Gall- Bladder

Upper GI

Cholelithiasis

Q→ 40 yr old female ē severe colicky pain in the epigastrium radiating to hypochondrium for last 02 hrs. Retching + vomitting - similar episodes in past. Abdomen soft, Tenderness.

↙ Murphy sign (During inspiration, pain in subcostal regio)

↙ Boas sign. (Hyperesthesia to light touch in the right lower scapular region)

Diagnosis → Cholelithiasis

Investigation →

- Leucocytosis
- USG Abdomen
- ERCP
- MRCP
- Radionuclide scan - HIDA scan
- ↑ LFT's - ALP

Rx →

- Admit the Patient
- IV-fluids
- Nill by Mouth
- IV- antibiotics
- Analgesics
- Anti-spasmodics
- Vitals monitoring

* Surgery to be considered after 06 weeks.

Surgery :

Open cholecystectomy :

↓

Complication of open cholecystectomy.

- Damage to hepatic duct
- Damage to CBD
- Biliary peritonitis
- Missed-stone in CBD
- Hematoma
- Infection
- Incisional hernia.

Laparoscopic cholecystectomy.

★ Complication of gall-stone :

In the gall-bladder

Asymptomatic 80%
Biliary Calic
Acute cholecystitis
Chronic cholecystitic
Empyema of gall-bladder
Mucocele
Perforation of gall-bladder
Gangrene of gall-bladder
Carcinoma of gall-bladder.

In Bile-duct

Biliary obstruction
Acute cholangitis
Acute Pancreatitis
Cholangiocarcinoma.

In Intestine.

Gall stone ileus.

Pathogenesis of Gall-stone :

Cholestral stones :-

cause – Female
- Forty >40 yrs
- Fatty (Obesity)
- Fertile (Repeated pregnancies)

Composition
- 20% gall stone
- 05 % mixed stone
- 51-99% – cholestral
  calcium salts
  Bile acids
  Bile pigments
  phospholipid.

Pigment stone :

Less than 30% Cholestral.

Black-Stone

cause – Thalasemia
sickle cell anemia
Hereditary Spherocytosis.

Compasition – Insaluble bilirubin.
calcium phasphate
calcium bicarbonate

Brown pigments

cause :
Infections of biliary tree
Deconjugation
Bilirubin.

Acute Cholecystitis

Q→ 40 yr. lady Known case of Diabetes Mellitus presents with severe pain in upper Abdomin for 02 days, assasiated with vomitting. She has history of food intalerance. O/E she is toxic with pulse 115/mint, Temperature 101°C and has tender globular intra-abdominal mass in the right hypochondrium that moves with respiration? Tip of shoulder / Jaundiced.
(Murphy's sign) (Boas sign)

- Diagnasis - Acute Chalecystitis
- Inuestigate
- Treatment.
- Sequele.

sequele
↓
Resolution
↓
Empyema
↓
Mucocele
↓
Gangrene
↓
Perforation.

Inuestigation:

Abd. Ultrasonography
Leucocytosis
Radionuclide scan
↓
HIDA scan.

Rx:

Conservative:

Admit
NPO
IV-Fluids
Antibiotics
Analgesics
Monitoring vitals.

Surgery :

Early cholecystectomy

Interval chalecystectomy.

Q Steps of Laproscopic Cholecystectomy

General anesthesia
↓
Foley catheter + Orogastric Tube inserted
↓
To avoid inadvertent injury + improve exposure.
↓
Create Pneumo-peritonium
↳ open technique
↳ closed technique.
↓
After creating pneumoperitonium
↓
10mm trocar cannula is inserted sub-umbilically
↓
30° degree laproscope is then inserted through umbilical port.
↓
Then three additional ports inserted
10mm - just below xiphisternum.
5mm - mid-clavicular
5mm - in the anterior axillary line.
↓
Fundus identified + retracted superiorly
↓
Expose + Open Calot's triangle & gently dissection.

cystic duct + cyst artery identifi

↓

clipped with tiny titanium clips

↓

Then gall-bladder is dissected

↓

Removed through ports usually

(epigastric port)

CBD-stones

Q- 40 yr. old Female with Known case of gall-stones presented in OPD with complaint of recurrent right upper quadrant pain. Recently patient has developed jaundice + Fever + rigors. O/E the RUQ is tender.

Diagnosis - CBD Stones. Types
Management
Define Courviser's law.

Types :-

Primary :-

Form within bile ducts

Due To → In response To
* - Infection of biliary tree
* - Parasitic infection of biliary tree.

Usually - Brown pigments

Secondary :-

migrates from gall-bladder To CBD

Usually - Cholestral stones

~~Can cause~~ - Chalangitis
Pancreatitis
Obstructive Jaundice.

Courvoisier's law :

" It states that obstruction of common bile duct occurs due to stone, distension of gall-bladder seldom occurs because repeated cholecystitis cause contraction of organ + Fibrosis. If CBD obstruction occurs due to any other reason (CA Head of pancreas) Cholangiocarcinoma Then gall-bladder may be distended + Palpable

Management →

Investigations :-

Ultrasonography

MRCP

ERCP

Acute cholecystitis - ↑ Bilirubin
↑ ALP
↑ Leucocyte Co

Treatment :

- ERCP
- Chaledochotomy
- T-tube is placed in CBD
+ Duct is closed.
↓
After 7-10 days
T-tube chalangiogram
is performed
↓
* If No distal obstructio
Pt's removed

* If obstruction is there
Pt's removed by
ERCP
PTC
Chaledoscopy
or

Q→ 20 yr-female presents in emergency with severe pain epigastrium for 06 hrs, vomiting + Abd-distension. She is dehydrated, mildly , with pulse 77, pressure 90/60 mmHg RR 21/min

Diagnosis: Fever

↓

Chalangitis

Generalized Abdominal Tenderness

6 months old us shows multiple gall stone.

→ Clinical- Features

↓

Charcot's Triad → Fever

Epigastric or right upper Quadrant pain

Jaundice

Reynold's pentad :→ Fever

Jaundice

Epigastric or right upper Quadrant pain

Septic shock

mental status change

Treatment:

Rx: Admit - NPO

- IV - antibiotics
- IV- fluids
- Analgesics
- ERCP - to remove stone + drain bile.
- PTC - decompress biliary channels

Investigate :-

USG

leucocytosis

Hyperbilirubinemic.

LFT's ↑ ALP ↑

↑ Transaminase.

CA. Gall Bladder

60 yr. old man presents with history of loss of appetite + weight loss with yellow discalouration of his eyes for the last 01 month? Hard-palpable globular mass in the right hypochondrium.

- Diagnosis - CA gall-bladder
- Investigations
- How to prepare a patient for surgery?
- Rx + Complication.

Investigations:

- Ultrasonography Abdomen
- CT-scan Abdomen.
- CA-19.9 ↑ 80% cases
- Anemia
- leukocytosis
- ↑ ESR
- ↑ C-reactive protein

Staging

T_1 - Confined To mucose / submucosa

T_2 - involving the musallaris propria

T_3 - Invalvement of serosa

T_4 - Invasion of liver (IV, V segment) / other organs

Preparing the patient :

Admit the patient in ICU
IV. Fluids
Monitoring of vitals
Oxygenation
Analgesia
Nasogastric aspiration
NPO
Biochemical monitoring - LFT
RFT
Serum Cr
TLC
LDH
Anti-biatic prophylaxis
CT-scan - organ failure
- sepsis

ERCP - Gall stone
- Chalangitis

Nutritional support
systemic support.

Rx :

T_1 → Simple cholecystectomy
Prognosis - 85-100% 5 yrs

T_2 = Extended cholecystectomy

↓

~~Removal of gall-bladder~~

~~segment of IVb + V resection~~

Liver

~~Lymphadenectomy of~~ ✓ cystic duct

(PCP) ✓ Perichaledochal

Portal

(RC) ✓ Right celiac

(PPD) ✓ Posterior Pancreato duodenal

Lymph node.

~~Prognosis 30-70% 5yrs~~

T_3 and T_4 =

~~If no Metastasis~~

↓

Complete tumor excision

Extended right hepatectomy (IV, V, VI, VII, VIII)

Prognosis 20% 5yr

Complication

Wound infection

Bleeding (Intraperitoneal hemmorhage)

Bile leak from cystic duct

Intraperitoneal infection

Common bile duct injury