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 shows inflammatory response but its contents are sterile.
  
  - The inflammatory exudates at first collect in the supra-colic compartment of the peritoneal cavity, but soon the fluid passes 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.
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*Compartments of greater sac*

Spleen
* **Complication:** Peritonitis, paralytic ileus & shock.

* **Clinical Picture:**
  1- There may be *history* of ulcer dyspepsia or perforation may be the *1st 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 pneumoperitoneum.
   - *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.
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➢ 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
perforated peptic ulcer, 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 (suprapubic) & one to drain the wound].

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

Laparoscopic closure of the perforation

* Vagotomy should be avoided as any peritonitis 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.
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* **Treatment:** Laparoscopic drainage of the abscess followed by medical treatment.

C. **Chronic perforated Peptic ulcer**  
   (Penetration)

* **Definition:** A peptic ulcer erods a nearby 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.