due to vascular accident.

- All the intestine is atretic, and forms a loop around the superior mesenteric artery.



Q: A neonate failed to pass meconium, so a barium enema was done and shows this:

Q1: What is the Dx?

- Hirschsprung disease

Q2: What does the arrow indicate?

- Transition zone

Q3: What is the diagnostic test?

- Biopsy
- Full thickness or rectal suction

Q4: Name the radiology study?

- Barium enema



Q1: What is the pathology?

- Right scrotal swelling (Hemi-scrotal swelling)

Q2: Give two benign DDX?

- Inguinal hernia, hydrocele

Q3: What is the name of peritoneal part remain patent?

- Patent processus vaginalis



Q1: What is the Dx?

- Epispadias and Hypospadias

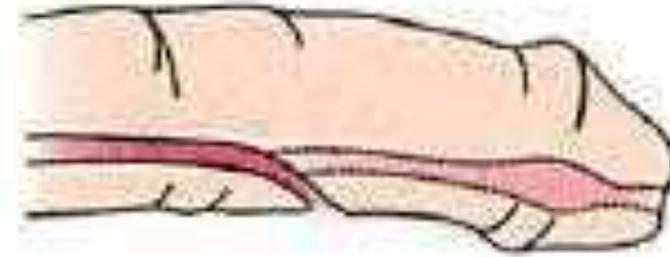
Q2: Mention 2 associated anomalies?

- 1) Bladder extrophy
- 2) Bifid penis
- 3) Rectum prolapse

Q3: Name 2 commonly associated features with this pathology other than the abnormally located urethral meatus:

- 1) Chordee
(downward bending of the penis)
- 2) Hooded appearance of the penis

Hypospadias



Epispadias



Q1: What is the Dx?

- Hypospadias

Q2: What is the classification?

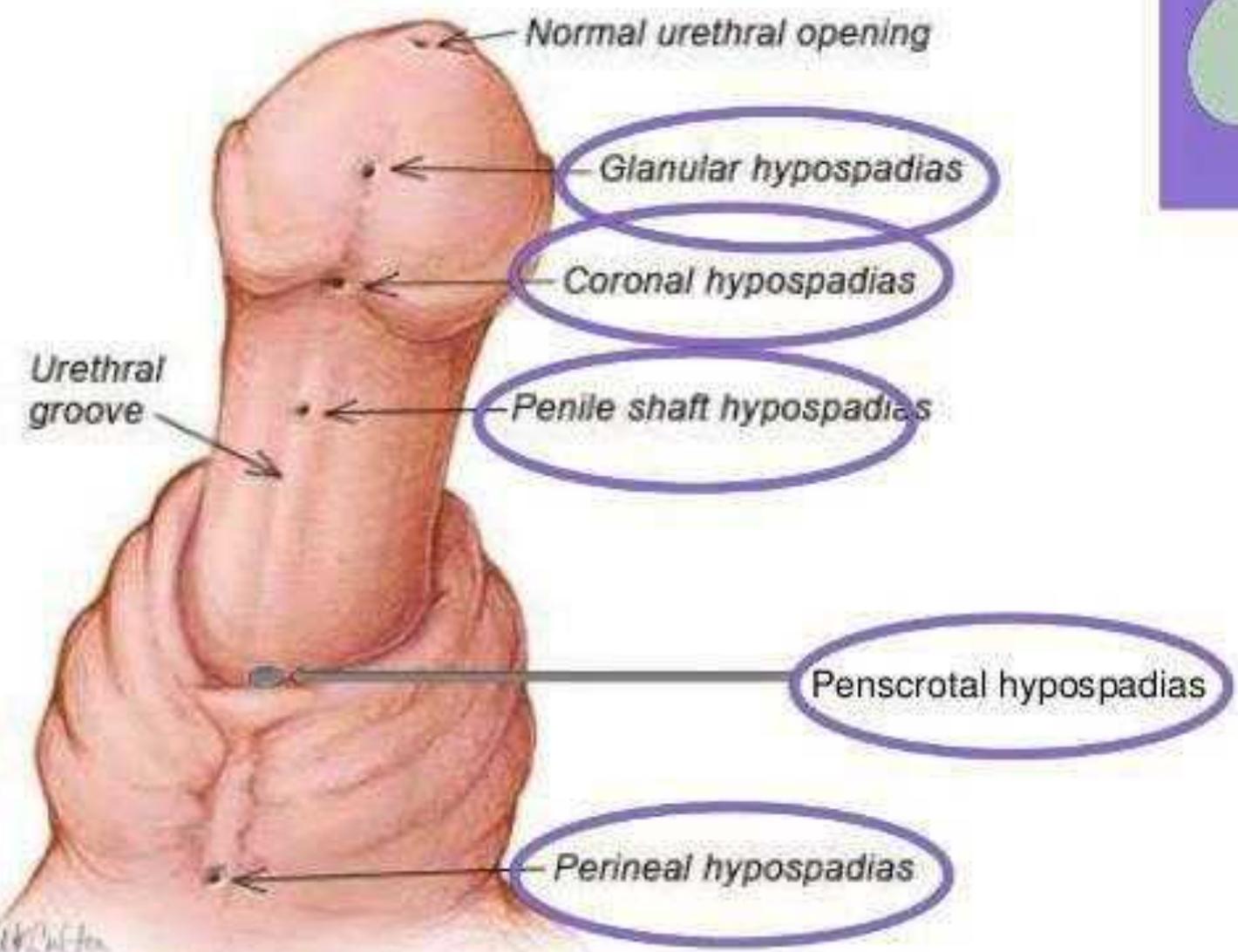
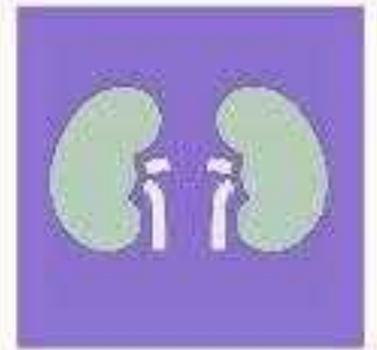
- 1) Anterior (50%)
- 2) Bifid Middle (30%)
- 3) Posterior (20%)

Q3: When is the surgery performed?

6 – 18 months of age



- Glanular (opening on the glans) is the most common.



Q: This is a 5 yo boy.

Q1: Give two clinical findings:

scrotal swelling
transillumination

Q2: What is the Dx?

hydrocele

- Fluid filled sac (fluid in a patent processus vaginalis or in the tunica vaginalis around the testicle).
- Communicating with the peritoneal cavity VS non communicating.
- **In most infants it will resolve in the 1st year.**
- If there is increase in size >> operation
- Any hydrocele appearing after a 1st year must be operated as it will not resolve.



Q1: What is the Dx?

- Testicular torsion

Q2: What is your Mx?

- Orchiectomy

DDx for Acute scrotum:

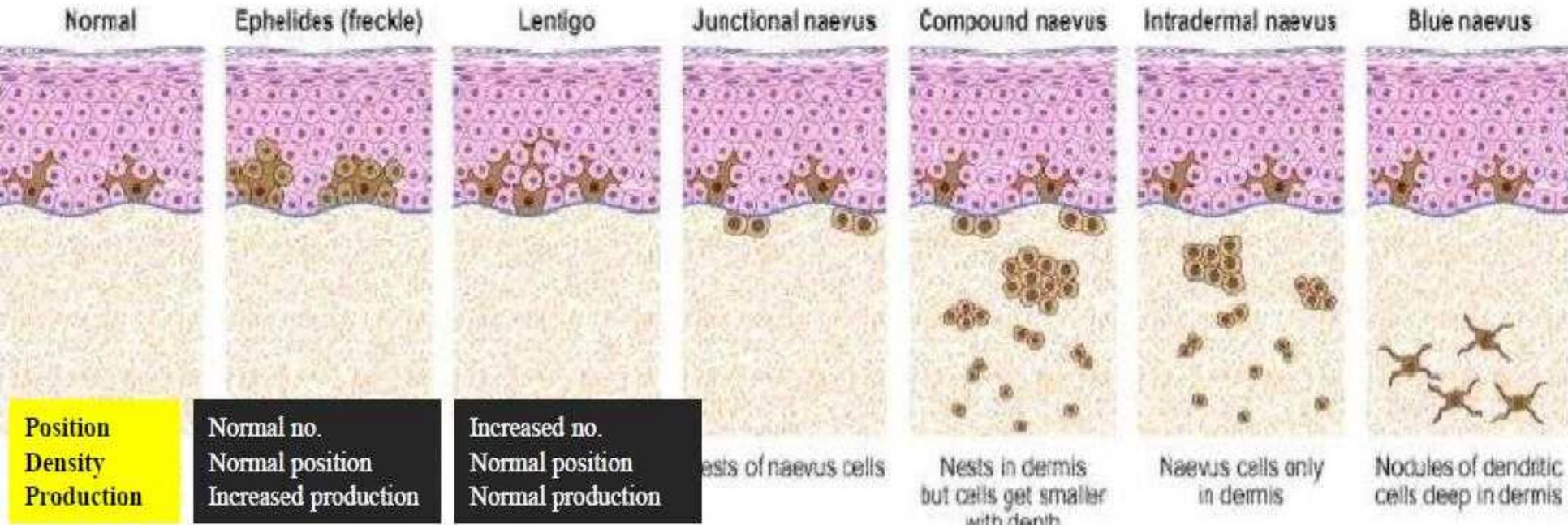
1. Testicular torsion.
2. Torsion of testicular appendages.
3. Epididymorchitis.
4. Scrotal edema.
5. Complicated hernia.





Skin

Mole (Melanocytic nevus): increased no., abnormal clusters, normal or increased production



Q1: Name the Dx?

- Melanoma



Q2: What is the most accurate prognostic factor?

- The Depth

Q3: Increased melanin production with normal number of cells is known to cause?

- Freckles

Q4: Mention 2 staging systems?

1) Clark's level

2) Breslow's thickness



Q: a patient with pain and fever:

Q1: What is the Dx?

- Cellulitis

Q2: What is the micro-organism causing this?

- Group A streptococci (GAS – mc!), Staph. Aureus



Q: a patient post-splenectomy due to RTA:
Q1: What is the micro-organism causing this?
- Meningococcus

Q2: How can you prevent it?
MCV Vaccine

Vaccine should be 14 days BEFORE surgery , and in case of emergency surgery like this case it should be as soon as possible after surgery not 14 days after, others said in elective surgeries, it should be given 14 days before the operation But in emergent surgeries, it should be given at least 14 days post operatively.

**Post-
Splenectomy:**
We Give MCV,
PCV, HiB



Post Splenectomy Vaccination

- **Non-elective**

- Non-elective splenectomy patients should be vaccinated on or after postoperative day 14.
- Asplenic patients should be revaccinated at the appropriate time interval for each vaccine.

- **Elective**

- Elective splenectomy patients should be vaccinated at least 14 days prior to the operation.
- Asplenic or immunocompromised patients (with an intact, but nonfunctional spleen) should be vaccinated as soon as the diagnosis is made.
- Pediatric vaccination should be performed according to the recommended pediatric dosage and vaccine types with special consideration made for children less than 2 years of age.
- When adult vaccination is indicated, the following vaccinations should be administered:
 - ***Streptococcus pneumoniae***
 - Polyvalent pneumococcal vaccine (Pneumovax 23)
 - ***Haemophilus influenzae type B***
 - *Haemophilus influenzae b* vaccine (HibTITER)
 - ***Neisseria meningitidis***
 - Age 16-55: Meningococcal (groups A, C, Y, W-135) polysaccharide diphtheria toxoid conjugate vaccine (Menactra)
 - Age >55: Meningococcal polysaccharide vaccine (Menomune-A/C/Y/W-135)

Vaccine	Dose	Route	Revaccination
Polyvalent pneumococcal	0.5 mL	SC*	Every 6 years
Quadravalent meningococcal/diphtheria conjugate	0.5 mL	IM upper deltoid	Every 3-5 years [†]
Quadravalent meningococcal polysaccharide	0.5 mL	SC*	Every 3-5 years
Haemophilus b conjugate	0.5 mL	IM*	None

*Administered in the deltoid or lateral thigh region.

[†]Contact the manufacturer for the latest recommendations prior to revaccination.

Q: Lesion on the face <1cm:

Q1: What is the Dx?

- Basal cell carcinoma (BCC)

Q2: What is the MCC?

- Long exposure to sunlight



Q3: Mention 2 ways of Mx?

A) Non surgical:

(topical immunotherapy, intralesional interferon INJ, photodynamic)

B) Surgical (Excisional or destructive):

- Destructive: cautery, curettage, cryotherapy, CO laser ablation

- Excisional: Moh's micrographic surgery (MMS), Wide local excision

Q4: What is the safety margin?

- 4-10mm

Q5: Write an alternative Mx?

- Moh's micrographic surgery (MMS)



Q6: Name 2 complications?

- METS, Ulceration

Q7: Potential METS rate:

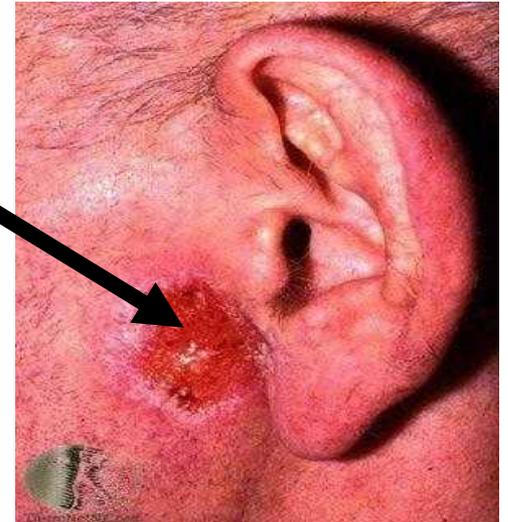
- <0.55 (from google)

Q8: Do you expect to find enlarged LN?

- No (local disease)

Q9: What does the arrow indicate?

Rodent ulcer (complication of BCC)



- Arising in the germinating basal cell layer of epithelial cells.
- **Nodular** (ulceration, **telangiectasia**, pearls).
- **Morphea** (many sites at the same time/ more aggressive than the nodular type).
- Slow growing.
- Local (rare risk of metastasis).

Q: What is the type of cancer seen in this histology (biopsy taken from the nose tip):

- Basal Cell Carcinoma



Q: A 75 year old male farmer, heavy smoker presented with this lesion.

Q1: What is the most probable Dx?

Squamous cell carcinoma.

Q2: What is the LN of this area?

Submental and submandibular??

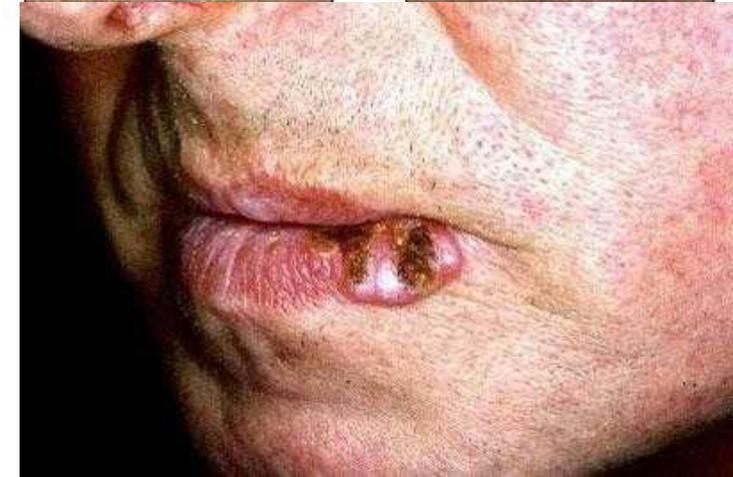
Q3: What will you do to confirm Dx?

Biopsy for histopathology.



Basal cell carcinoma

Squamous cell carcinoma



- Arising from epidermal cells.
- Risk factors: sun exposure/pale skin/ arsenic/ xeroderma pigmentosum/ immunosuppression.
- **Actinic keratosis : the precursor skin lesion.**
- Raised, slightly pigmented skin lesion/ ulceration/ exudate/ itching.
- Dx: excisional biopsy for small lesion/ incisional biopsy for large lesions.
- Most common sites : head, neck and hand.
- **Involves the lower lip and BCC involves the upper lip or above this level.**

Q1: Name the lesion?

- Onion cluster cells

Q2: Mention the Dx?

- SCC (Squamous cell carcinoma)



Q: Two patients came to ER complaining of neck swelling:

Q1: What is the pathology?

- Carbuncle

Q2: MCC?

- Staphylococcus Aureus

Q3: Mx?

- Incision, drainage and antibiotics



Carbuncle is an abscess larger than furuncle, usually with one or more openings draining pus onto the skin



Q1: Identify this picture:

Furuncle

Q2: Mention one risk factor?

DM

Q3: it is more common in?

In the back of the neck

Q4: Name 1 treatment?

Incision and drainage plus
antibiotics



Q1: Dx of picture (1)? Keratoacanthoma

Q2: Dx of picture (2)? Actinic Keratosis

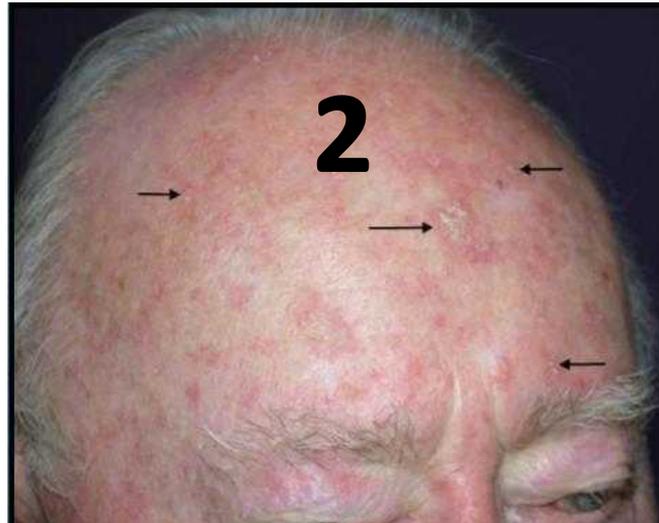
Q3: Dx of picture (3)? Seborrhoeic Keratosis

Q4: Dx of picture (4)? Necrobiosis Lipodica

Q5: Which doesn't have pre-malignant potency?

3

Q6: Picture 2 can convert to? SCC

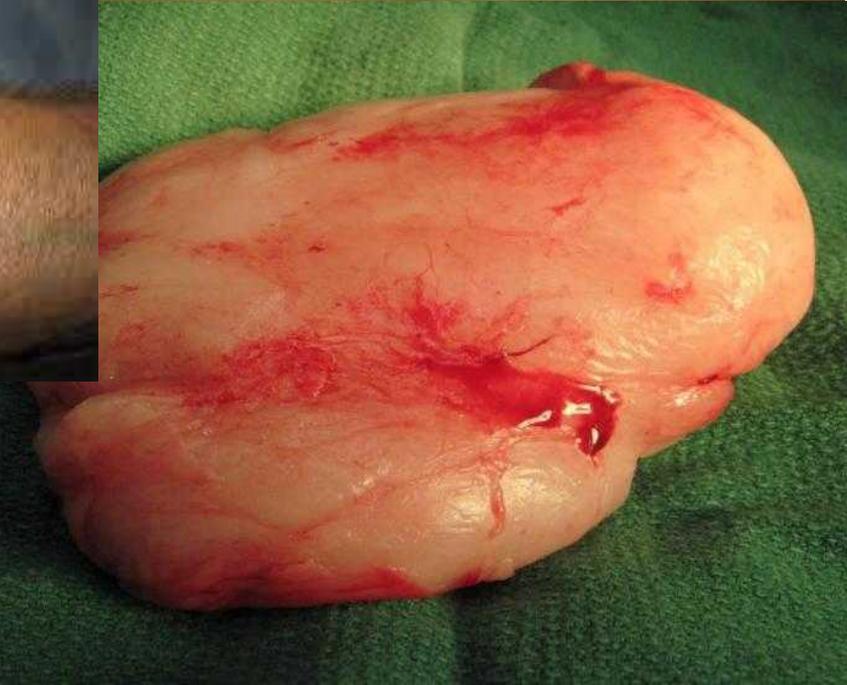


Q1: What is this?

- Lipoma

Q2: What is the risk of wound infection after removal (% of wound infection)?

- 1-3% (clean wound)



Q: Give 2 DDx of a scalp lump?

- 1) Sebaceous cyst
- 2) Epidermoid cyst



Q1: Describe what you see?

- 1) Café au lait macules
- 2) Neurofibromas

Q2: What is your Dx?

- Neurofibromatosis

Q3: Mention type of inheritance?

- Autosomal Dominant



Q1: Name the Dx?

- Keloid

Q2: Name 2 RF?

- 1) Dark skin
- 2) FHx

Q3: Name two characteristics?

- 1) Extend beyond borders of original wound
- 2) More common in darker skin
- 3) Require years to develop
- 4) Thick collagen



Keloid Scar



Hypertrophic Scar



Hypertrophic scar	Keloid scar
Improves with time (2 years)	No improvement with time
No genetic predisposition	Genetic predisposition
Less collagen	More collagen
Less cytokines	More cytokines
fibers parallel to the dermis	Fibers random in orientation
Remains within the borders of the original scar	Extends beyond the original scar margins
Regress spontaneously or by medication	

Treatment :

- Surgery (Z- plasty, W- plasty) / artificial skin/ steroids/ pressure therapy/ topical silicon/ low dose radiation/ laser (CO2 and argon)/ calcium channel blockers/ interferon.

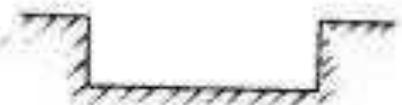
Inspection

- Edge: five types:-
 - *Sloping edge* e.g. healing ulcer
 - *Punched out edge* e.g. Gummatous ulcer, deep trophic ulcer
 - *Undermined edge* e.g. tuberculous ulcer-destroy subcutaneous faster the skin
 - *Raised edge* e.g. Rodent ulcer
 - *Rolled out (everted)*- e.g. Squamous Cell Carcinoma

Sloping
(a healing ulcer)



Punched-out
(syphilitic, trophic)



Undermined
(tuberculous)



Rolled
(basal cell carcinoma)



Everted
(squamous cell carcinoma)



Figure 1.15 The varieties of ulcer edge.



Q1: Name the Dx?

- DM/Peripheral arterial disease

Q2: Causes?

- Prolonged pressure
- Uncontrolled long standing DM



Neurotrophic Ulcers:

punched-out appearance
painless.

Muscle atrophy may be noted.

Q1: What is the most common etiology of this ulcer.

- Neuropathic Diabetic Ulcer

Q2: What is the most important step to accelerate healing?

- Diabetic control, Decrease pressure at the area, Try to prevent infection and increase perfusion to the area



Q: What is the name of the Mx done to this patient?

- Split thickness skin graft



Burns

A photograph of a large fire at night. The fire is intense, with bright orange and yellow flames and thick black smoke rising from a structure. In the foreground, four firefighters are silhouetted against the bright light of the fire. They are wearing helmets and gear, and appear to be observing the fire. The scene is dramatic and highlights the danger of burns.

1st, 2nd, and 3rd Degree Burns

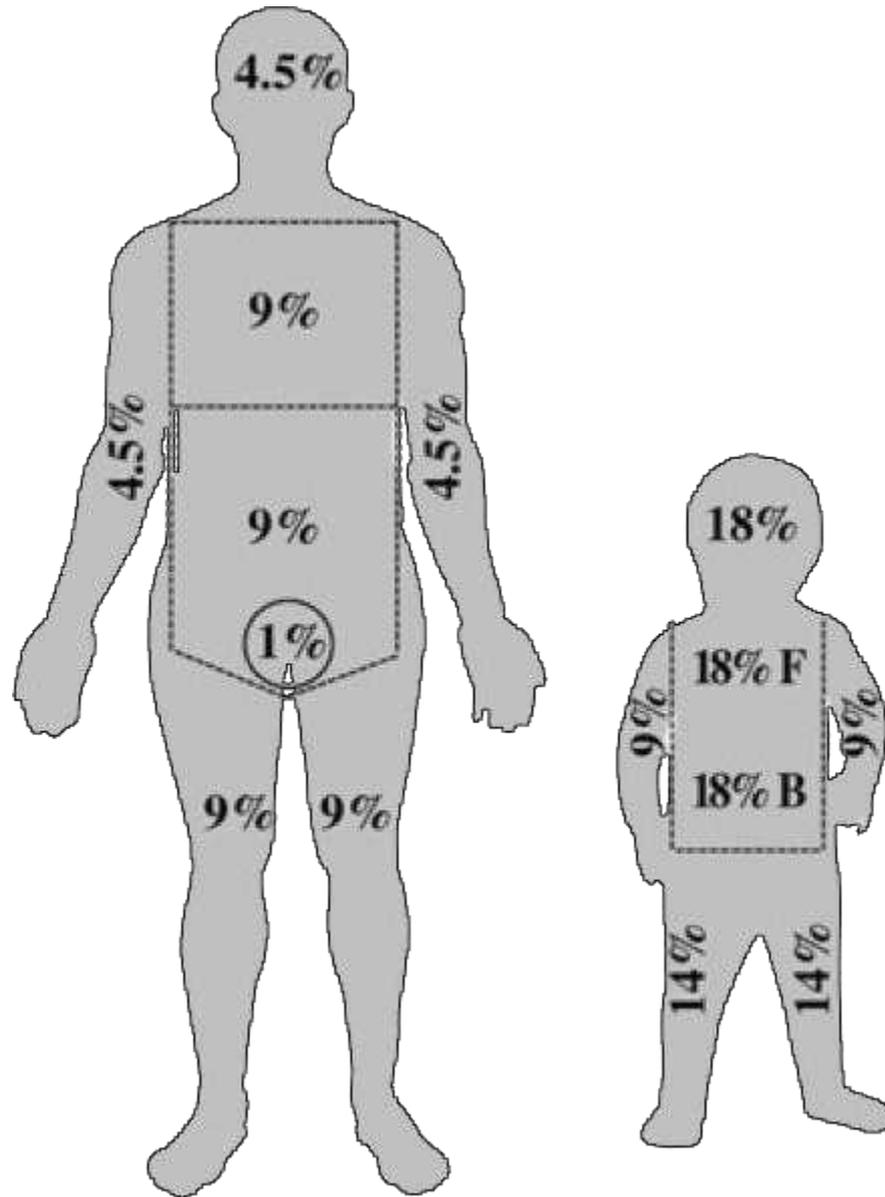


Table 1. Classification of Burns by Depth

Burn Thickness	Deepest Skin Structure Involved	Appearance	Pain	Prognosis (Without Surgical Intervention)
Superficial (first-degree)	Epidermis	Dry, blanching erythema	Painful	Heals without scarring, 5-10 days
Superficial partial-thickness (second-degree)	Upper dermis	Blisters; wet, blanching erythema	Painful	Heals without scarring, < 3 weeks
Deep partial-thickness (second-degree)	Lower dermis	Yellow or white, dry, nonblanching	Decreased sensation	Heals in 3-8 weeks; likely to scar if healing > 3 weeks
Full-thickness (third-degree)	Subcutaneous structures	White or black/brown, nonblanching	Decreased sensation	Heals by contracture > 8 weeks; will scar

<p>First degree</p> <p>Partial thickness burns.</p> <ul style="list-style-type: none"> * Characterized by erythema (localized redness). * Appear sunburn-like. * Are not included when calculating burn size. * Usually heal by themselves. 	<p>Third degree</p> <p>Full thickness burns.</p> <ul style="list-style-type: none"> * Full skin has been destroyed. * Deep red tissue underlying blister. * Presence of bloody blister fluid. * Muscle and bone may be destroyed. * Require professional treatment.
<p>Second degree</p> <p>Partial thickness burns.</p> <ul style="list-style-type: none"> * Part of skin has been damaged or destroyed. * Have blisters containing clear fluid. * Pink underlying tissue. * Often heal by themselves. 	<p>Fourth degree</p> <p>Full thickness burns.</p> <ul style="list-style-type: none"> * Penetrate deep tissue to fat, muscle, bone. * Require immediate professional treatment.

Role of 9's in Burns



Parkland Formula

Volume of Lactated Ringers solution:

$$4\text{ml} \times \text{BSA}(\%) \times \text{weight}(\text{kg})$$

Give half of the
solution for the

first 8 hours

Give the other half
of the solution for the

next 16 hours

Q: What is the Dx?

- 2nd degree burn



Q1: What is the degree of burn in this image?

- 3rd Degree

Q2: What is the name of the scar?

- Escharotomy

Q3: if the burn was circumferential and the patient weight was 100 kg, calculate:

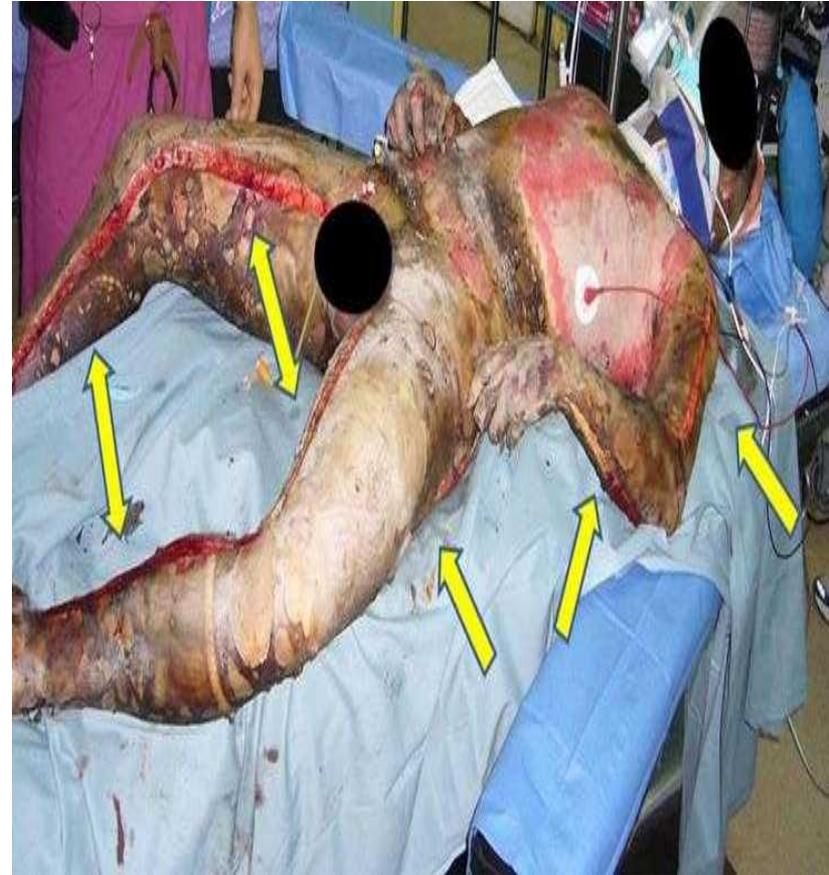
1. TBSA%:

- 100% (all the areas affected!)

2. Fluid that needed in the 1st 8 hours if the TBSA is 40%:

- 8 L

(4 x 40 x 100 = 16K ml/1000 = 16 L, in the 1st 8 hr we give ½ (so 8))



Q1: What category of burn does this patient have?

-It's a facial flame burn (facial edema).

Q2: What is the main risk of this burn?

-the patient will have upper airway obstruction and risk of CO poisoning.

Q3: What should you do?

-The patient should be intubated before reaching to complete obstruction and give 100% oxygen if CO poisoning is suspected.



Q: This lady had a flame burn 2 years ago.

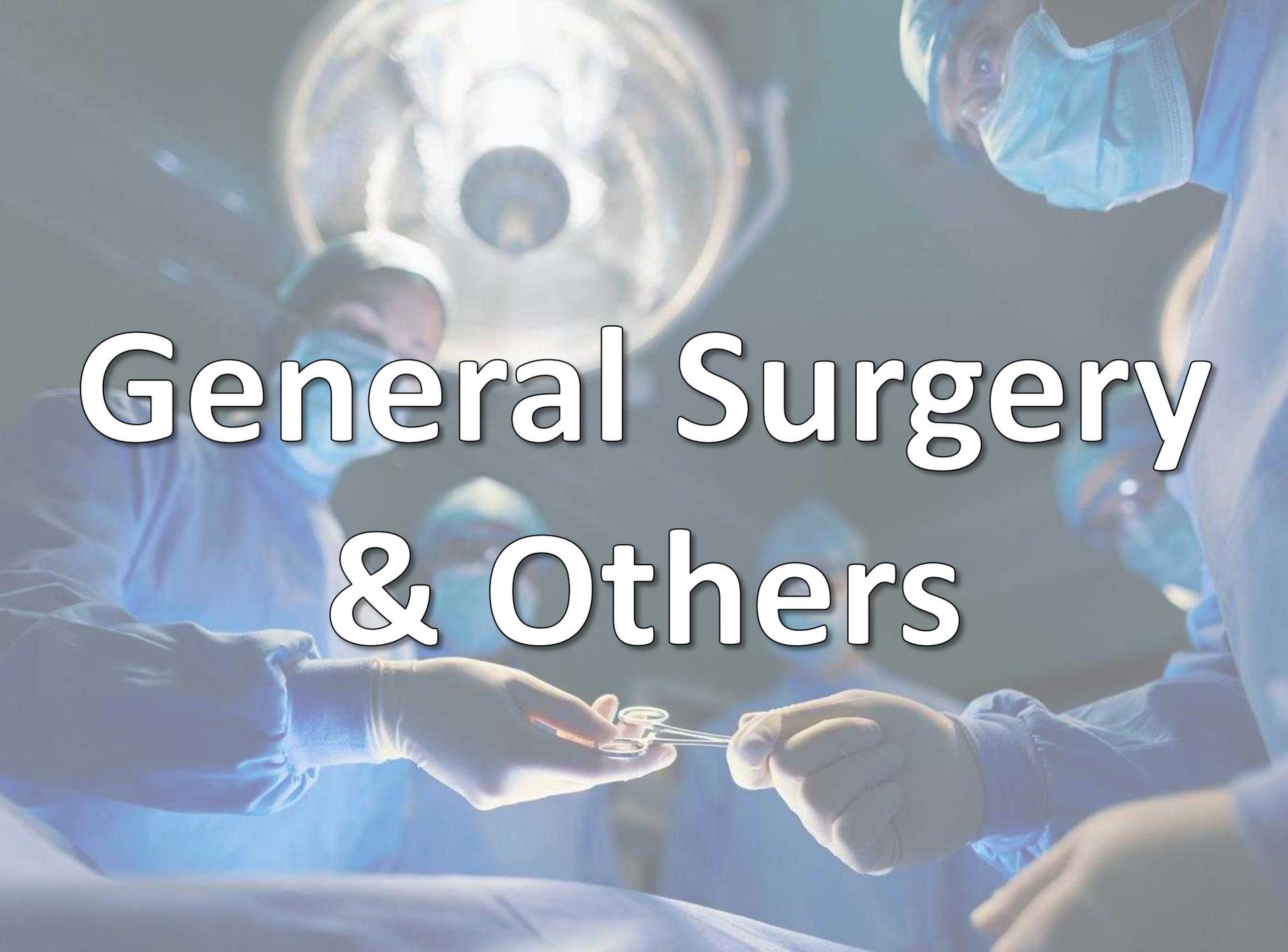
Q1: What does the image show? Post-burn fibrosis and contracture.

Q2: What was the degree of her burn? 3rd degree.

Q3: Name the most suitable type of skin graft to use in reconstruction?
Full thickness

Q: Serious complication that you fear from? Transformation into SCC



A photograph of surgeons in an operating room, wearing blue scrubs and masks, illuminated by bright overhead lights. The scene is focused on the hands of two surgeons in the foreground, one holding a pair of surgical forceps. The background shows other surgeons and the circular light fixtures of the operating room.

General Surgery & Others

Q: A trauma pt presented to the ER and was assisted with FAST:

Q1: What does FAST stand for?

- **F**ocused **A**ssessment with **S**onography for **T**rauma

Q2: What are the 4 sites that we look at in FAST?

- 1) RUQ (Morison's pouch – Perihepatic)
- 2) LUQ (Perisplenic area)
- 3) Subcostal (Pericardiac)
- 4) Pelvic space



**Q: A patient presented to the ER
after RTA:**

Q1: What's your 1st priority?

- ABC

(some said only airway)

Q2: What's your 2nd priority?

- Stop bleeding

(some said only breathing)



Bleeding Classes

Parameter	Class I	Class II	Class III	Class IV
Blood loss (ml)	<750	750-1500	1500-2000	>2000
Blood loss (%)	<15	15-30	30-40	>40
Pulse rate (beats/min)	<100	100-120	>120	>140
BP	Normal	Decreased	Decreased	Decreased
Respiratory rate	14-20	20-30	30-40	>40
Urine output (ml/h)	>30	20-30	5-15	Negligible
CNS symptoms	Normal	Anxious	Confused	Lethargic

CNS: Central nervous system, BP: Blood pressure

Q: This patient arrived to your ER after being stabbed as shown 15 minutes ago. He was anxious and his vital signs were BP: 95/55 mm Hg, pulse 105 BPM, and RR 25 Per minute.

- 1. What is his class of hemorrhage? Stage 2**
- 2. How much blood has he lost? 750-1500 ml**



Q: A patient fell and broke her leg, then the doctor who saw her put a cast on the leg, afterwards she complained from pain, swelling, redness and numbness in the same limb:

Q1: What is the Dx?

- Compartment Syndrome

Q2: Next step in Mx?

- Decompression
- Remove the cast
- Fasciotomy

Q1: Name this sign?

- Seat belt sign

Q2: Name 4 associated injuries?

1) Flail chest

2) Small bowel injury

3) Cervical spine injury

4) Fracture of the sternum, ribs, clavicle & the vertebral bodies



Q1: In penetrating trauma most affected organ?

- Liver

Q2: What type of injury more severe (blunt or penetrating)?

- Blunt

Q3: In a penetrating wound, what should you do?

- Exploration Surgery



Blunt Vs Penetrating abd. Trauma...

- Blunt trauma

- spleen (45%)
- liver (40%)
- *Small bowel (10%)*

- Penetrating injuries

- Stab wounds:-
 - the liver (40%),
 - small bowel (30%),
 - diaphragm (20%),
 - colon (15%);
- gunshot wounds
 - small bowel (50%),
 - colon (40%),
 - liver (30%), and
 - vessels (25%).

Q: picture of multiple abdominal bruises, he asked about the zones of retroperitoneal bleeding and types of hemorrhage and where is the least likely place to check and when to go for surgery:

- Traumatic retroperitoneal hematomas divided into 3 zones:

Zone 1: Centrally located, associated with pancreaticoduodenal injuries or major abdominal vascular injury

Zone 2: Flank or perinephric regions, associated with injuries to the genitourinary system or colon

Zone 3: Pelvic location, frequently associated with pelvic fractures or ileal-femoral vascular injury

- **Indication for exploration in retroperitoneal hematomas :**
mandatory exploration should be performed in retroperitoneal hematomas resulted from penetrating injury, but the selection of treatment mode in blunt injury depend on the anatomical position of hematoma, visceral injury and the hemodynamic status of patients.

Q: Hx of surgery for diverticulitis before 10, the amount collected over 24 hr is 1500 cc:

Q1: What is the pathology?

- Enterocutaneous fistula
(high output)

Q2: What is the complication?

- 1) Electrolyte disturbance
- 2) Skin excoriation
- 3) Sepsis

Q3: What is the prognosis?

- In most patients it closes spontaneously





Q1: Type of stoma?

- End Colostomy

Q2: Mention 2 indications?

- IBD

- Rectal Tumors

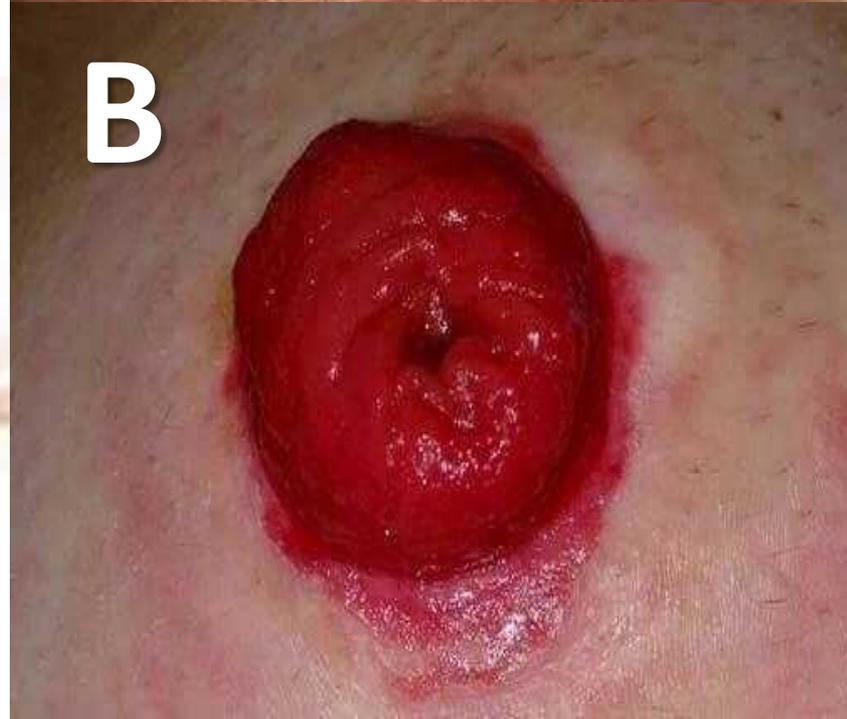
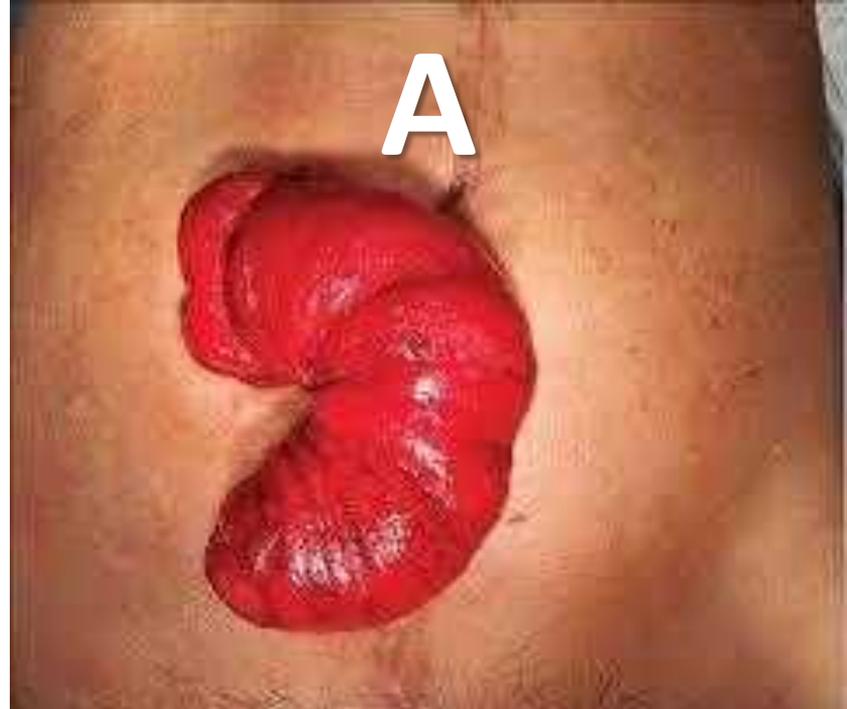


Q: What is the complications in A, B, C?

A) Prolapsed Stoma

B) Infected Stoma

C) Stoma Necrosis



Q: A 65 year old man underwent abdomino-perineal resection 2 years ago after diagnosis of rectal ca.



Q1: What is the type of his stoma?
End colostomy.

Q2: What is the complication shown?
Prolapse.



Q1: What is this?

Ileostomy.

Q2: How can you confirm?

By its site and skin irritation around the stoma.

Q3: What is the disease that probably was treated by this?

Chron's disease.

End Ileostomy

- Edges are spouted.
- Site: right iliac fossa.



Q1: Name of the test?

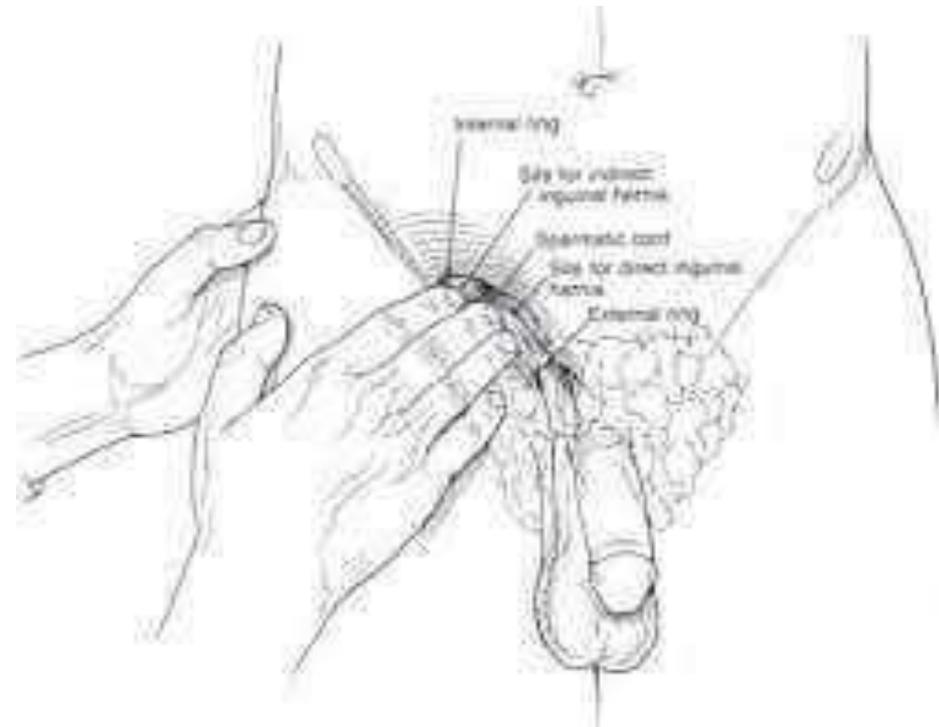
- Ring occlusion test

Q2: If you ask the patient to cough while you maintain pressure and you notice a bulge, what is your Dx?

- Direct inguinal hernia

** Note: Ring occlusion test differs from 3 fingers test, You Ask the patient to cough> Impulse felt on the index finger> Indirect hernia So; Zieman's Test (3 Finger Test) is used to differentiate type of hernia.

- Index: deep inguinal hernia (indirect)
- Middle: superficial inguinal (direct)
- Ring: Saphenous opening (femoral hernia)



Indirect Inguinal Hernia	Direct Inguinal Hernia
Pass through inguinal canal.	Bulge from the posterior wall of the inguinal canal
Can descend into the scrotum.	Cannot descent into the scrotum.
Lateral to inferior epigastric vessels.	Medial to inferior epigastric vessels.
Reduced: upward, then laterally and backward.	Reduced: upward, then straight backward.
Controlled: after reduction by pressure over the internal (deep) inguinal ring.	Not controlled: after reduction by pressure over the internal (deep) inguinal ring.
The defect is not palpable (it is behind the fibers of the external oblique muscle).	The defect may be felt in the abdominal wall above the pubic tubercle.
After reduction: the bulge appears in the middle of inguinal region and then flows medially before turning down to the scrotum.	After reduction: the bulge reappears exactly where it was before.
Common in children and young adults.	Common in old age.

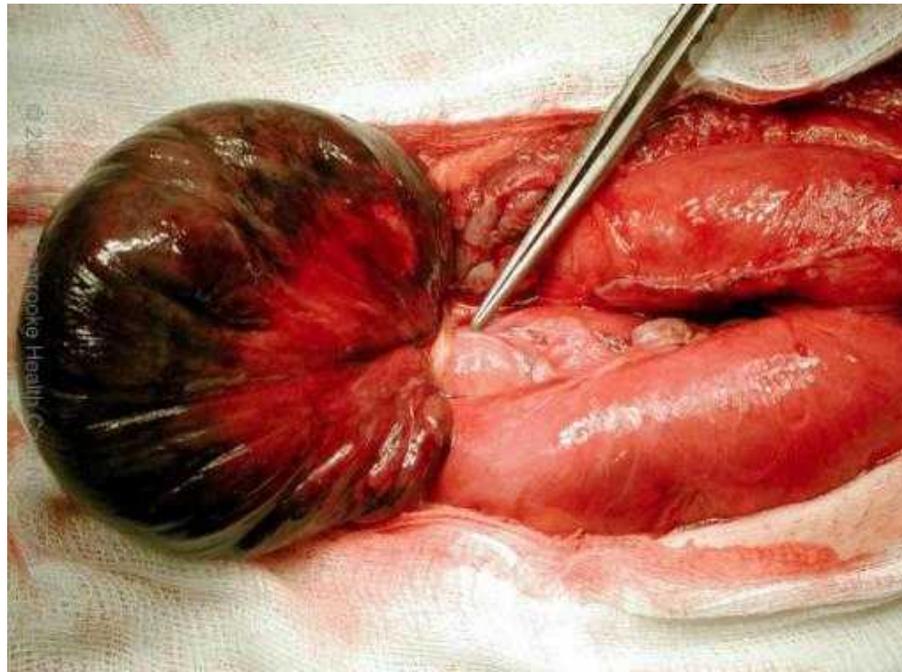
Q: Patient presented with painful lump in his belly button:

Q1: What is the Dx?

- Strangulated Hernia

Q2: If the bowel still the same despite of all measures, what's your next step?

- Resection and Anastomosis



Q1: What is the Dx?

- Cushing Syndrome

Q2: Causes?

- Iatrogenic (cortisol administration)

- Pituitary Adenoma

** Note: Cushing triad:

- 1) Irregular, decreased respirations
- 2) Bradycardia
- 3) Systolic hypertension



Q1: White arrow?

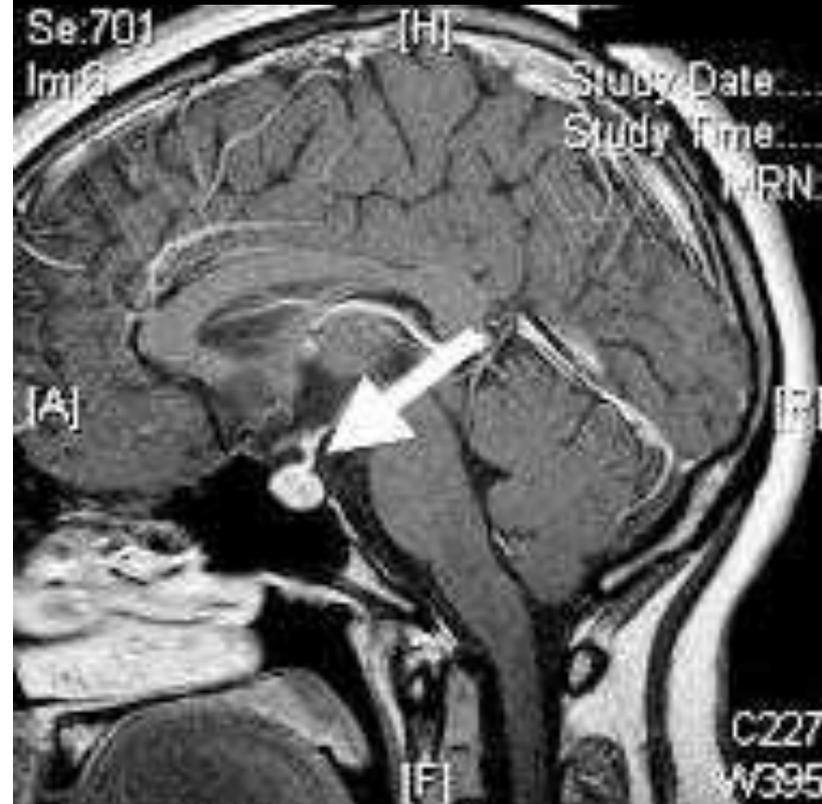
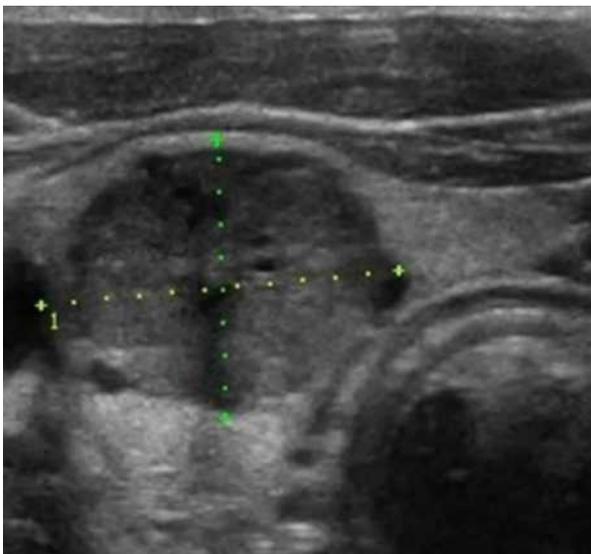
- Pituitary Adenoma

Q2: Syndrome name?

- MEN

Q3: The most important thing surgically to do for this patient?

- Pancreatic tumor “not sure”



3P

2P 1M

1P 2M

MEN 1

Pituitary adenoma

Parathyroid hyperplasia

Pancreatic tumors

MEN 2A

Parathyroid hyperplasia

Medullary thyroid carcinoma

Pheochromocytoma

MEN 2B

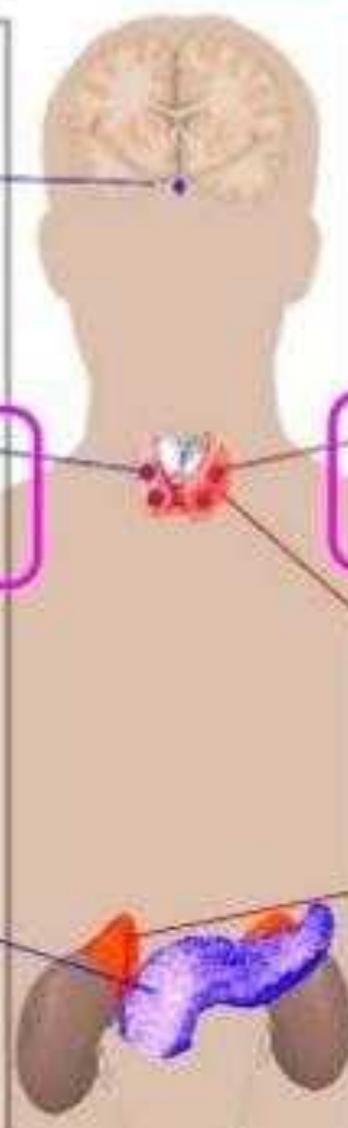
Mucosal neuromas

Marfanoid body habitus

Medullary thyroid carcinoma

Pheochromocytoma

- **MEN I (3 Ps)**
 - Pituitary,
 - Parathyroid,
 - Pancreatic
- **MEN 2A (1M,2Ps)**
 - MTC
 - Pheochromocytoma
 - Parathyroid
- **MEN 2B (2Ms,1P)**
 - MTC,
 - Marfanoid habitus/Mucosal neuroma
 - Pheochromocytoma



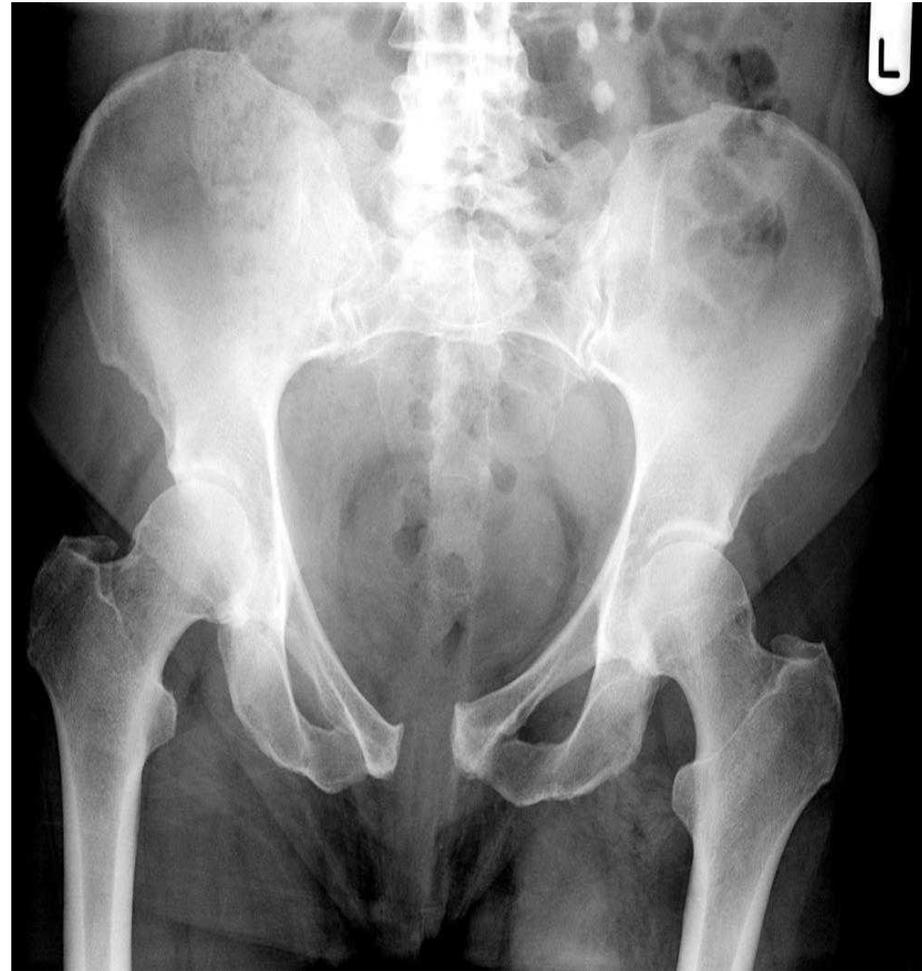
Q: This is pelvic x-ray of a patient post RTA:

Q1: What is the pathology?

- Pelvic fracture

Q2: What is the most serious complication?

- Bleeding (Femoral artery)



Question: about post-operative fever:

1. Lung Atelectasis
2. ECG change MI
3. UTI
4. wound surgical site infection
5. drugs

Question A: which of the following picture are consider as a source of fever after 1-3 days?

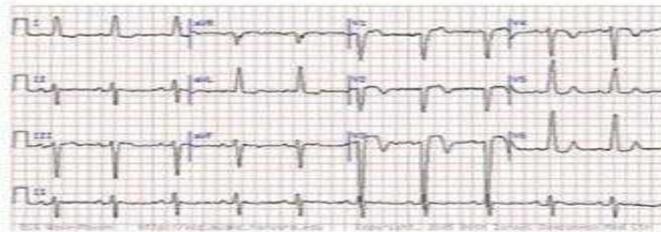
-Atelectasis (1)

Question B: which of the following picture are consider as a source of fever after 5-7 days?

-Wound infection (4)



1



2



3



4



5

Category	Day	Description
Wind	POD 1-2	the lungs, i.e. pneumonia , aspiration, and pulmonary embolism; atelectasis has been commonly cited as a cause of post-operative fever, but supporting evidence is lacking ^{[2][3]}
Water	POD 3-5	urinary tract infection , possibly catheter-associated (if a urinary catheter was inserted during surgery or remains in place currently i.e. Foley catheter)
Wound	POD 5-7	infection of the surgical incision(s), either superficial or deep ^[4]
(W)abscess	POD 5-7	infection of an organ or space ^[5]
Walking (or VEINS pronounced like "Weins")	POD 5+ (risk may persist for months post-operatively)	deep vein thrombosis or pulmonary embolism
Wonder drugs or "What did we do?"	Anytime	drug fever or reaction to blood products, either a febrile non-hemolytic transfusion reaction or transfusion-related acute lung injury
Wing/Waterway	Anytime	bloodstream infection, phlebitis, or cellulitis related to intravenous lines, either central or peripheral

Diagram of Tumour Markers

Oesophagus

(CEA, SCC)

Lung

parvicellular: NSE (CYFRA 21-1)
non-parvicellular: (CEA, CYFRA 21-1)

Liver/Biliary ducts

AFP, CA 19-9

Bladder

(CYFRA 21-1)

Uterus

SCC (CEA)

Prostate gland

PSA

Testes

AFP, HCG

Thyroid gland

Thyroglobulin,
Calcitonin (C-cell,
CEA)

Mamma

CA 15-3, CEA

Stomach

CA 72-4 (CEA)

Pancreas

CA 19-9 (CEA)

Colorectal

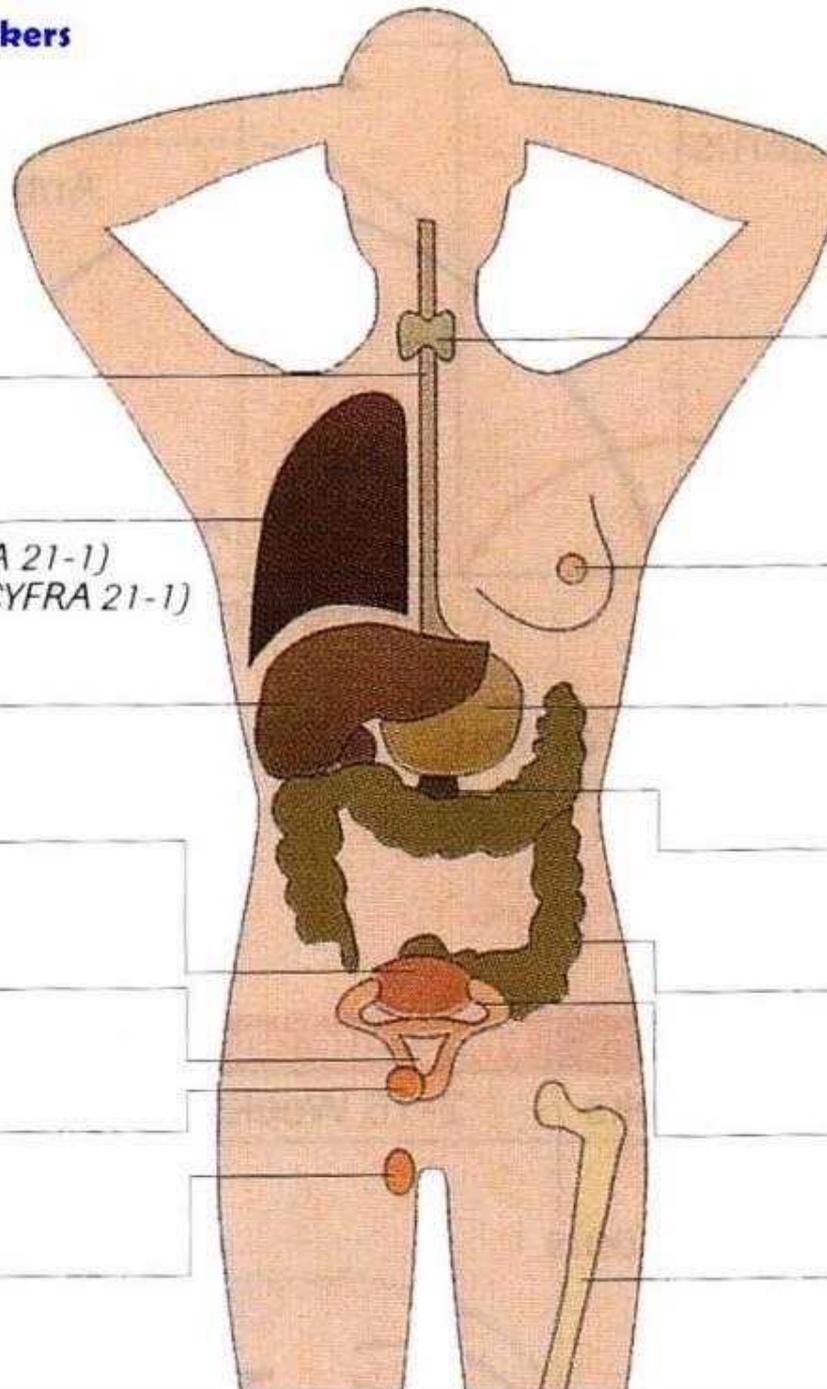
CEA (CA 19-9)

Ovaries

CA 125 (CA 72-4)

Multiple Myeloma

β_2 -Microglobulin



A close-up photograph of a hand wearing a white surgical glove, resting on a blue sterile drape. The hand is positioned over a collection of surgical instruments, including forceps and a scalpel. The background is blurred, showing more of the surgical environment. The text "Tools & Instruments" is overlaid in a large, white, bold font with a black outline, centered over the hand and instruments.

Tools & Instruments

Q1: What are the names of those tools?

- Central line and cannula

Q2: What is better to insert in a trauma patient & for fluid administration, why?

- Cannula, because it is easier to use, require less experience and time, it also deliver the largest volume of fluid

Q3: The smallest cannula in diameter is?

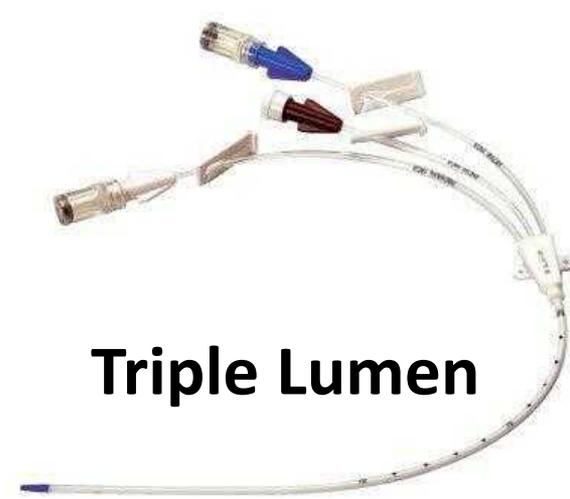
- Purple

(Cannula's in the picture – Blue)

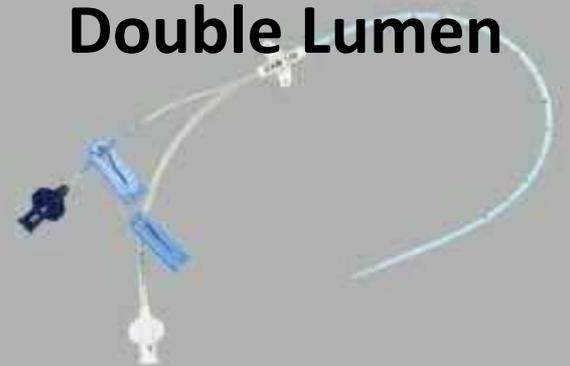
Q4: Cannula for large amount of fluid?

- Orange

(cannula's in the picture - Green)



Triple Lumen

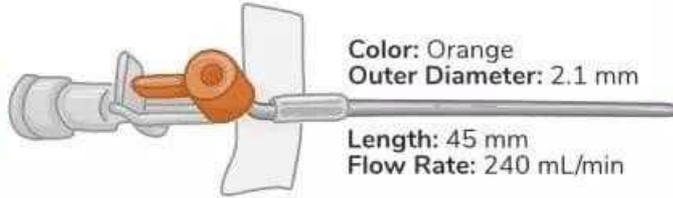


Double Lumen



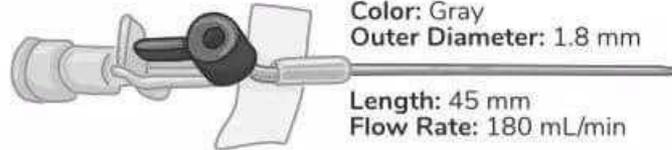
IV NEEDLE GAUGES SIZE CHART

14 GAUGE



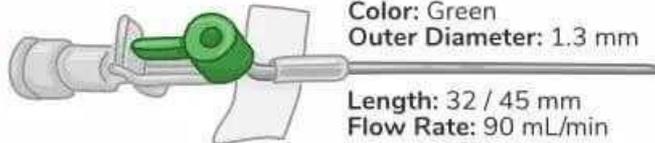
Color: Orange
Outer Diameter: 2.1 mm
Length: 45 mm
Flow Rate: 240 mL/min

16 GAUGE



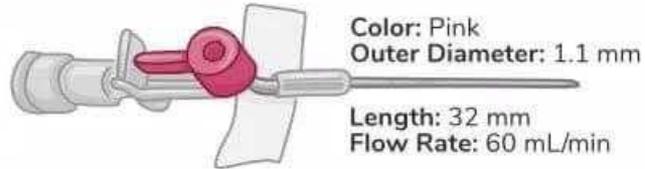
Color: Gray
Outer Diameter: 1.8 mm
Length: 45 mm
Flow Rate: 180 mL/min

18 GAUGE



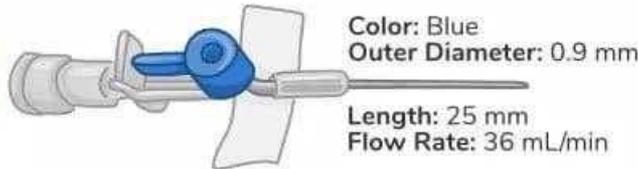
Color: Green
Outer Diameter: 1.3 mm
Length: 32 / 45 mm
Flow Rate: 90 mL/min

20 GAUGE



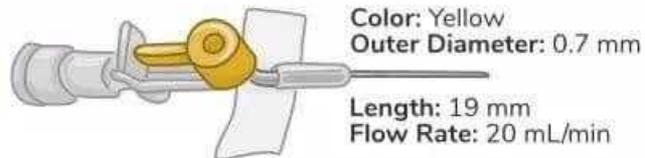
Color: Pink
Outer Diameter: 1.1 mm
Length: 32 mm
Flow Rate: 60 mL/min

22 GAUGE



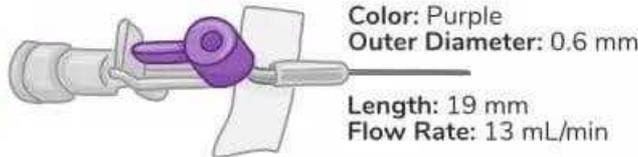
Color: Blue
Outer Diameter: 0.9 mm
Length: 25 mm
Flow Rate: 36 mL/min

24 GAUGE



Color: Yellow
Outer Diameter: 0.7 mm
Length: 19 mm
Flow Rate: 20 mL/min

26 GAUGE



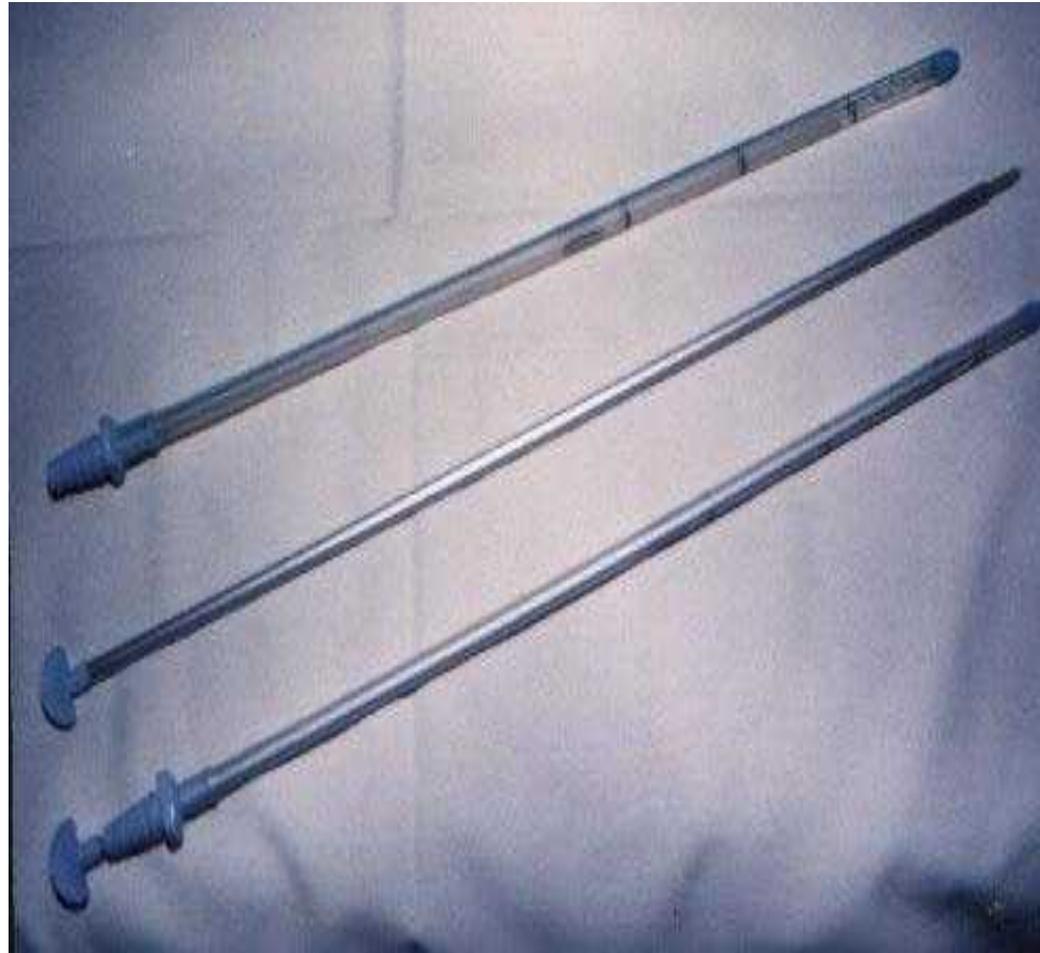
Color: Purple
Outer Diameter: 0.6 mm
Length: 19 mm
Flow Rate: 13 mL/min

Q1: Name this tube?

- Chest tube

Q2: Give 4 indications?

- 1) Hemothorax
- 2) Pneumothorax
- 3) Chylothorax
- 4) Empyema
- 5) Hydrothorax
- 6) Pleural Effusion
- 7) Post-op



Q1: What is this device?

- Nasogastric tube

Q2: Give 3 indications?

- 1) Feeding
- 2) Decompression
- 3) Administration of medication
- 4) Bowel irrigation

Q3: The tip of it should reach?

- Stomach body

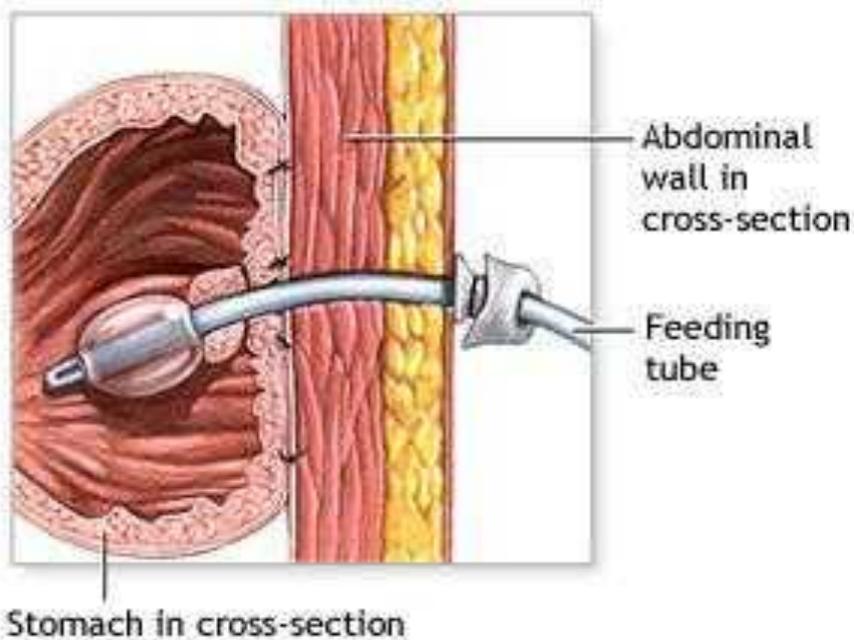
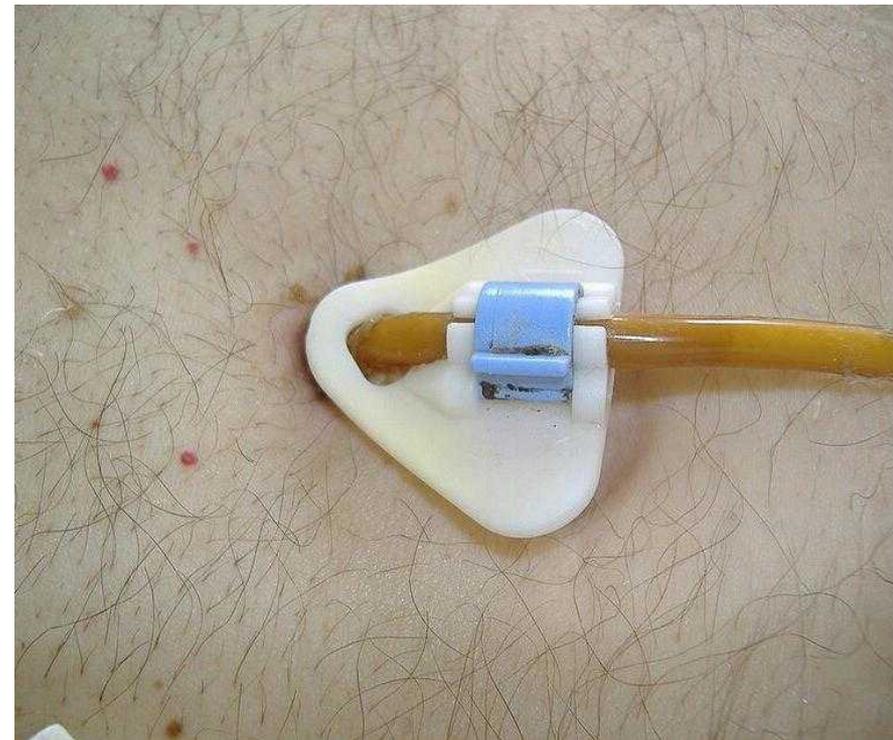


Q1: What is this?

- Gastric tube/G-tube/PEG tube/ Gastrestomy

Q2: What is the main indication for it?

- Feeding



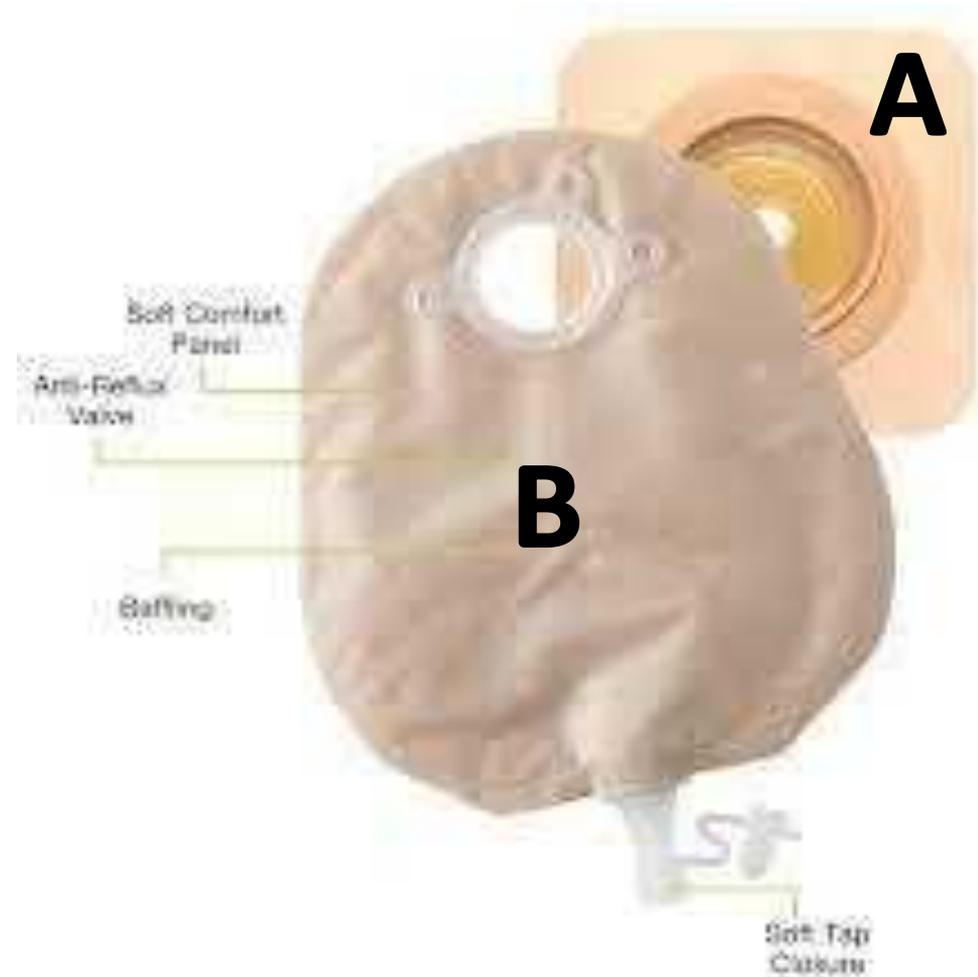
Q1: What is A,B?

A > Stoma base (Flange)

B > Stoma bag

Q2: Mention 3 indications?

- After proctocolectomy
- Imperforated anus
- Secondary healing
- Some said (colectomy, ileostomy, double barrel)



Q1: What is this?

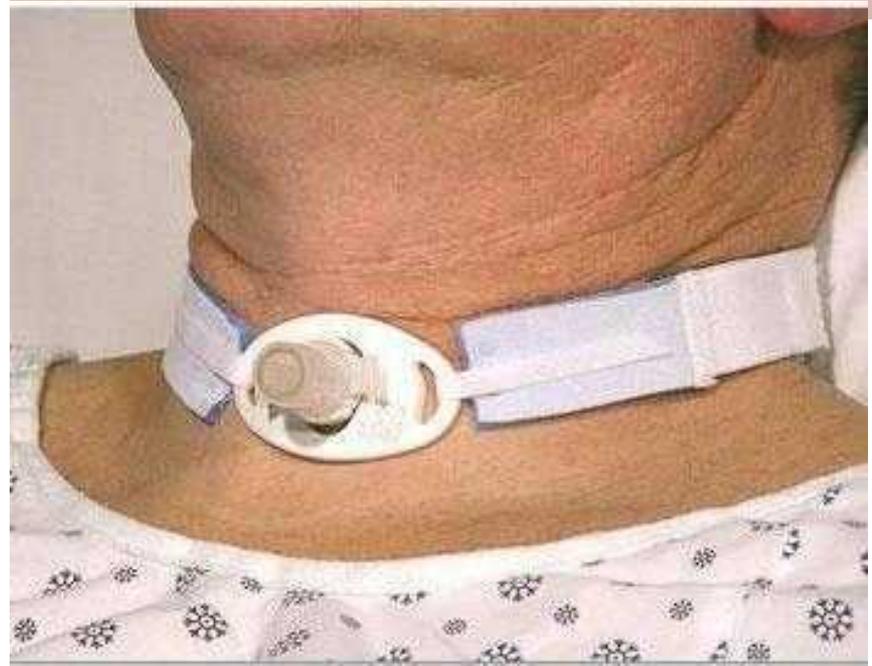
- Tracheostomy

Q2: Mention 2 complications?

- 1) Infection
- 2) Blockage (Obstruction)
- 3) Bleeding
- 4) Pneumothorax

Q3: Mention 2 indications?

- 1) Upper airway obstruction
- 2) Obtaining an airway in severe facial or neck trauma
- 3) Upper airway edema and copious secretions
- 4) Failure to wean from mechanical ventilation
- 5) Acute respiratory failure with need for prolonged mechanical ventilation (mc indication, 2/3 of all cases)

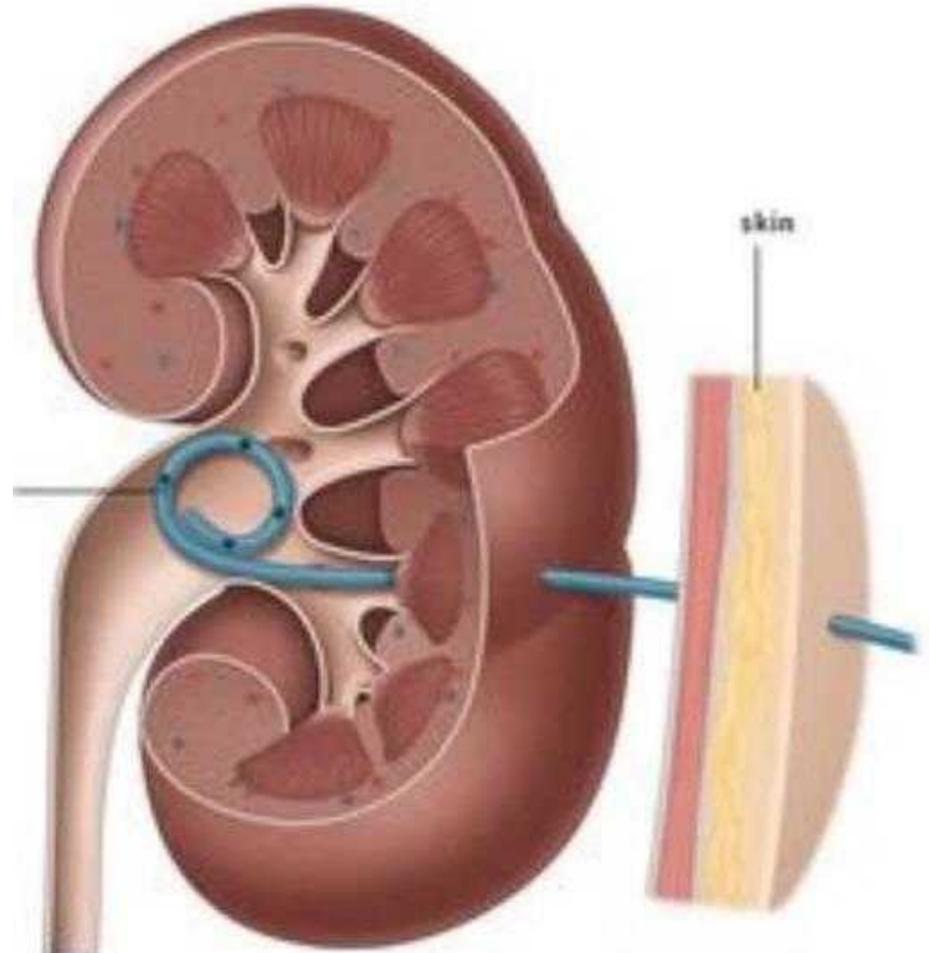


Q1: Name the tube?

- Nephrostomy tube

Q2: Write 2 indications?

- 1) Urinary obstruction secondary to calculi
- 2) Hemorrhagic cystitis

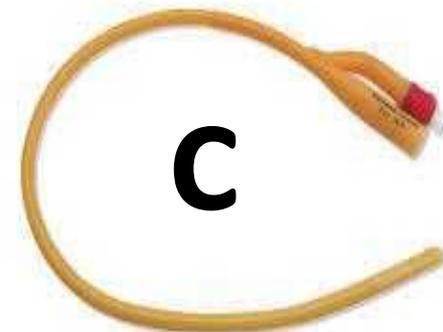
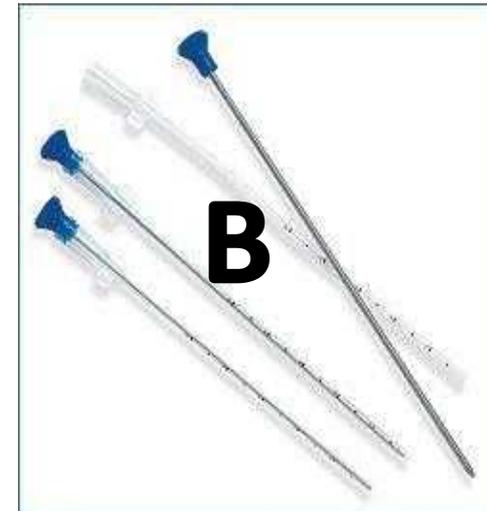
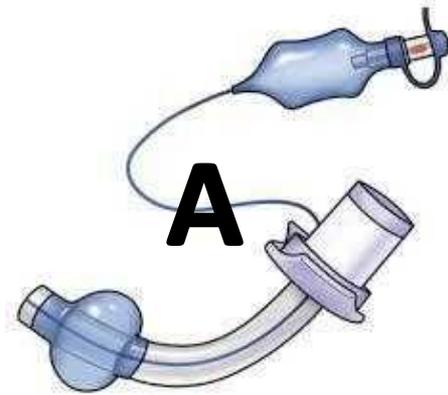


Q1: Which one is not used in primary survey?

- C (Foley's Catheter)

Q2: Which one is your 1st priority?

- D (Neck collar), some said (B)



Q1: What is the name of device?

- Foley's Catheter

Q2: What is the unit used in measurement??

- French



Q1: What is the name of the drain?

- Penrose

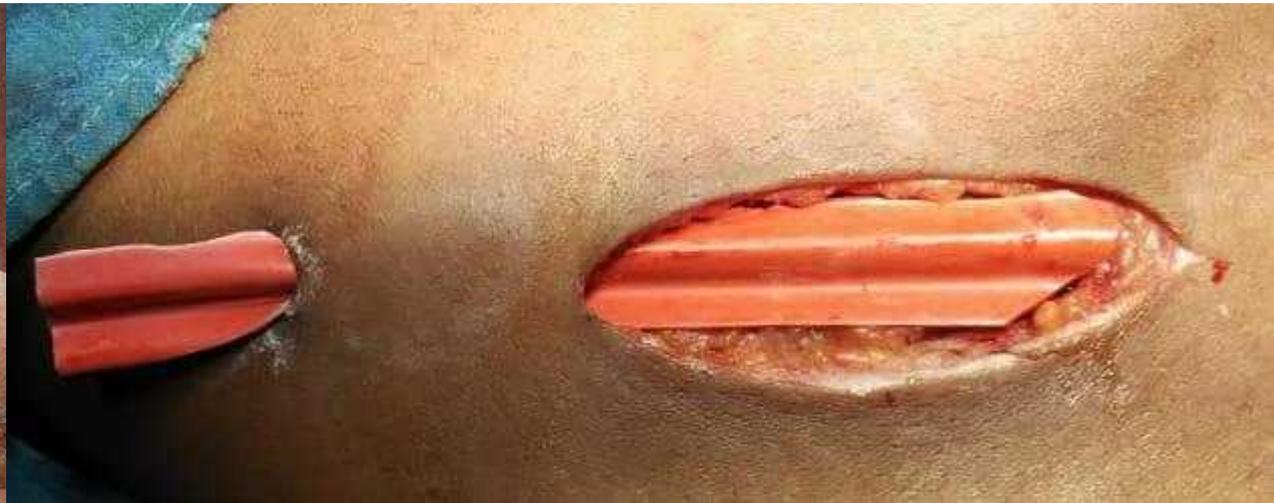
Q2: Type of the drain?

- Open drain



Q: Name of the drain?

- Corrugated Drain



T-tube

used for post operative drainage of common bile duct.



Redivac drain

Drains can be:
Open or closed
Active or passive:





Q1: What is this device?

Intermittent pneumatic compression technique
(Inflatable leg sleeves).

Q2: Uses?

To prevent DVT.

Q1: what is this?

incentive spirometer

Q2: Why do we use it?

used after surgery to prevent atelectasis .
(used while inspiration not expiration).

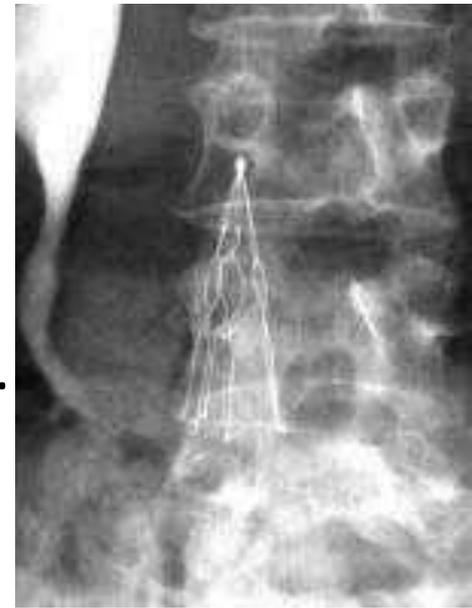


Q1: Name of device seen in the CT?

- Inferior vena cava filter

Q2: Give 1 indication for it?

- 1) Proven VTE with contraindication for anticoagulation.
- 2) Proven VTE with complications of anticoagulation.
- 3) Recurrent VTE despite adequate anticoagulation.



Q1: Name of device?

- Central venous catheter (CVC)

Q2: Where do you insert it?

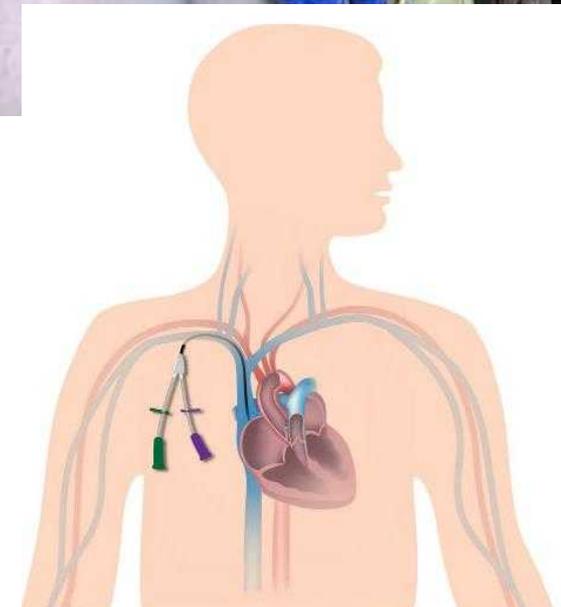
- Subclavian vein
- Internal jugular vein

Q3: Mention 2 indications?

- 1) Total parenteral nutrition (TPN)
- 2) Hemodialysis
- 3) Chemotherapy

Q4: Mention 2 complications?

Pneumothorax, Hemothorax, Recurrent laryngeal nerve injury, Arterial or Venous injury, Arterial access instead of venous, Hematoma, Infection, Thrombosis and occlusion of the line...etc



Q1: What is this? Colonoscopy

Q2: Name 2 pathologic finding?

- 1) Angiodysplasia
- 2) Diverticulosis
- 3) Colon tumor
- 4) Polyps, masses

Q3: Name 2 therapeutic procedures done with it?

- 1) Laser Ablation
- 2) Polyps Resection





Q1: What is this device?

- Pulse Oxymeter

Q2: What does it calculate?

- O2 Saturation

- Pulse Rate (HR)

A photograph of surgeons in an operating room, wearing blue scrubs and masks, performing a procedure. The scene is dimly lit with a strong blue light source, likely the operating lights, creating a focused and professional atmosphere. The surgeons' hands are visible, wearing blue gloves, as they work on a patient who is lying on the operating table, partially covered with a blue drape.

Best of Luck!



دعواتكم