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MANAGEMENT OF RECURRENT HYDATID CYST OF LIVER BY MINIMALLY INVASIVE METHODS

UNIT V

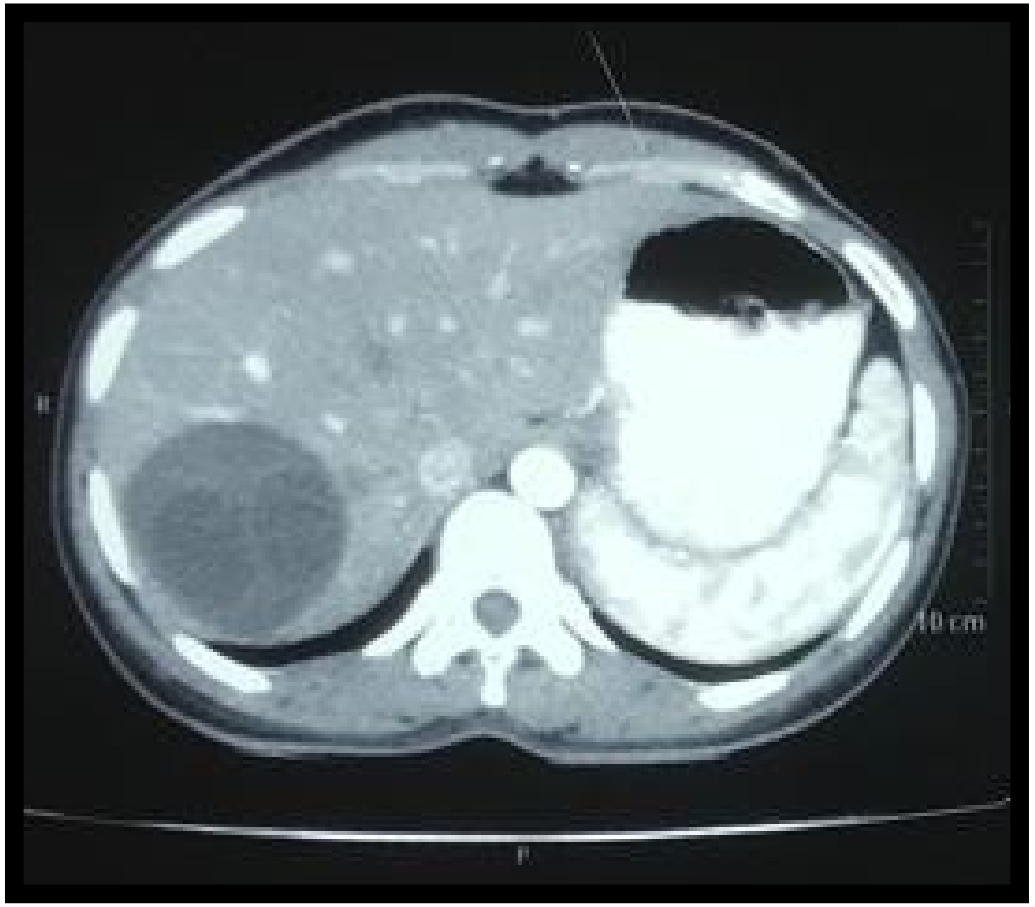
DEPARTMENT OF GENERAL SURGERY

CASE REPORT

- 45/F patient was admitted at our center in the first half of 2019 with:
  - **Pain in abdomen localized to the right upper abdomen – Since 1 month**
  - **Associated with low grade fever.**
  - **Occupation- farmer. She had a pet dog.**
- On Clinical Examination :
  - BMI – 23kg/m^2
  - Mild tenderness in the Right Hypochondrium.
  - Mild hepatomegaly – Liver span : 15cms,
  - Rest of the examination – was within normal limits

CASE REPORT

- All routine biochemical investigations – within normal limit.
- Ultrasonography (Abdomen + Pelvis) – A **6.2 x 6.0 cms hypoechoic lesion in the right lobe of liver in segment VII and VIII.**
- Contrast Enhanced CT Scan of abdomen and pelvis – a **Hypodense lesion of size 7.4 x 6.5 cms with internal septations** ? Hydatid Cyst in the segment VIII of liver – No cyst- biliary communication.
- **Post diagnosis with hepatic hydatidosis patient was started on Tab Mebendazole 400mg twice daily * 4 weeks**



CECT (ABDOMEN + PELVIS) AT THE TIME OF ADMISSION

CASE REPORT

- Exploratory laparotomy done through **Extended right subcostal incision.**
- **The cyst was located deep in the parenchyma of segment VIII with part of cyst wall adherent to parietal peritoneum.**
- **The cyst was isolated from the peritoneal cavity with mops soaked in formalin to prevent spillage and recurrence.**
- **Right triangular ligament was cut to mobilise the right lobe.**
- **The cyst wall was punctured with a wide bore needle and fluid aspirated.**
- **Pericyst incised.**
- **All daughter cysts were removed – germinal layer of cyst was excised - Irrigation of the cyst cavity was done with dilute hydrogen peroxide with 7% betadine**
- **Omentoplasty done**.
- **Histopathological examination was consistent with Hydatid cyst.**

INTRA-OPERATIVE FINDINGS ON EXPLORATORY LAPAROTOMY

INTRA-OPERATIVE IMAGE SHOWING EVACUATED DAUGHTER CYSTS

CASE REPORT (FOLLOW UP)

- The patient was discharged and kept on regular follow up.
- During one of her follow up visits at 6 months, she presented with complaints of **Pain in the Right Hypochondrium since 10 days** with reduced apetite.
- The pain was insidious in onset, non radiating with no aggravating or relieving factors.
- There were no associated complaints.

CASE REPORT - EXAMINATION

- Patient was vitally stable..

- Per Abdomen Examination :

    - Tenderness present at right hypochondriac region.
    - Mild Hepatomegaly – Liver span : 13 cms.
    - Rest of the examination was within normal limits.

- Systemic Examination : Within normal limits.

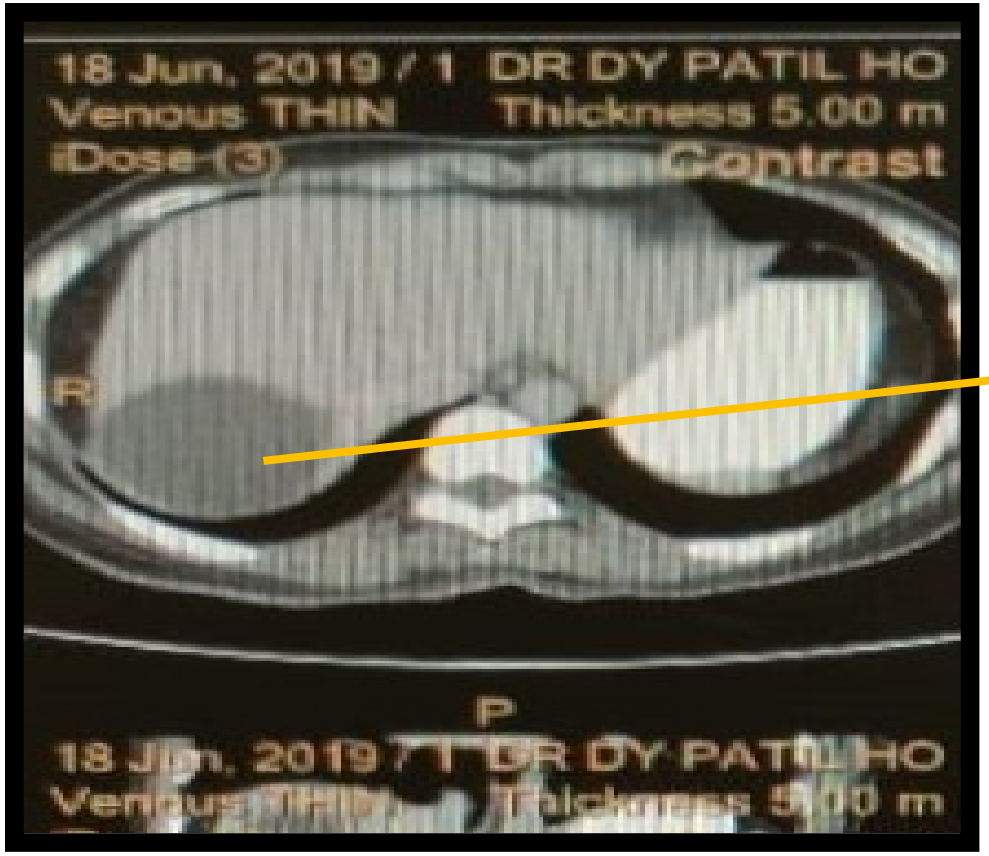
INVESTIGATIONS

ROUTINE PARAMETERS	RESULTS
Hemogram	Hb : 11.g g/dl ; TLC : 5400/mm^3 ; ESR : 24 ; PC : 2.6 lakh/mm^3
BSL-F	120mg/dl
LFT / RFT	Within Normal Limits

- **RADIOLOGICAL INVESTIGATIONS :**
  - CXR- WNL
  - USG Abdomen and Pelvis – A 5x5 cms heterogenous lesion in segment VIII right lobe of liver s/o: **recurrent hydatid cyst**.

CASE REPORT - INVESTIGATIONS

- CECT Abdomen and pelvis -**Recurrent cyst measuring 6 x 6 x 2 cms involving segment VIII of the liver**



RECURRENT HYDATID CYST IN SEGEMENT VIII

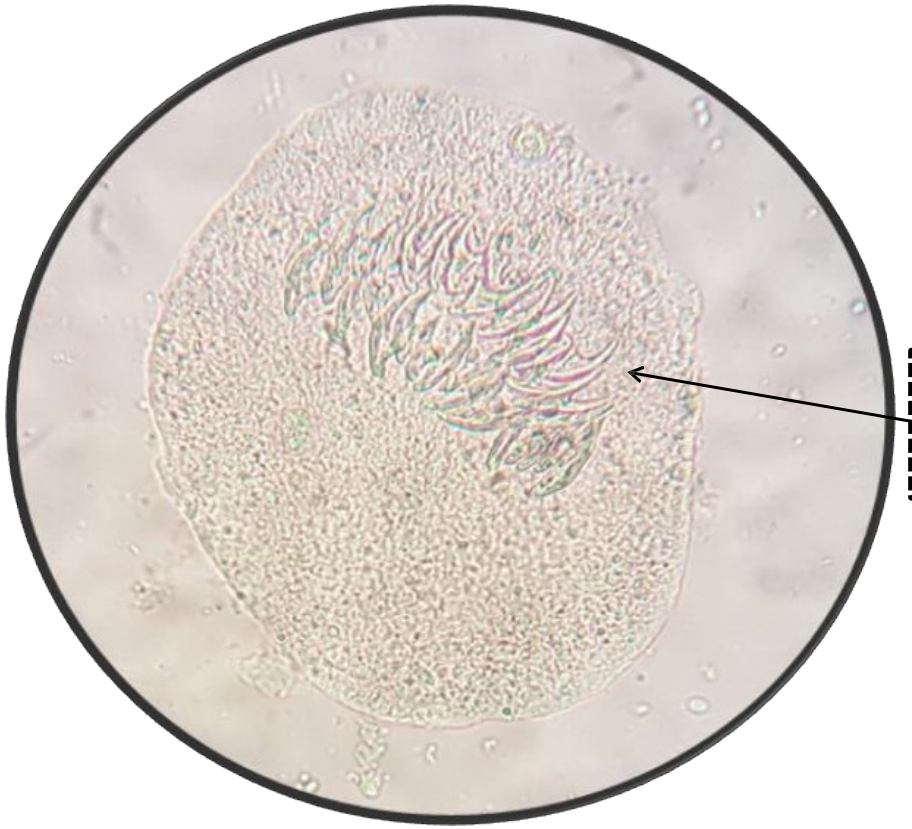
CECT FILM ON PRESENT ADMISSION

OPERATIVE MANAGEMENT

- Patient was then posted for a **diagnostic laparoscopy** during which the cyst was visualized.
- **Under laparoscopic assistance, a pigtail was inserted into the cyst** – Fluid aspirated through the pigtail and then sent for microscopic examination.
- Pigtail was kept insitu and connected to drain.

CASE REPORT – OPERATIVE MANAGEMENT

- On Microscopy: Protoscolices with internal hooklets seen in the wet mount s/o Echinococcosis.



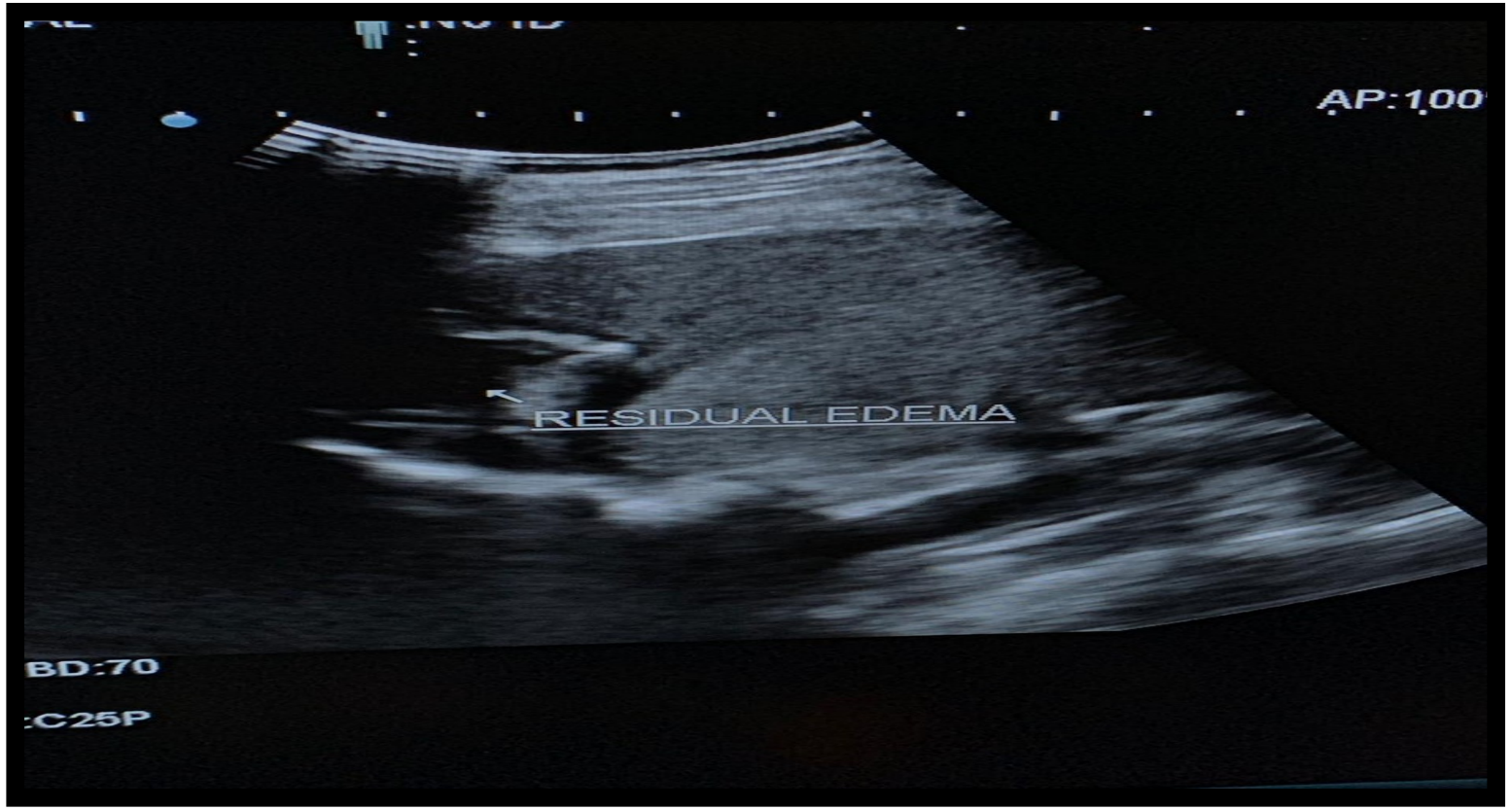
PROTOSCOLEX WITH INTERNALIZED HOOKLETS

CASE REPORT – POSTOPERATIVE MANAGEMENT

- On POD2 - **Irrigation of the cyst using 50 ml scolicidal agent (7% betadine and 3%cetrimide mixed solution) was started – Agent was left in situ for 2 hours and then reaspirated and connected to drain.**
- The procedure was repeated for 3 weeks on alternate days .
- **As per the protocol of A-PAIR (Antihelminthics + PAIR) patient was started on Tab. Mebendazole 400mg twice daily** .
- Fluid was sent for microscopic examination at the end of 3rd week.
- **Microscopic examination showed no evidence of protoscolices or daughter cysts.**

CASE REPORT

- Ultrasonography was performed before discharging the patient –minimal edema and no evidence of residual cyst.



REPEAT ULTRASONOGRAPHY - RESIDUAL EDEMA

- Patient discharged after removal of pigtail catheter.
- Patient is still on follow up with no evidence of recurrence

DISCUSSION

- Hepatic infection with Echinococcus granulosus is a major public health problem especially in cattle rearing countries.

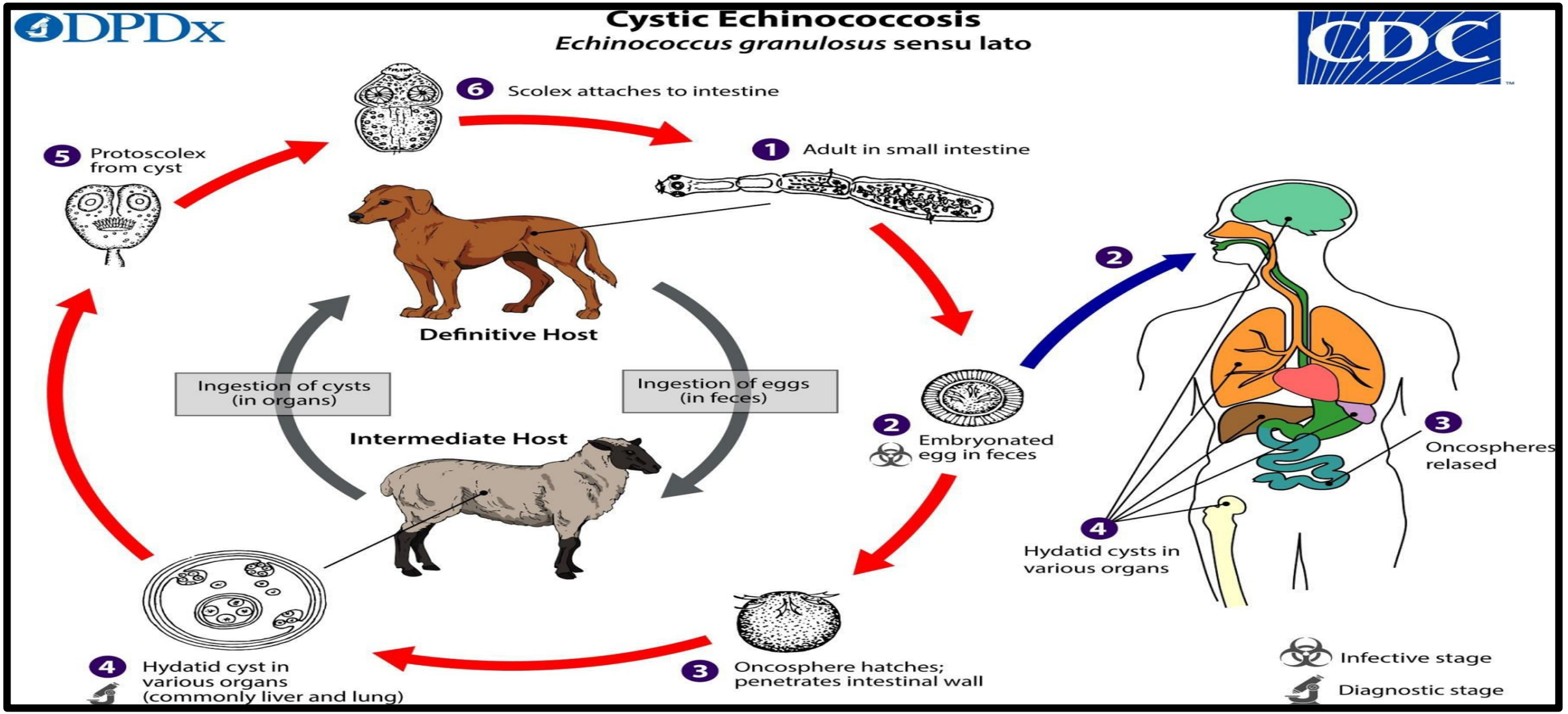
- Symptoms of hydatid disease are often vague ranging from non specific abdominal pain to hepatomegaly with jaundice.

- Complications :

  - Erosion into surrounding structures may result in cyst-biliary fistula and consequent jaundice and its sequalae

  - Spontaneous rupture with release of infected material into the peritoneum is rare but if occurs can cause anaphylaxis.

DISCUSSION – LIFECYCLE AND PATHOGENESIS

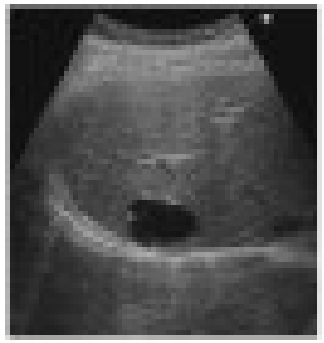
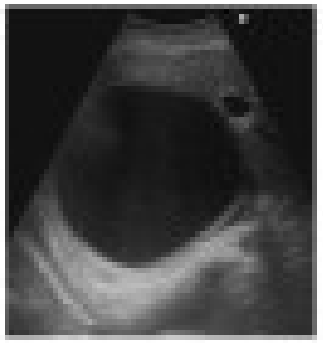
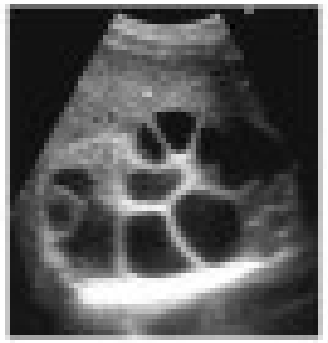
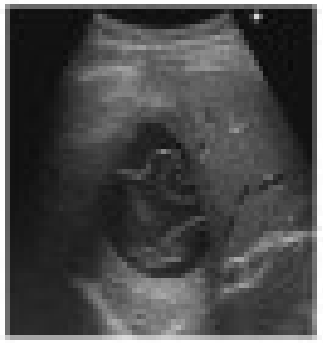
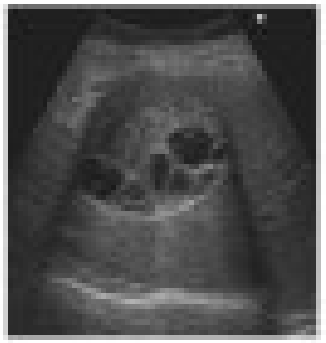
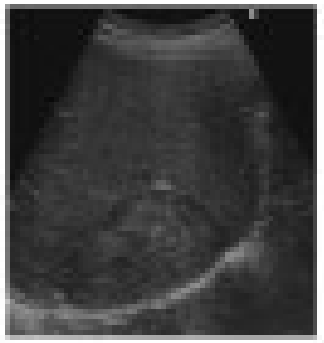
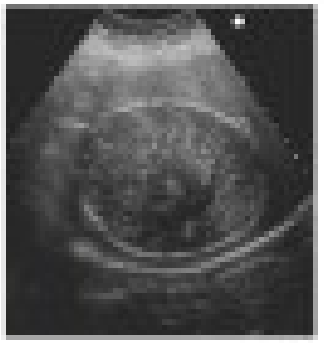


DISCUSSION

- The diagnosis of Echinococcal infection is confirmed by :
  - Serologic demonstration of an antibody response.
  - Ultrasonography – Appropriate first-line diagnostic.
  - CT can be done for detailed localization.
  - MRCP to exclude cystobiliary communication.

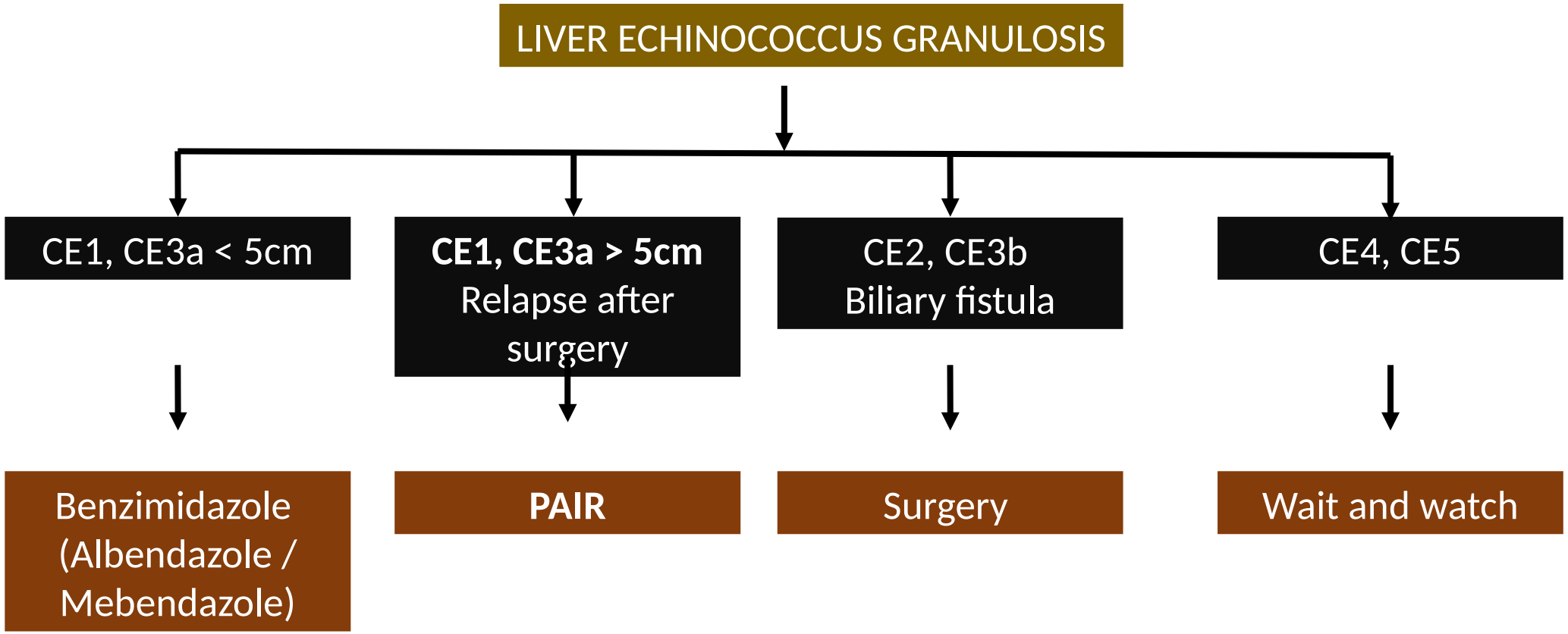
WHO- USG GRADING OF LIVER HYDATID CYST

Stages of WHO-IWGE ultrasound classification of liver cysts

Benign cyst?	"ACTIVE"		"TRANSITIONAL"		"INACTIVE"	
						
CL	CE1 (Gharbi I)I	CE2 (Gharbi III)	CE3a (Gharbi II)	CE3b (Gharbi III)	CE4 (Gharbi IV)	CE5 (Gharbi V)
CYSTIC LESION	UNILOCULAR UNECHOIC CYSTIC LESION WITH DOUBLE LINE SIGN	MULTISEPTATE "ROSETTE-LIKE" "HONEY-COMB" CYST	CYST WITH DETACHED MEMBRANES "WATER-LILY SIGN"	CYST WITH DAUGHTER CYSTS IN SOLID MATRIX	CYST WITH HYPER/HYPO ECHOIC CONTENTS. NO DAUGHTER CYSTS.	SOLID + CALCIFIED WALL

DISCUSSION

TREATMENT ALGORITHM OF HEPATIC HYDATID CYSTS



DISCUSSION

- Despite the number of therapies now available, recurrence remains one of the major problems in the management of hydatid disease, ranging from **4.6% to 22.0%** regardless of the type of intervention.

- **The main reasons for recurrence appeared to be microscopic spillage of live parasites, failure to remove all viable cysts at inaccessible or difficult locations or leaving a residual cyst wall at the initial operation.**

DISCUSSION

- **The most extensively evaluated technique is Puncture-Aspiration-Injection-Reaspiration (PAIR).**

- Cyst contents are aspirated percutaneously under CT or sonographic guidance - A scolicidal agent is injected, then reaspirated after a delay of hours to days.

- With laparoscopic assistance, the chances of spillage and injury to vital structures are reduced.

TAKE HOME MESSAGE

- **Minimally invasive surgery is an emerging modality in the treatment of hydatid cyst , with PAIR being one of them.**
- **You are welcome to keep dogs as pets, but at an arm's safe distance.**

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THANK YOU