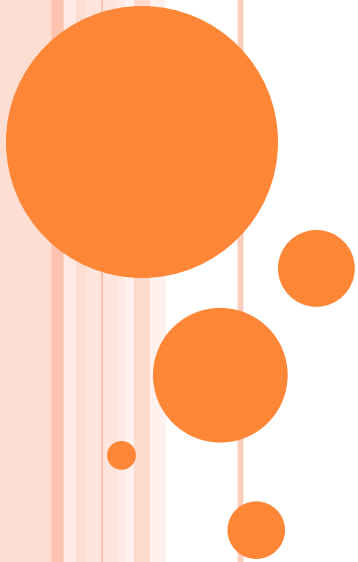


HYDATID CYST DISEASE



INTRODUCTION

- Hydatid disease in people is mainly caused by infection with the larval stage of the dog tapeworm *Echinococcus granulosus*. It is an important pathogenic, zoonotic and parasitic infection (acquired from animals) of humans, following ingestion of tapeworm eggs excreted in the faeces of infected dogs.



ADULT WORM



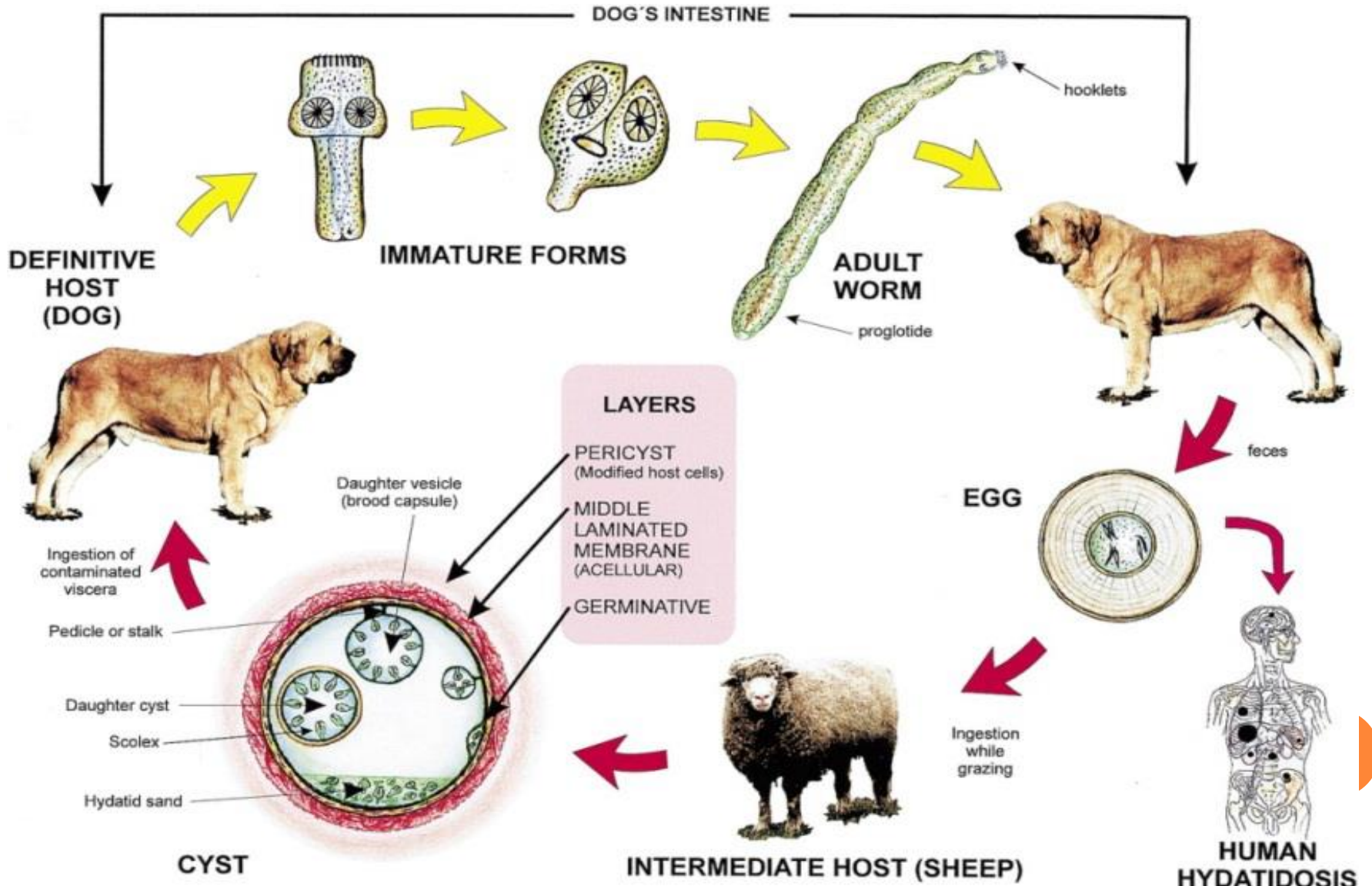
- Cystic hydatid disease usually affects the liver (50–70%) and less frequently the lung, the spleen, the kidney, the bones, and the brain
- *Echinococcus granulosus* is spread almost all over the world, especially in areas where sheep are raised, and is endemic in Asia, North Africa, South and Central America, North America, Canada and the Mediterranean region.



- In many countries, hydatid disease is more prevalent in rural areas where there is a closer contact between people and dogs and various domestic animals which act as intermediate vectors.



LIFE CYCLE OF HYDATID DISEASE



LAYERS OF HYDATID CYST

○ **Pericyst or adventitia** fibrous tissue induced by the expanding parasitic cyst

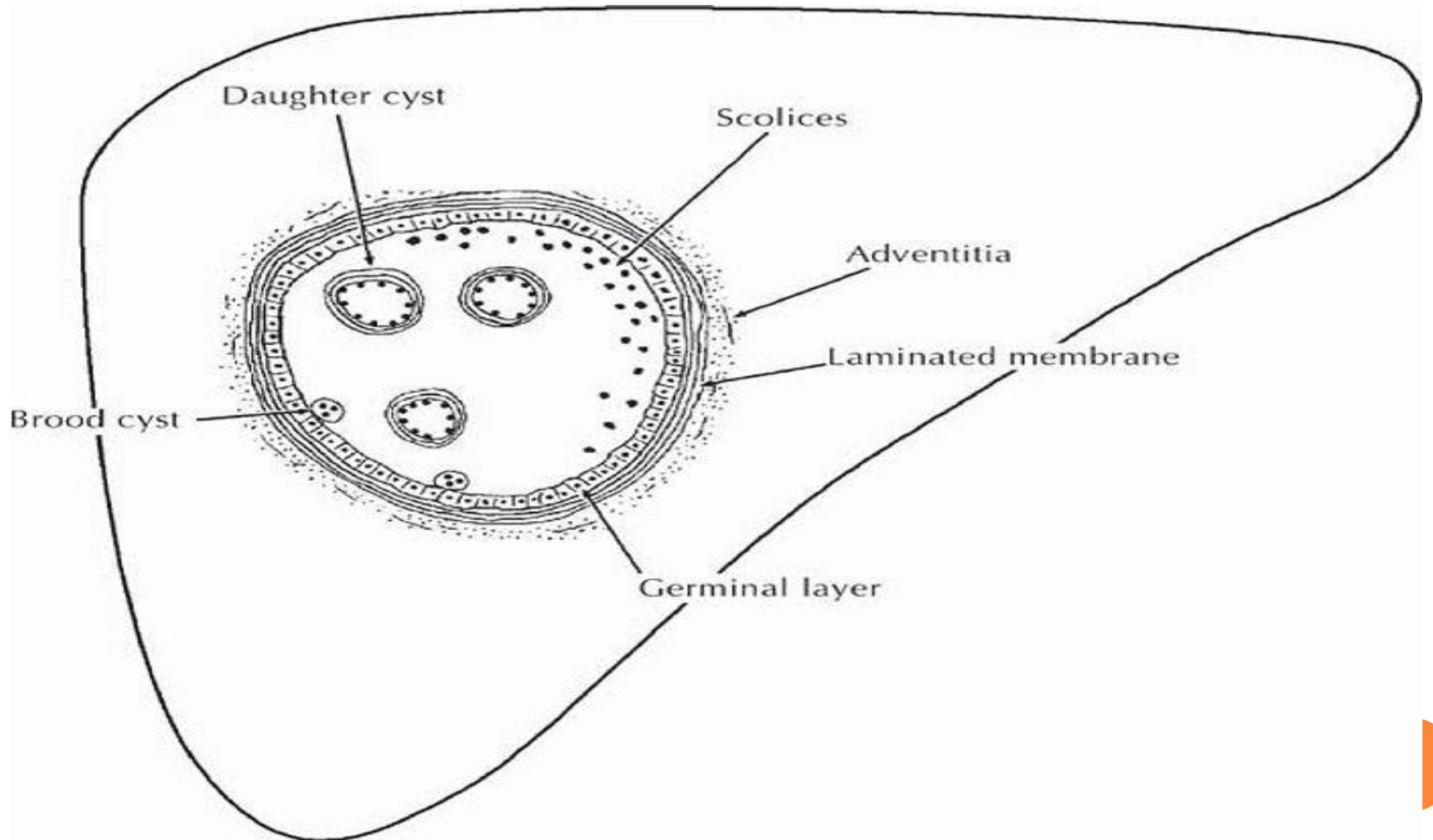
○ **The ectocyst or laminated layer**

is elastic white covering, easily separable from the adventitia.

○ **Germinal layer or endocyst**

is a single layer of cells lining the inner aspects of the cyst and is the only living component, being responsible for the formation of the other layers. The germinal layer produces clear fluid which attains a pressure of up to 300 mm of water, keeping the endocyst in intimate contact with the pericyst. The endocyst receives its substance from the pericyst.

HEPATIC HYDATID CYST (PATHOLOGY AND LAYERS)



WHO CLASSIFICATION :

- Group 1: Active group – cysts larger than 2 cm and often fertile.
- Group 2: Transition group – cysts starting to degenerate and entering a transitional stage because of host resistance or treatment, but may contain viable protoscolices.
- Group 3: Inactive group – degenerated, partially or totally calcified cysts; unlikely to contain viable protoscolices.



CLINICAL PRESENTATION :

The clinical features are highly variable. The spectrum of symptoms depends on the following:

- Involved organs
- Size of cysts and their sites within the affected organ or organs
- Interaction between the expanding cysts and adjacent organ structures, particularly bile ducts and the vascular system of the liver
- Symptoms due to pressure usually take a long time to manifest, except when they occur in the brain .

- Most symptomatic cysts are larger than 5 cm in diameter.
- Bacterial infection of cysts and spread of protoscolices and larval material into bile ducts or blood vessels
- Immunologic reactions such as asthma, anaphylaxis, or membranous nephropathy secondary to release of antigenic material



:CLINICAL PRESENTATIONS (HEPATIC)

- Hepatic hydatid cyst grow slowly and asymptomatic thus tend to be quite large at presentation .
- Often discovered incidentally during diagnostic work up for un related complaint .
- Symptomatic patients commonly complain of mild right upper quadrant (RUQ) pain and dyspepsia.

Presenting Sign or Symptom

Abdominal pain and/or tenderness

Abdominal mass

History of fever

History of jaundice

Pruritis, rash, or urticaria

Anaphylaxis

Asymptomatic

- In case of severe abdominal pain it may indicate rupture, biliary complication, or secondary bacterial infection.
- In case of fever with chills and jaundice indicate intra biliary rupture causing obstruction and cholangitis.
- Urticaria .



COMPLICATIONS OF HEPATIC HYDATID CYST

- Rupture A-internal
 - B- external ...intrabiliary
 - ...intrathoracic
 - ...intraperitoneal
- Pressure effect; e.g obstructive jaundice
- Secondary infection
- Allergic reaction A.urticatia
 - b-brochospasm
 - c-Anaphylaxis
 - d –eosinophilia
- organ dysfunction :cholangitis ,biliary cirrhosis .hepatic failure .
- Spread ,recurrence .



INVESTIGATIONS

○Laboratory

hematological test :elevated total leucocyte count ,
esinophilia.

Liver function test .

Renal function test.

Serological tests :

(IHT),CFT, ELISA,IFAT.

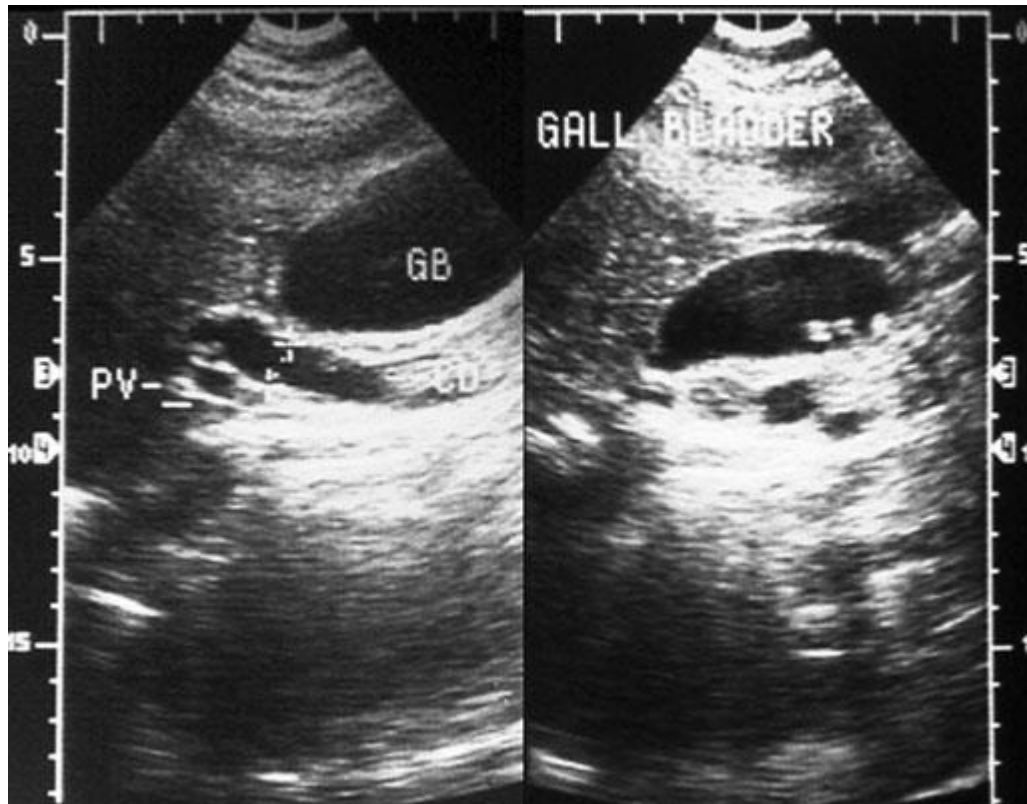


IMAGING STUDIES

- **Plain x-ray** of abdomen :elevated right hemidiaphragm ,calcification of cyst.
- **C.X.R:** to exclude lung hydatid cyst.
- **Ultrasonographic** study
- **The most important thing is the CT scan of abdomen .**
- **ERCp,MRCp,MRI:**for obstructive jaundice,cholangitis.

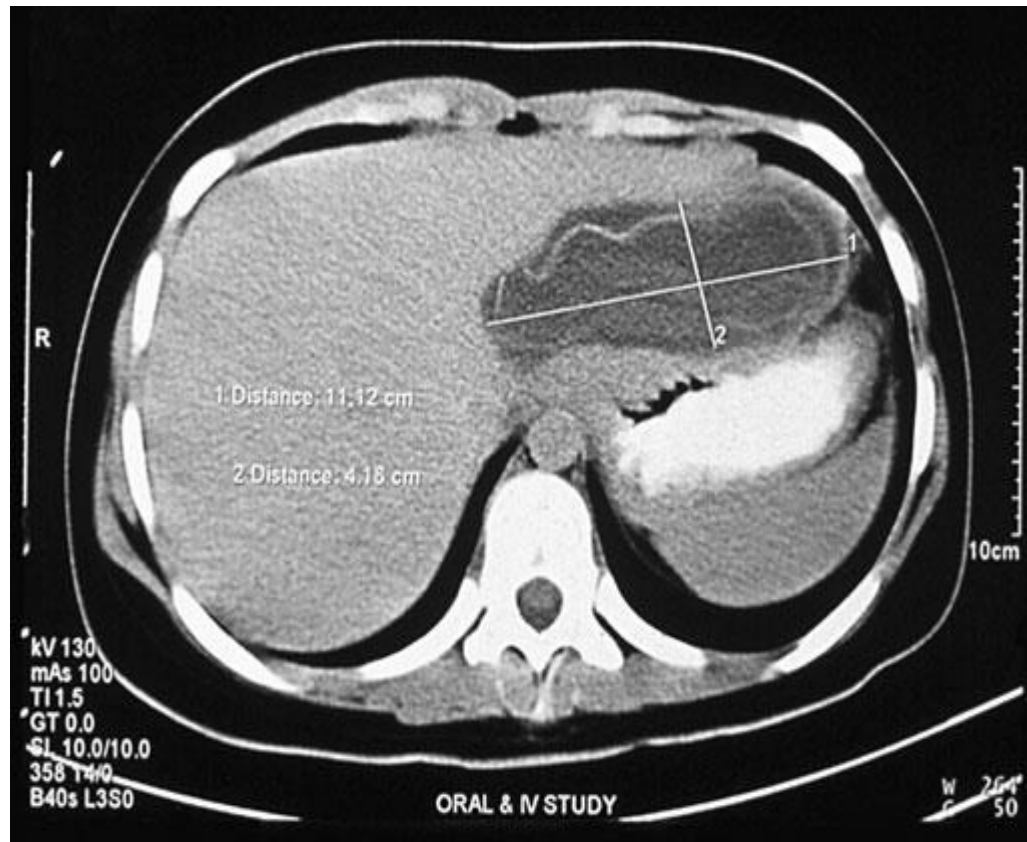


ULTRASOUND OF THE GALL BLADDER (GB) AND COMMON BILE DUCT (CBD) SHOWING A DILATED CBD. THE PATIENT PRESENTED WITH JAUNDICE FROM SLUDGE IN THE CBD DUE TO DAUGHTER CYSTS TRAVELLING DOWN BILIARY CHANNELS IN COMMUNICATION WITH CYST.



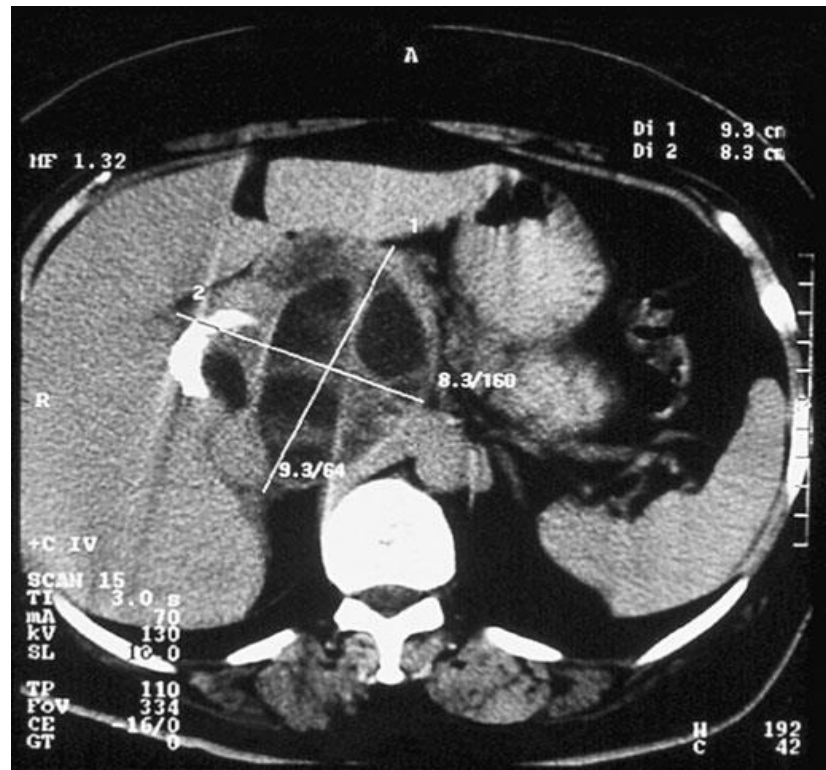


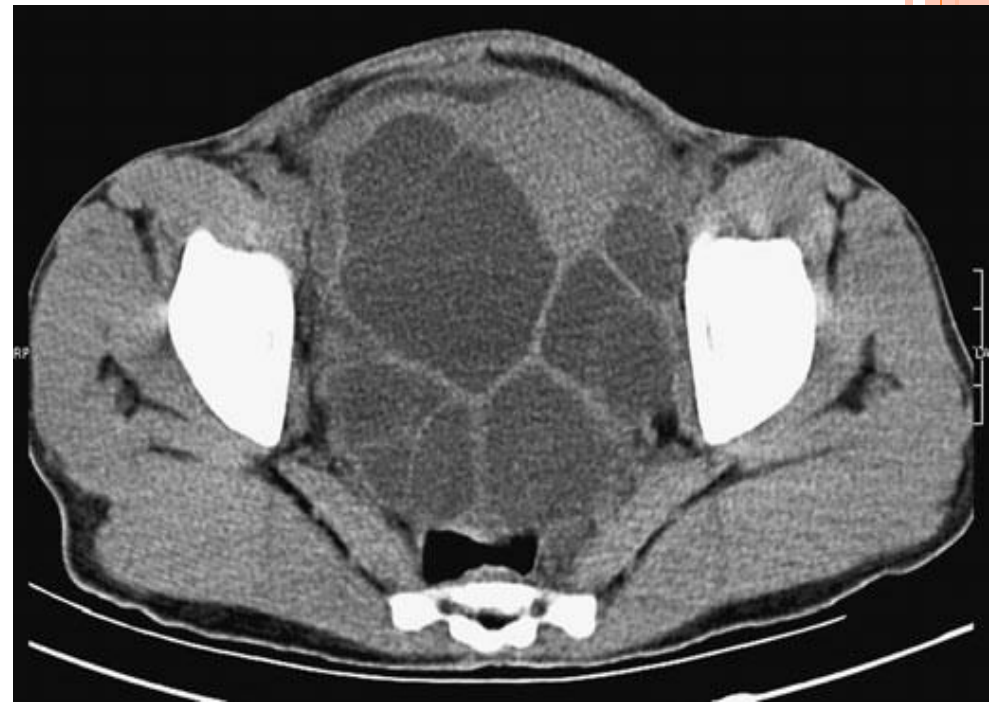
COMPUTERISED TOMOGRAPHIC (CT) SCAN OF THE UPPER ABDOMEN SHOWING A HYPODENSE LESION OF THE LEFT LOBE OF THE LIVER



CT scan showing liver
hydatid cyst

(CT) scan showing a
hydatid
cyst of the pancreas.





Computerised tomographic (CT) scan showing disseminated hydatid cysts of the abdomen (a) and pelvis (b). The patient was started on albendazole and lost to follow-up

**MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY (MRCP)
SHOWING A LARGE HEPATIC HYDATID CYST WITH DAUGHTER CYSTS
COMMUNICATING
WITH THE COMMON BILE DUCT CAUSING OBSTRUCTION AND
DILATATION OF THE
ENTIRE BILIARY TREE**



TREATMENT OF HYDATID DISEASE

○ Medical treatment (antihelemthics)

Indication Concurrent pulmonary or disseminated disease.

..... Multiple

..... Recurrent

..... inaccessible

..... Intraoperative dissemination

..... unfit for surgery .

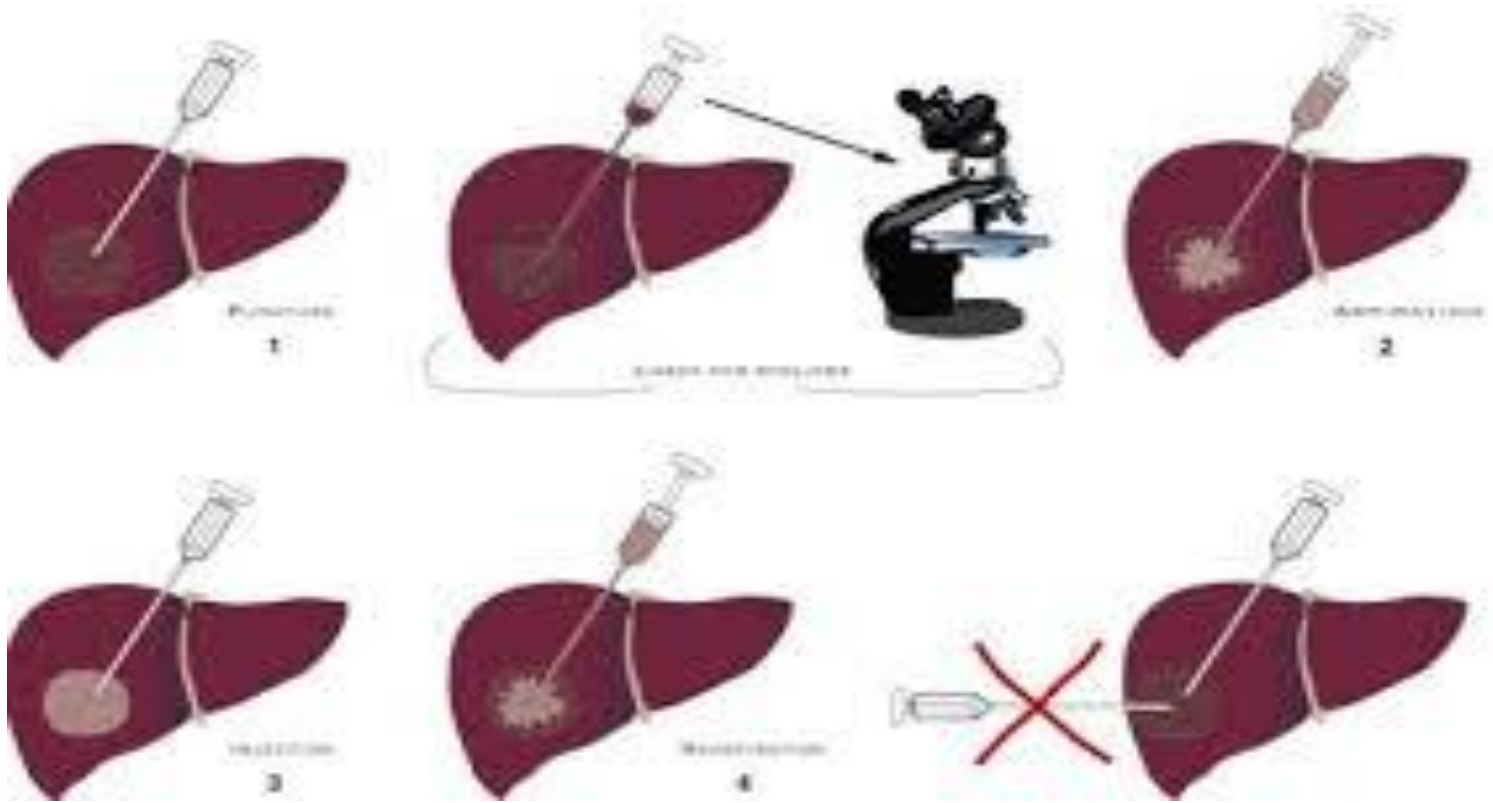


- Albedazole 10-15mg/kg in 2divided doses for 28days .
- Praziquantil 40mg /kg +albedazole
- Membadazole 40-50 mg/kg for 6 to 12/24 months.



- PAIR (Puncture,Aspiration,Injection,Re-
aspiration).
- **Indication for PAIR:**
 - Refusal of surgery
 - Inoperable cases
 - Multiple cysts ≥ 5 cm diameter in
different liver segments .
 - Relapse post surgery .
 - Lack of response to chemotherapy





- **Contraindication to PAIR :**
- In accessible or hazardous location of cyst .
- Dead in active cysts
- **Complications:**
- Urticaria ,fever , anaphylaxis ,biliary fistula subcapsular haematoma ,hypotension shock.



SURGICAL TREATMENT OF HEPATIC HYDATID DISEASE

- **Indication for hepatic surgery :**
- Large cysts with suspected multiple cysts.
- Superficial cysts with risk of spontaneous or post traumatic rupture .
- Secondary bacterial infection of cyst .
- Cystobiliary communication
- Pressure effects an adjacent .



○ Contraindication to hepatic surgery

- In operable cases
- Difficult access to cyst
- Dead cyst
- **Surgical procedures for the treatment of hepatic hydatid disease:**
- open
-total or partial pericystectomy
-Marsupialisation and tube drainage with omentoplasty .
- Partial resection partial hepatectomy
- Laparoscopic procedure





Complication of hepatic hydatid surgery


- Biliary leak .
- biliary fistula .
- Infection of residual cavity.
- Cholangitis

Example of scolicedal agent :

- **20% hypertonic saline .**
- **Absolute alcohol**
- **Povidone iodine .**



PULMONARY HYDATID DISEASE

- The lung is the second most common organ affected after the liver. The size of the cyst can vary from being very small to considerable size.
 - The right lung and lower lobes are slightly more often involved. The cyst is usually single.
 - The condition may be silent and found incidentally. Symptomatic patients present with cough, expectoration, fever, chest pain and sometimes haemoptysis. Silent cysts may present as an emergency due to rupture or an allergic reaction.
- 

- Uncomplicated cysts present as rounded or oval lesions on chest x-ray.
- Erosion of the bronchioles results in air being introduced between the pericyst and the laminated membrane gives a fine radiolucent crescent



- The mainstay of treatment of hydatidosis of the lung is surgery.
- Medical treatment is less successful and considered when surgery is not possible because of poor general condition or diffuse



Thank you

