

# Pancreatic Problems

● **Important**

● **Notes (Doctors')**

**Notes (students')**

**431**

**SURGERY TEAM**

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# Pancreatic Problems

## Acute Pancreatitis

Acute non-bacterial inflammation caused by activation and auto-digestion of the pancreas by its own enzymes.

### Etiology:

1- **Gall stones - Most common** Small ones will cause blockade/obstruction.  
Called "Biliary Pancreatitis".

2- **Alcohol - 2<sup>nd</sup> most common**

underlying mechanisms are still unclear, but 2 effects are proposed to be involved:

a. Direct toxic effect on pancreatic cells.

b. Transient ischemia (cutaneous vasodilation → blood diverted away from splanchnic circulation → pancreatic ischemia)

3- **Hypercalcemia** - With severe inflammation:  $Ca^{++} + fat = saponification$   
→ serum  $Ca^{++}$  will be depleted in the process (low-normal serum  $Ca^{++}$  levels)

4- **Hyperlipidemia.**

5- **Familial.**

6- **Drug induced** - 1. Oral contraceptives.

2. Hormonal replacement therapy.

3. Diuretics (lasix & thiazides).

4. Azathioprine and steroids.

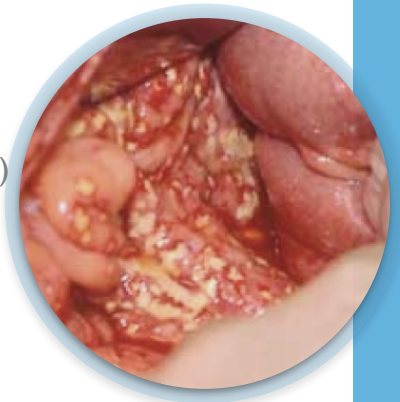
10- Trauma.

7- **Obstruction.**

11- Scorpion bite.

8- **Viral infection.**

12- Idiopathic.



### Hx.

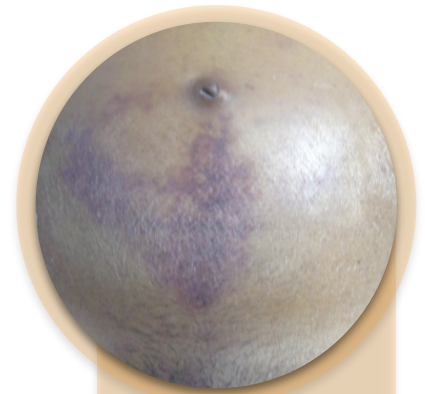
- Acute epigastric pain, **radiating to the back.**
- Aggravating factors: Laying down & eating.
- Relieving factor: leaning forward.
- Nausea & vomiting.
- Previous attacks.
- Symptoms of underlying disease.

## Physical Examination:

- **Dehydration** → can progress to shock.
- Hypotension, tachycardia & fever.
- Epigastric tenderness.
- Pleural effusion.
- Hemorrhagic pancreatitis: **Grey turner's & cullen's sign.**



Bruising of the **flanks**; sign of retroperitoneal hemorrhage



Superficial edema and bruising in the subcutaneous fatty tissue around the **umbilicus** – indicating pancreatic necrosis & retroperitoneal bleeding

## Labs:

- **↑ Lipase** → specific. (only secreted by the pancreas)
- **↑ Amylase** - Short half life → sensitive.
- **↑ WBC.**
- **Ca & lipids** → saponification.  
hint the normal level of Ca, in sever inflammation.

## Radiology:

AXR → **sentinel loop** = **Ileus**



CT (Best) → **Phlegmon**



## Ranson's Criteria:

On admission

- Age > 55
- WBC > 16,000
- Glucose > 11
- AST > 250
- LDH > 350

During 24-48 hours

- Urea > 8 mg/dl
- Hematocrit: >10% decrease
- Fluid sequestration >6 L
- PO<sub>2</sub> < 60
- Base deficit > 4
- Ca < 8 mg/dl

## Management:

- 1st **REHYDRATE** the patient with normal saline or Ringer's lactate.
- Then:
  1. Rest the patient: Analgesics
  2. Rest the bowel: Nasogastric tube
  3. Rest the pancreas: NPO.
- Don't give antibiotics.
- Surgery rarely indicated (only to debride necrotic tissue in advanced stages "Necrosectomy").

Infected necrosis



Acute pancreatitis is the only acute abdomen emergency that **DOESN'T NEED SURGERY**

## Complications:

- Necrosis
- Infected necrosis
- Abscess
- Pseudocyst

## Pseudocyst

A collection of amylase-rich fluid enclosed in a wall of fibrous or granulation tissue (not epithelium) that develops following an acute pancreatitis attack

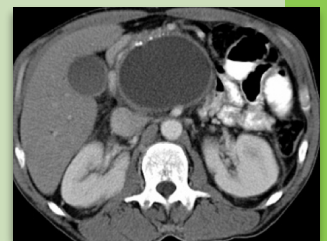
"Failure of pancreatitis to recover or recurrence of symptoms"

## Hx.

- Abdominal pain.
- Pressure symptoms
- - eg: Stomach: nausea.  
Bile duct: obstructive jaundice.
- Epigastric mass.

## Investigations:

- ↑ Lipase/WBC.
- CT scan (**best**).



## Complications

- Infection → abscess.
- Rupture → pancreatic ascites.
- Bleeding - gastroduodenal artery.

## Management:

- Observe for 6-12 weeks.
- Surgery (drainage) - **Indications?**
  1. Infection (drain externally).
  2. Symptomatic (Internally into stomach).
  3. > 5 cm (Internally into stomach).

# Chronic pancreatitis

Chronic pancreatitis is a progressive inflammatory disease of the pancreas causing fibrosis and loss of endocrine & exocrine functions of the pancreas.

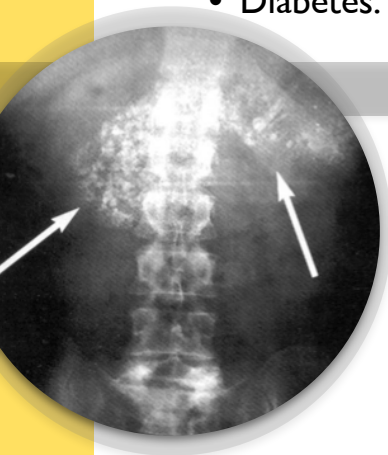
Most common cause: Alcohol

## Signs & symptoms:

- Abdominal pain.
- Malabsorption - steatorrhea.
- Diabetes.

## Dx.

- Lipase/amylase = normal.
- ↑ glucose.
- AXR: calcification.
- CT: calcification, atrophy & dilated ducts.



## Complications:

- Biliary obstruction.
- Pseudocyst.
- Carcinoma.
- Splenic vein thrombosis.

## Management:

- Pancreatic enzymes - for malabsorption.
- Insulin - for diabetes.
- Analgesia
- Celiac block
- Surgical drainage
- Pancreatectomy - "Brittle diabetes"

# Pancreatic adenocarcinoma

3<sup>rd</sup> leading cause of cancer death in men aged 35-55 years

## Risk factors:

- Most common: **Smoking**.
- Fatty food.
- Remote gastrectomy.
- Race: Black.
- Chronic pancreatitis.
- Polyposis syndromes.
- FHx.
- Cholecystectomy.

## Hx.

- Weight loss.
- Jaundice.
- Deep seated pain.
- Back pain - retroperitoneal invasion.  
→ Can't resect the tumor.
- Gastric outlet obstruction.

## Physical examination:

- Jaundice.
- Fever.
- Hepatomegaly.
- Palpable gallbladder.
- Succussion splash.

Jaundice + fever = Cholangitis (Medical Emergency)

→ Do ERCP

Most patients die because of cholangitis not the cancer itself

## Imaging:

- Double duct sign on U/S & CT.
- US: dilated bile ducts
- CT (Best).



- ERCP - specially cholangitis



## Extra info.

"Tumor is a contraindication for any transplant."

## Labs:

- ↑ WBC - w/ cholangitis.
- CA 19-9 > 100 - tumor marker.

## Management:

- Assess resectability - rule out local invasion and distant metastasis.
- Whipple's resection.
- Palliative biliary and gastric drainage.
- Poor long term survival.

## Pancreatic transplant:

Transplant is done to those with:

1. type 1 diabetes
2. renal failure!

## MCQs:

Q / Patient present with acute pancreatitis ,What is the first line of treatment ?

- 1- Analgesic because a sever pain .
- 2- IV fluid resuscitation
- 3- Nothing by mouth
- 4- IV antibiotic by infection from bowel bacteria.

Q /What is the most common cause of chronic pancreatitis ?

- 1- Smoking
- 2- Gall stone
- 3- Alcohol
- 4- Complication of Pseudocyst

Q / Patient 45 years old present to the ER with Nausea , fever and epigastric pain . During complete history taking he recently found color change of his urine and stool . what is the most differential diagnosis ?

- 1- Acute viral hepatitis
- 2- Acute pancreatitis
- 3- cholangitis
- 4- cholelithiasis

Answers: 2,3,3