



NEET-PG

PART-C

VOLUME-I
GENERAL SURGERY



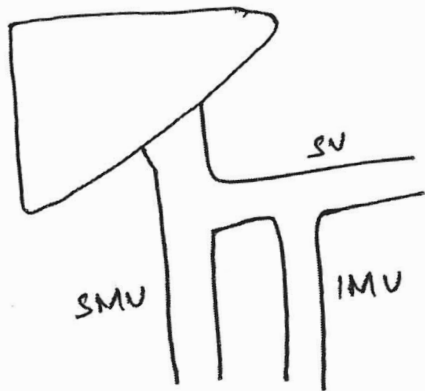
GENERAL SURGERY

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LIVER

- Wt. of Liver in ♂ - 1800 gm
♀ :- 1400 gm
- Glycogen storage capacity :- 65 gm/kg of liver tissue.
- Liver and lungs are having dual blood supply
- Liver supplied by - Portal vein :- 75% → 50-70% O₂ supply ^{O₂ supply} DNR
Hepatic artery :- 25% → 30-50% O₂ supply
- Only organ in the body have property of Regeneration



* If a branch of portal vein ligated then Hepatic artery ↑ blood supply to the liver but not the Vice-versa.

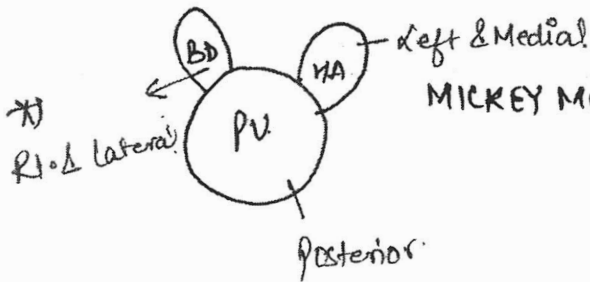
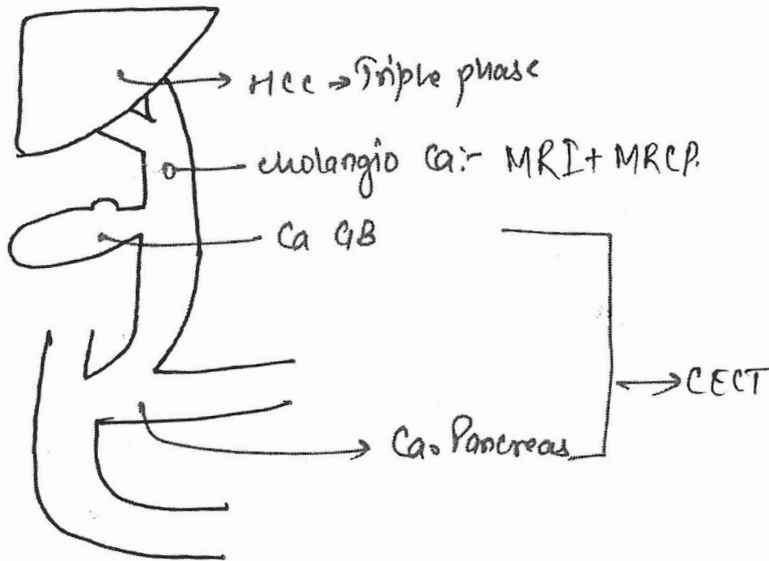
* HCC is supplied by ONLY BRANCHES OF HEPATIC ARTERY.

* Doc for Dx of HCC :- TRIPLE PHASE CT

*) Diagnostic criteria :- ARTERIAL PHASE HYPERSIGNALIZAN & VENOUS WASHOUT

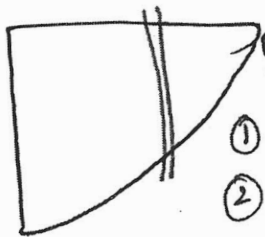
*) In Hepato biliary pancreatic Tract - Malignancy of Adult - FNAC OR Bx is not mandatory for Dx.

*) diagnosis made by radiological Ix

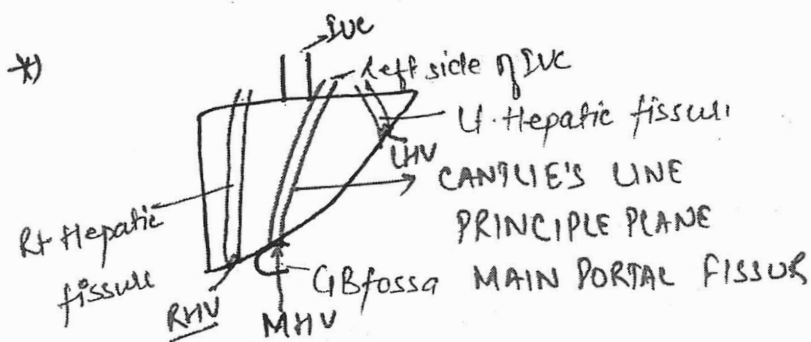


MICKY MOUSE :- Portal Triad appears as Mickey Mouse on USG

*) COINAUD DIVIDED LIVER ON THE BASIS OF:-

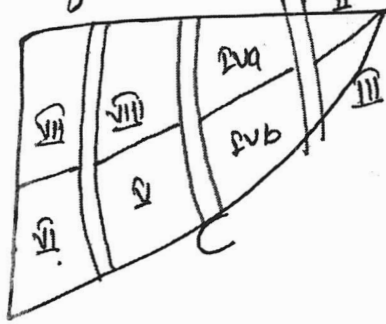


- ① PV & HA
- ② PV & HV ✓
- ③ HA & HV
- ④ PV, HA, BD



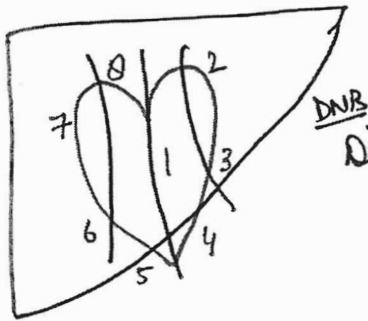
LHV - Lt Hepatic vein
 MHV - Middle Hepatic vein
 RHV :- Rt Hepatic vein.

Segment of liver



* Segment of liver in Relⁿ to GB involved @ Early stage in Ca. GB, routinely removed during Extended cholecystectomy :- IVb & V.

*)



Segment I :- posterior inferior

Distribⁿ of segment of liver :- Anti-clockwise dirⁿ

* Rt. lobe of liver contains :- Segment 5, 6, 7, 8

* Lt. lobe of liver " :- Segment 2, 3, 4

* Rt. Anterior sector contain :- Segment 5, 8

Rt. posterior " " :- 6, 7

Lt. Anterior sector " :- 3, 4

Lt. posterior sector is the only sector \subseteq contain single segment :- 2

Lt. Hemihepatectomy :- involved removal of segment 2, 3, 4

Rt. " :- " " " " " " 5, 6, 7, 8

TRISEGMENTECTOMY (Mishonem) is aka Extended Hepatectomy.

Rt. Trisegmentectomy involve removal of :- 5, 6, 7, 8 + 4 ⁹ 6

L. Trisegmentectomy " :- 2, 3, 4 + 5 & 8 ⁹

- 3 MINOR fissure :-

① Umbilical fissure

② Venous fissure

③ fissure of GANGLIA

AIMS :- In liver there are :- which are in correct :-

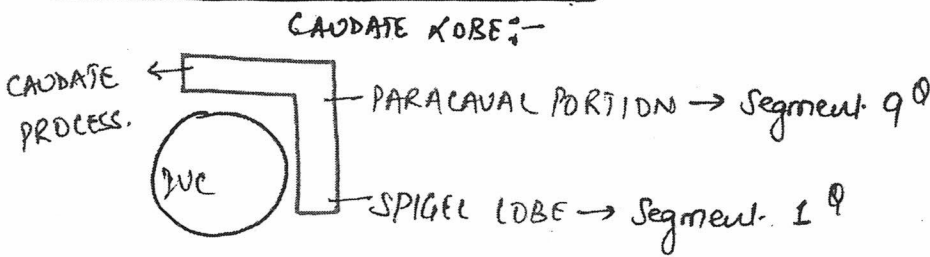
① 3 Major fissure

② 3 Minor fissure

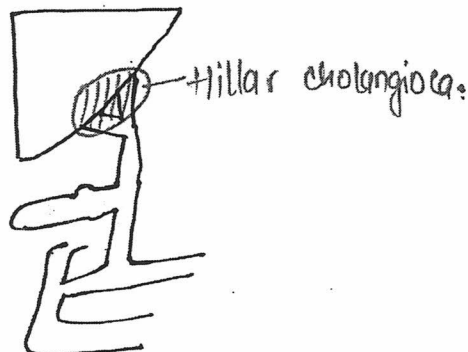
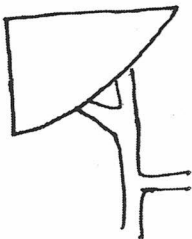
③ 4 Sectors.

④ 8 Segments. ✓

Q :-
 Segment 1 :- CAUDATE LOBE
 Segment 4 :- QUADRATE LOBE



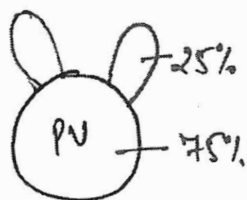
Q :-



* Caudate lobe: Receive Blood supply from ⁴ Both Rt. & Lt. Branch of Portal vein

- It gives its Biliary drainage to both Lt. & Rt. Hepatic duct.
- Venous drainage goes directly to inferior Vena Cava.
- In Budd Chiari Synd. Caused by Hepatic vein thrombosis most of liver is affected but Caudate lobe is spared. in this liver is atrophied but Caudate lobe is hypertrophy.
- Early involvement of Caudate lobe in Hillar cholangio Ca. occurs. that's why → ROUTINE CAUDATE LOBECTOMY performed in Hillar cholangio Ca.

DNB PRINGLEE MANEUVER AKA (TOTAL INFLOW OCCLUSION)



:- It's placement of clamp @ foramen of Winslow.

- It control bleeding from PV & HA
- It doesn't control bleeding from IVC & HV.

→ Bleeding is effectively control from

PV

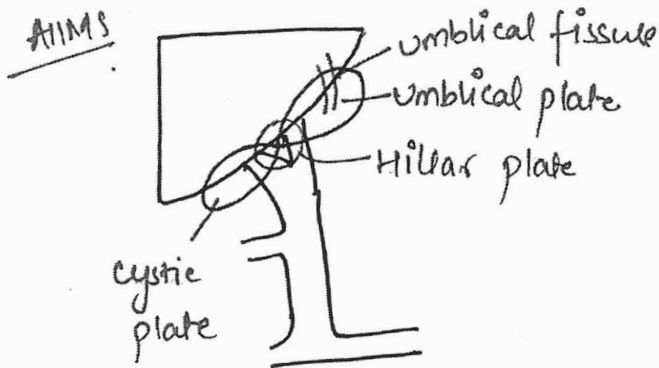


→ ∴ PV have low pressure

* Which of the following ^{is not} fascial plate of liver.

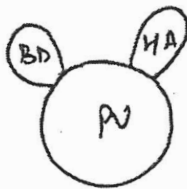
- ① Cytic plate
- ② Portal plate ✓
- ③ Hillar plate
- ④ Umbilical plate

fascial plate :- formed by condensation of Endo-Abdominal fascia near inferior aspect of liver



*** PYOGENIC LIVER ABSCESS :-**

- Liver is MC solid organ involved by abscess
- Pyogenic Liver Abscess :- MC type of liver abscess.
 - Male, 5th/6th decades.
 - Alcoholics.



:- MC ROUTE :- BILE DUCT > PV.

→ MCC :- CHOLANGITIS.

↳ eska MCC :- CBD stone

→ Western :- cholangioca.

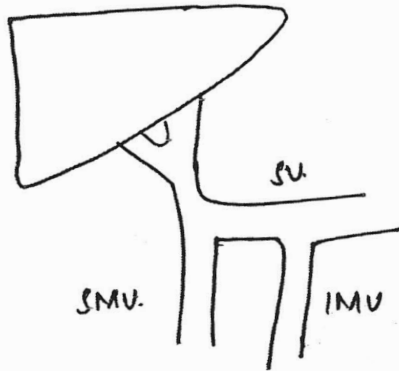
→ MC Organism :- E. COLI > KLEBSIELLA





*) Appendicular perfora' @ diverticulitis.
↓ KIT

PYOGENIC LIVER ABSCESS.



JIPMER
*) 3rd ROUTE:- Hepatic Artery :- Imp. ROUTE IN CHILDREN suffering from CHRONIC GRANULOMATOUS D'S.
*) organism:- STAPH AUREUS

*) 4th ROUTE:- DIRECT EXTENSION OF INFECTION.

① PYOTHORAX



② SUB-PHRENIC ABSCESS.

③ Ac. Suppurative abscess

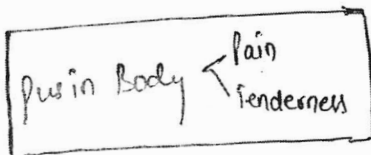
④ PERINEPHRIC ABSCESS

Q :- MC organism responsible for pyogenic liver abscess:-

*) World wide:- E. COLI

*) ASIA :- KLEBSIELLA

*) CHILDREN suffering from ch. granulomatous D'S
S. AUREUS.



Clf :- MC symptom :- fever & chills & Rigor

*) Abdominal pain

*) Anorexia

*) fatigue.

(PCI)
*) jaundice is common in pyogenic liver abscess (20-25%)

*) MC LFT abnormality:- ALP.
in PLA

*) 1st L₂ done in suspected case of Hepato biliary pancreato D's :- USG.

*) Abs is highly suggested by :- USG & CT.

*) Abs confirmed by :- Aspiratⁿ & culture (Poc)

*) ROE OF PLA:-



1) percutaneous aspiraⁿ

2) percutaneous catheter drainage ✓
+ systemic antibiotic.

3) Poc for follow up of uncomplicated liver abscess :- USG.

*) - AMOEBIC LIVER ABSCESS -

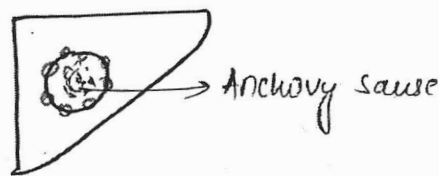
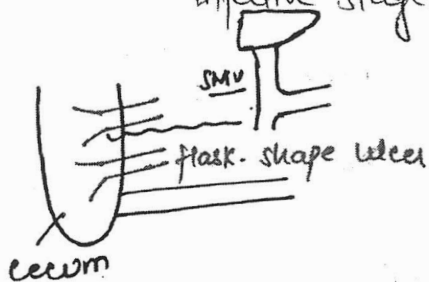
MCC → ENTAMEBA HISTOLYTICA

- MC in developing country.

- MC in young pt.

- MC Route :- feco-Oral.

- Infective stage :- Quadrinucleate cyst.



- MC site of Amebic colitis :- cecum & Ascending colon & formaⁿ of flask shape ulcer

- Collecⁿ of reddish brown fluid d/t necrosis of hepatocyte & WBC :- ANCHOVY SAUCE



Chf:- Mc symptom :- Abdominal pain

- 1) fever
- 2) Anorexia
- 3) fatigue
- 4) Jandice is Rare

Lx :- 1) 1st Lx done :- USG.

2) Abs is highly suggested by :- USG & CT

3) Abs is confirmed by :-

- 1) Aspiraⁿ + culture → for pyogenic liver abscess.
- 2) Blood culture
- 3) stool culture
- 4) Serology. ✓

4) DxC :- SEROLOGY BY ELISA

Rx :- 1) DxC :- HIGH DOSE ORAL METRONIDAZOLE 750mg TDS X 10-14 day.

↓ pt. become asymptomatic in

3-5 day

↓ Radiological Resolution of Abscess cavity

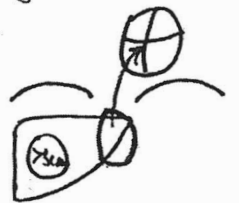
3-9 months

(∴ do not treat the cavity, treat the pt.)

2) Indicaⁿ of Aspiraⁿ :- 1) No improvement in 3-5 days

2) High Risk abscess :- 1) Size > 5cm

2) left lobe Abscess.



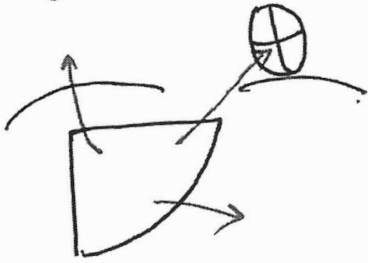
3) Diagnostic uncertainty

4) 2° Bac. infecⁿ

5) Pregnancy (∴ High dose Metronidazole is not indicated)
∴ It's not safe.



*3 Site of Rupture:-



- MC complicaⁿ:- Rupture into peritoneal cavity > Pleural cavity, pericardial cavity

- Rx of Rupture into peritoneal cavity:- Exploratory lapotomy
 ⊕
 Peritoneal lavage
 ⊕
 Drainage inserⁿ

- Rx of ^{Rupture into} Pleural cavity:- ICB ⊕ chest tube inserⁿ

- Rx of ^{Rupture into} pericardial cavity:- Pericardiocentesis + drainage by pericardiostomy

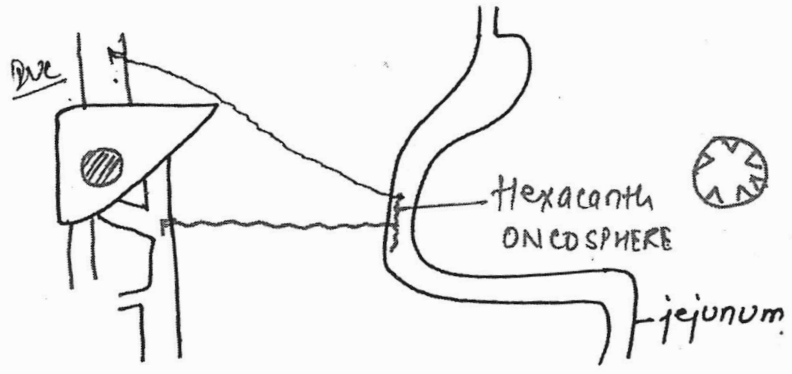
- for asymptomatic cyst passer:- Intraluminal agents given:-

- ① PAROMOMYCIN
- ② IODOQUINOL (PID)
- ③ DILOXANIDE FURATE

HYDATID CYST

- Zoonoses
- Sheep Grazing area :- Australia, New Zealand, East Africa, South America.
- ECHINOCOCCUS GRANULOSUS
- E. MULTICULARIS - Responsible for Malignant Hydatosis.
- E. VOSELLI
- E. OLKARTHUS

- * definitive host (sexual phase occurring)
- * Intermediate host :- SHEEP
- * Accidental, Dead End. Intermediate host ^Q could. Human to human transmission ^B :- MAN
- * Route :- feco-oral
- * Infective stage :- Eggs of echinococcus.

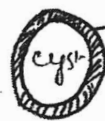


* Organ involved :- LIVER > LUNGS > SPLEEN > KIDNEY > BRAIN > BONE

* CH :- Mostly asymptomatic

- ↳ MC presentaⁿ :- asymptomatic palpable intra abdominal Mass.
- Other :- abdominal discomfort
abdominal pain
dyspepsia

* Exr USQ :-  Cyst in cyst :- ROSETTE^Q

CT :-  RING LIKE CALCIFICATION^Q

Loc :- Serology - ELISA
- RIA-S
- Immunoblot } 79.5% Sensitivity & specificity.

^Q CASONI'S TEST :- 55-60% sensitivity
↳ Absolute :- ^Q
↳ low sensitivity
↳ Anaphylaxis

* Doc for peri. operative chemoprophylaxis:-

ALBENDAZOLE
MEBENDAZOLE

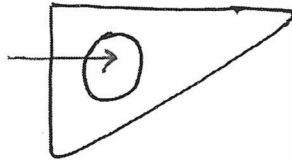
Advantage:-

- ① Scolicidal
- ② shrink the size of cyst

- Rx:-
- ① PAIR - Most preferred Rx for Anatomically & surgically appropriate lesion
 - ② CYST EVACUATION + OMENTOPEXY :- ~~Most Radical Rx~~
 - ③ PERICYSTECTOMY - Most Effective
 - ④ HEPATIC RESECTIONING :- Most Radical Rx

PAIR:-

- 1) Aspiraⁿ of content
- 2) Instillaⁿ of scolicidal agent.
- 3) Reaspiraⁿ



Scolicidal agent used:-

- ① HYPERTONIC SALINE (20%) :- MC used.

- Hypertonic Saline in IV :-
- 0.9%
 - 3%
 - 5%
 - 10%
 - 20% ✓

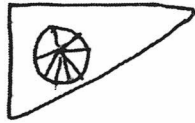
* not used

formaline
silver nitrate

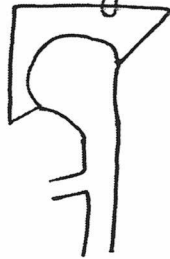
- ② 0.5% CETRIMIDE & 0.05% CHLORHEXIDINE
- ③ ABSOLUTE ALCOHOL
- ④ 10% POVIDONE IODINE

* CIL of PAIR:-

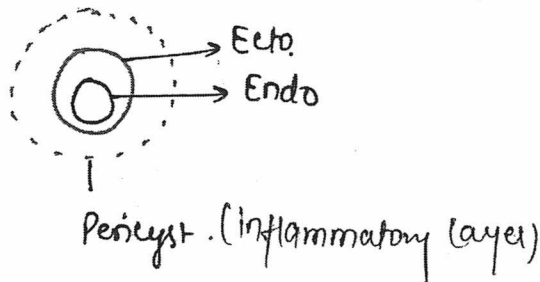
- ① Inaccessible cyst
- ② Peripherally located cyst (∴ Easily Rupture)
- ③ Multiloculated / Multi-septated cyst



④ Cysto-Biliary communication?

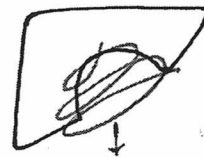
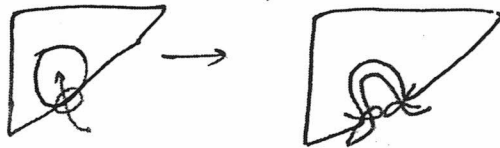


⑤ Cyst in Brain & Lungs.



⑥ Calcified cyst.

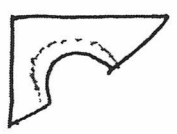
② Cyst Evacuaⁿ & Omentopexy:-



Obliteration of cyst cavity & the help of suture by two methods:-

- ① Capitonage
- ② Interoplexion.

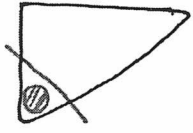
③ Pericystectomy :- for Recurrance cyst



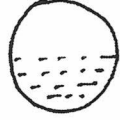
- Excision of cyst from outside of pericyst-


④ Hepatic Resecⁿ :- Radical


- Reserved for Recurrence cyst-




* GHARBI'S CLASSIFICATION (USG)


I :-  Simple fluid collecⁿ

II :-  floating membrane
 undulating "
 water lily sign
 water snake sign

III :-  MULTI-loculated
 Multi-septated.
 HONEY-COMBING :- Hydatid cyst-

HONEY-COMB LIVER :- ACEDNOMYCOSIS

IV :-  Complex Heterogenous mass

V :-  :- Calcified cyst-



* In Amoebic liver Abscess

Pyogenic ~ "

Hydatid cyst-

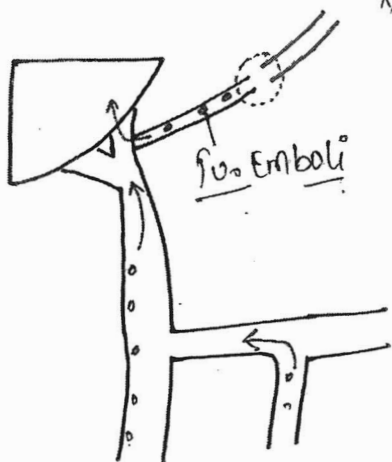
- usually the cavity is single
- MC involved Rt-lobe
- CXR changes are similar

CXR changes :-

- 1) Atelectasis :- collapsed of (R) lung.
- 2) raised (R) Dome of diaphragm.
- 3) Reactive pleural effusion.

LIVER MALIGNANCY

- 1) MC Malignancy of liver :- Metastasis.
- 2) MC 1^o Malignancy of liver :- HCC
- 3) MC 1^o Malignancy of liver in children :- Hepatoblastoma
- 4) MC Benign tu. of liver :- Hemangioma.



* from Eso. to Ano-Rectal junct.
tu. spread to liver.

* Any organ out side GIT
eg. Ca. Anus :- lung.

- In GI malignancy having Hematogenous spread (Eso. HI Rectum) - MC site of Metastasis - LIVER

In NON-GI Malignancy having Hematogenous spread - MC site :- Lung
→ Ca. Anal canal, RCC, Testicular tu., Ca. Penis, soft tissue sarcoma

LIVER Metastasis:-

I :- Colo-Rectal Ca > Ca. Lung.

I. MC Malignancy in σ :- Prostate > Lung > Colon II. " " " " \pm :- Breast > Lung > Colon	Incidence Mortality L > P > C L > B > C
---	--

III. Over all MC Malignancy ^{in WORLD} :- LUNG.
 (Both in σ + ϕ)
 IV. " " " " \pm Mortality :- LUNG.
 (σ + ϕ) WORLD

* Ca. Lung is MC primary for metastasis to

- K - Kidney
- E - Esophagus.
- P - Pancreas
- A - Adrenal (MC)
- B - Brain
- S - Skin.

* MC site of Metastasis from Ca. Lung :- Adrenal

* " " " " " Small cell Lung Ca :- BRAIN

⇒ BREAST CA. MC ϕ for Metastasis to :-

- T :- Thyroid
- L :- Lung
- C :- Leptomeninges.

⇒ Metastasis to Heart :-

- σ :- Ca. Lung
- ϕ :- Ca. Breast.