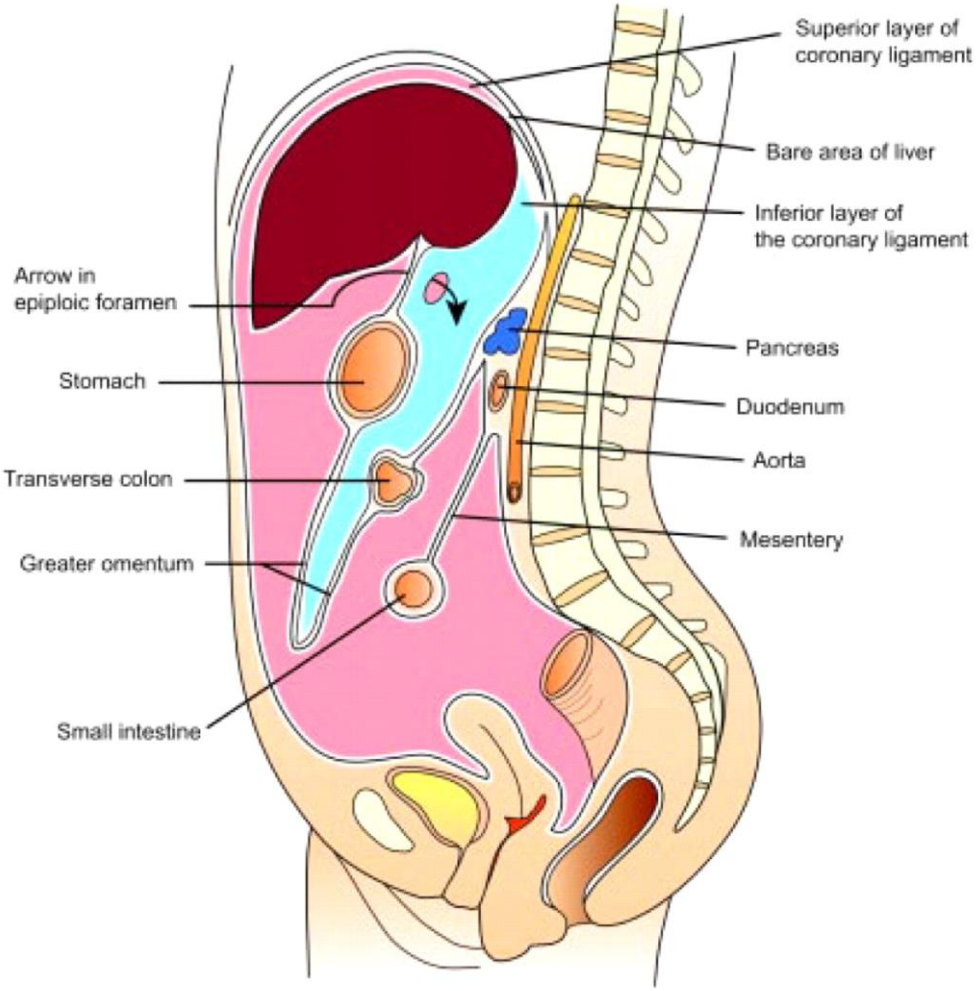
PERFORATED PEPTIC ULCER

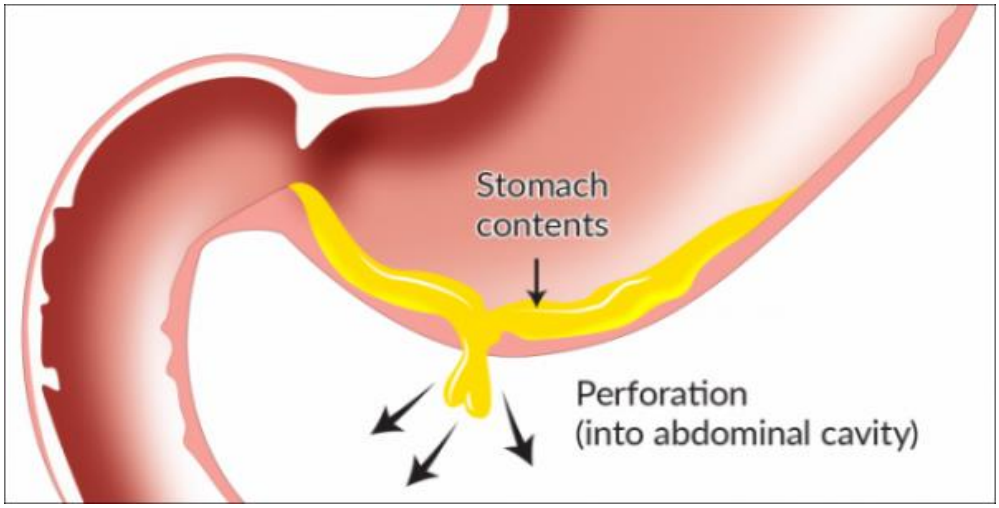
A. Acute perforated peptic ulcer

* **Predisposing Factors:** All factors which cause acute exacerbation and inflammation of the ulcer as NSAIDs ,alcohol ,nervous , stress , etc….
* **Incidence:**
  - More common is perforation of **anterior duodenal** ulcer into the greater sac of the peritoneal cavity.
  - Rarely perforation of posterior gastric ulcer into the lesser sac .

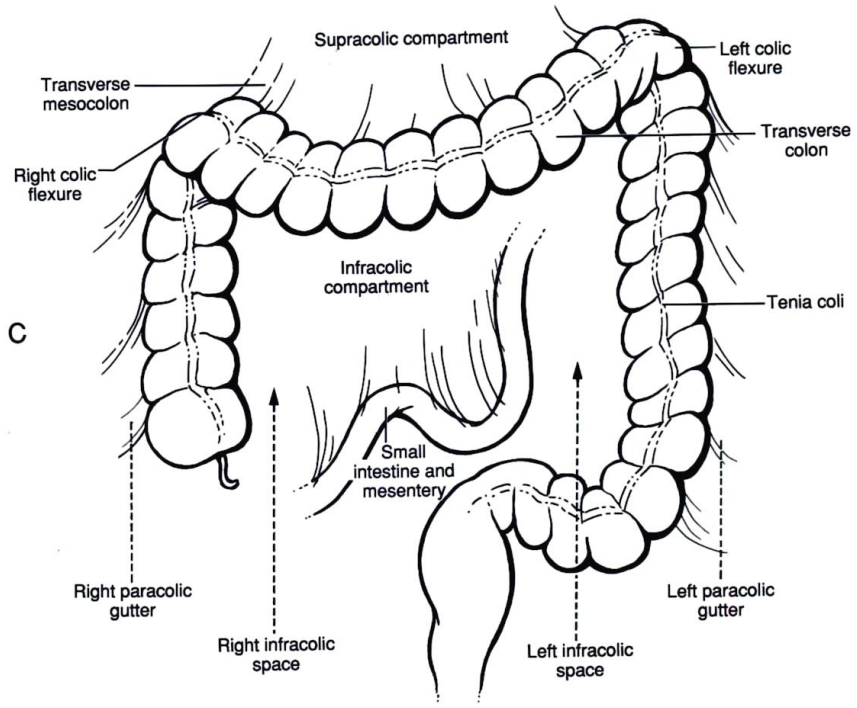


*** Pathology:**

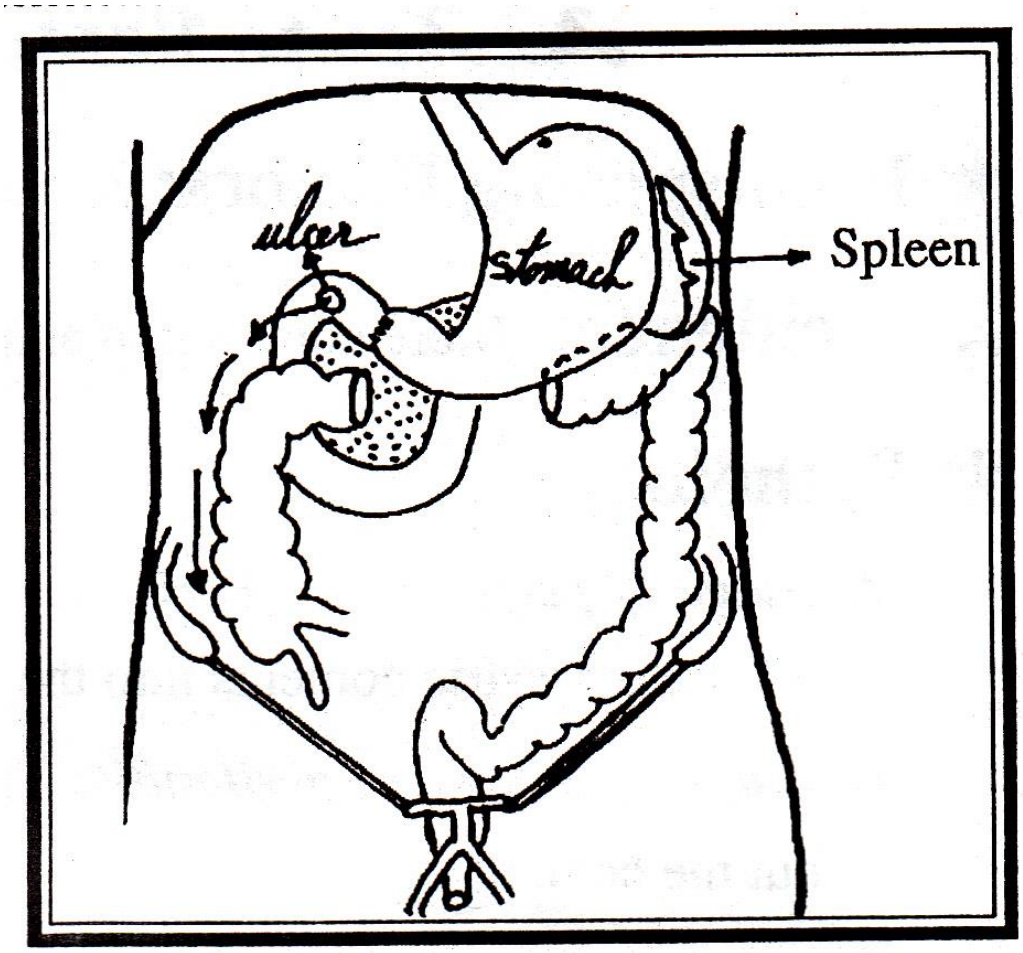
- ***The condition starts by*** sudden rupture of the ulcer base with release of sterile gastric contents with air into the peritoneal cavity → peritoneal irritation.



- Early : The peritoneum show inflammatory response but its **contents are sterile .**
- The inflammatory exudates at first collects in the **supra-colic** compartment of the peritoneal cavity , but soon the fluid pass to the **infra-colic** compartment through the **right para-colic gutter** , to **right iliac fossa** and finally to the **recto-vesical** or recto-vaginal pouch .
- ***Within few hours, the*** swallowed bacteria with saliva and bacteria migrate from the gut invade the peritoneum with pus formation → **generalized septic peritonitis**.



*Compartments of greater sac *



* **Complication:** Peritonitis, paralytic ileus & shock.
* **Clinical Picture:**

1- There may be **history** of ulcer dyspepsia or perforation may be the **1 st presentation**.

2- At the **time of perforation** the patient feel sudden sever **upper abdominal pain** which **spread** right iliac fossa later on all over the abdomen.

3- **Shock**: early neurogenic followed by hypovolaemic and septic shock .

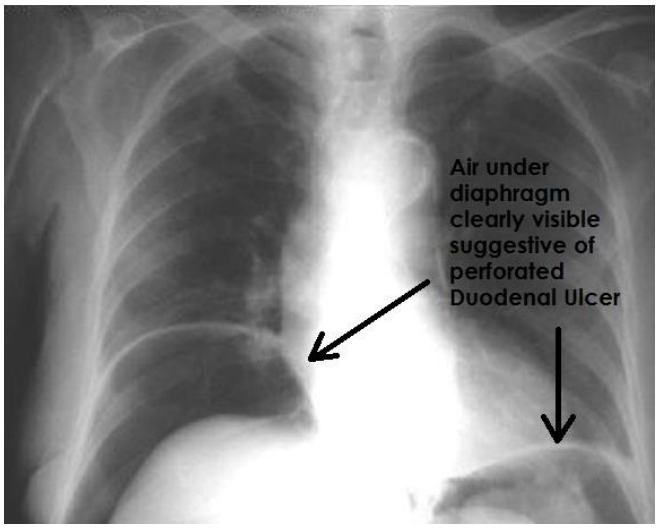
4- Abdominal examination:

- **Tenderness , rebound tenderness** in the upper abdomen then spread all over the abdomen.
- Board like **rigidity & gardening** with little or no movements abdominal wall during respiration.
- **Obliteration** of normal **liver dullness** due to pneumo-peritoneum.
- ***Shifting dullness*** due to free fluid in the peritoneal cavity.
- ***In advanced cases*** manifestations of ***:***
  - ***septic peritonitis*** (mention)
  - **septic shock** (mention) with rising pulse rate and high fever .

- **paralytic ileus** (mention) with sever abdominal distension & dead silent abdomen***.***
- In **perforated D.U.** the fluid pass along the right iliac fossa → clinical manifestations simulating **acute appendicitis**.

*** Investigations:**

1. ***Plain X ray*** in the **erect** position → air under the diaphragm.



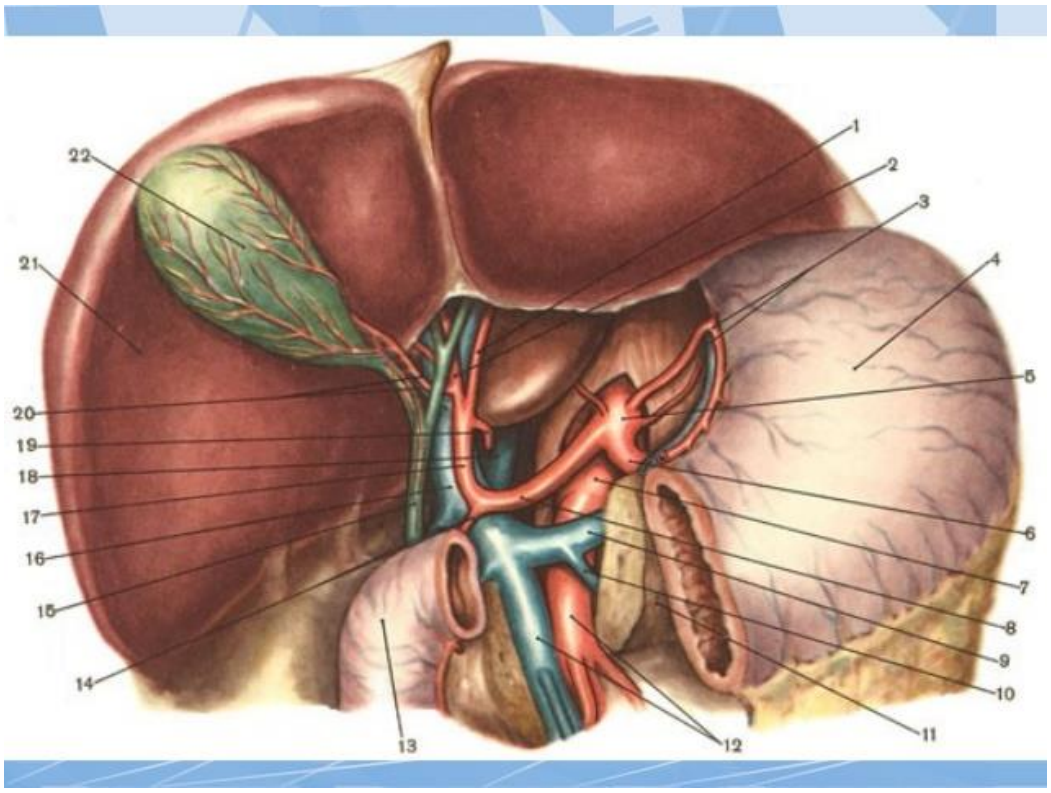
2. ***Abdominal ultrasound*** show peritoneal fluid .
3. ***Abdominal CT*** : diagnostic in **doubtful** cases and exclude other causes of acute abdomen as acute pancreatitis .
4. ***Aspiration*** from peritoneal cavity → **bile stained alkaline fluid** in case of perforated duodenal ulcer.
5. **Laparoscopic exploration** is **diagnostic** for the cause of acute abdomen and **therapeutic** for acute perforated peptic ulcer .

* **D.D.:**

1) Causes of **acute upper abdominal pain** : Acute perforated peptic ulcer , acute gastritis , , acute cholecystitis, biliary colic , acute

pancreatitis , intestinal obstruction & mesenteric vascular occlusion , leaking aortic aneurysm , myocardial infarction .

2) **Acute appendicitis** , if there is pain in right iliac fossa .



*** Treatment:** Urgent operation after resuscitation.

A. Resuscitation:

1. Rest in bed, sedation, nothing is taken orally , Ryle's tube suction, I.V. omeprazol , I.V. fluid (guided by urine output , electrolytes & PH estimation) & IV antibiotics.
2. Continuous observation for pulse, temperature, B.P. & abdominal signs.

B) Emergency operation: once the patient is resuscitated

1. Open or laparoscopic **Simple closure** of the perforation:
   - The perforation is covered by omental patch with insertion of

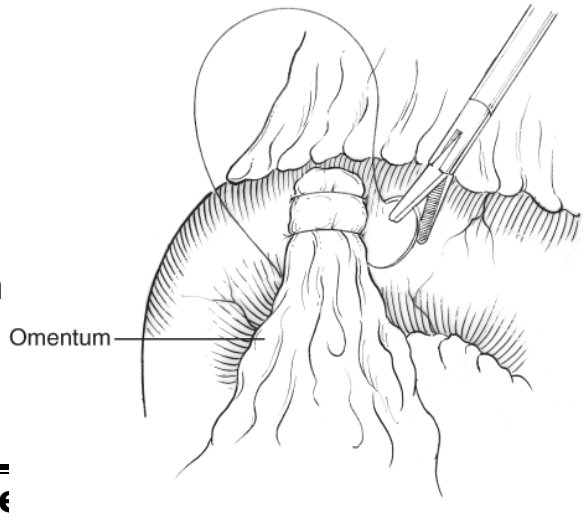
3-4 through and through interrupted non absorbable sutures along the long axis of the duodenum.

- In perforated gastric ulcer , biopsy must be obtained .

2. **A peritoneal toilet** should be done.
3. The peritoneum should be drained as **any peritonitis** by **3 drains** [one in the hepatorenal pouch (in Rt. flank), one in the rectovesical pouch (suprapabic) & one to drain the wound].

C) After surgery , medical treatment for peptic ulcer is the rule.

Laparoscopic closure of the perforation



Source: Minter RM, Doherty GM: *Current Procedures: Surgery:*
http://www.accesssurgery.com

★ **Vagotomy should be** eritonitis cannot stand **long** procedure and to avoid spread of infection to the **mediastinum** .

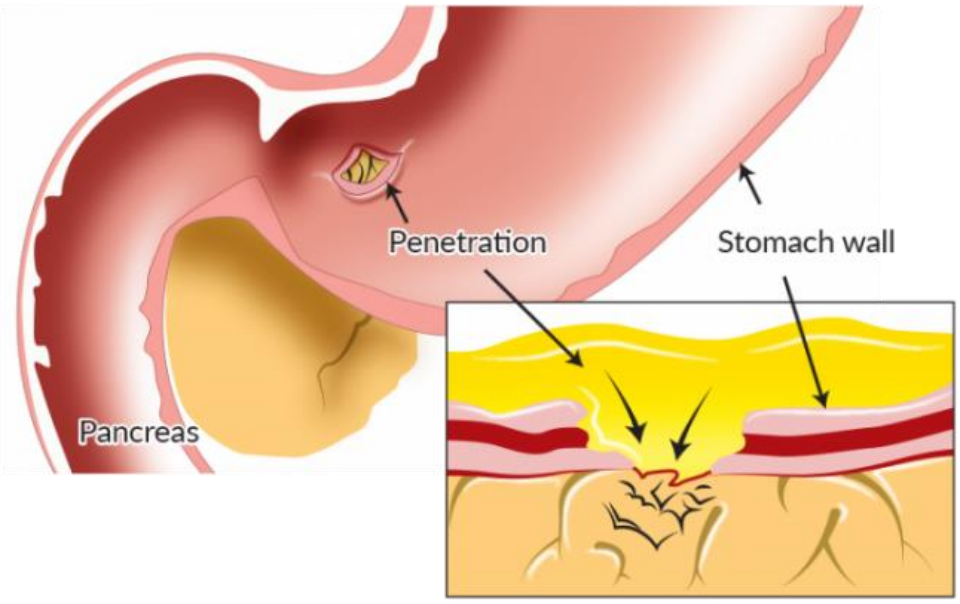
B. Subacute Perforated peptic ulcer

* **Definition:** A leaking ulcer allowing the body to wall the leaking material.
* **C/P:** History of dyspepsia, and epigastric mass.
* **Investigations:** Ba. meal shows gastric compression by a smooth soft tissue shadow.

* **Treatment:** Laparoscopic drainage of the abscess followed by medical treatment .

C. Chronic perforated Peptic ulcer (Penetration)

* **Definition:** A peptic ulcer erods a near by organ.
* **Incidence:**
  - Usually occurs in ulcer in the posterior wall of the stomach or the duodenum → penetration of **pancreas** → severe back pain.
  - Ulcer in the **anterior wall** of the stomach or the duodenum → penetration of the **liver** .
* **Treatment:** Partial gastrectomy without any attempt to separate the ulcer from the pancreas or liver.



Penetration