



كلية الرشيد الجامعة

قسم تقنيات المختبرات الطبية

الطفيليات الطبية

Echinococcus granulosus

المرحلة الثانية – النظري

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Echinococcus granulosus **(The Dog tapeworm or Haydatid worm)**

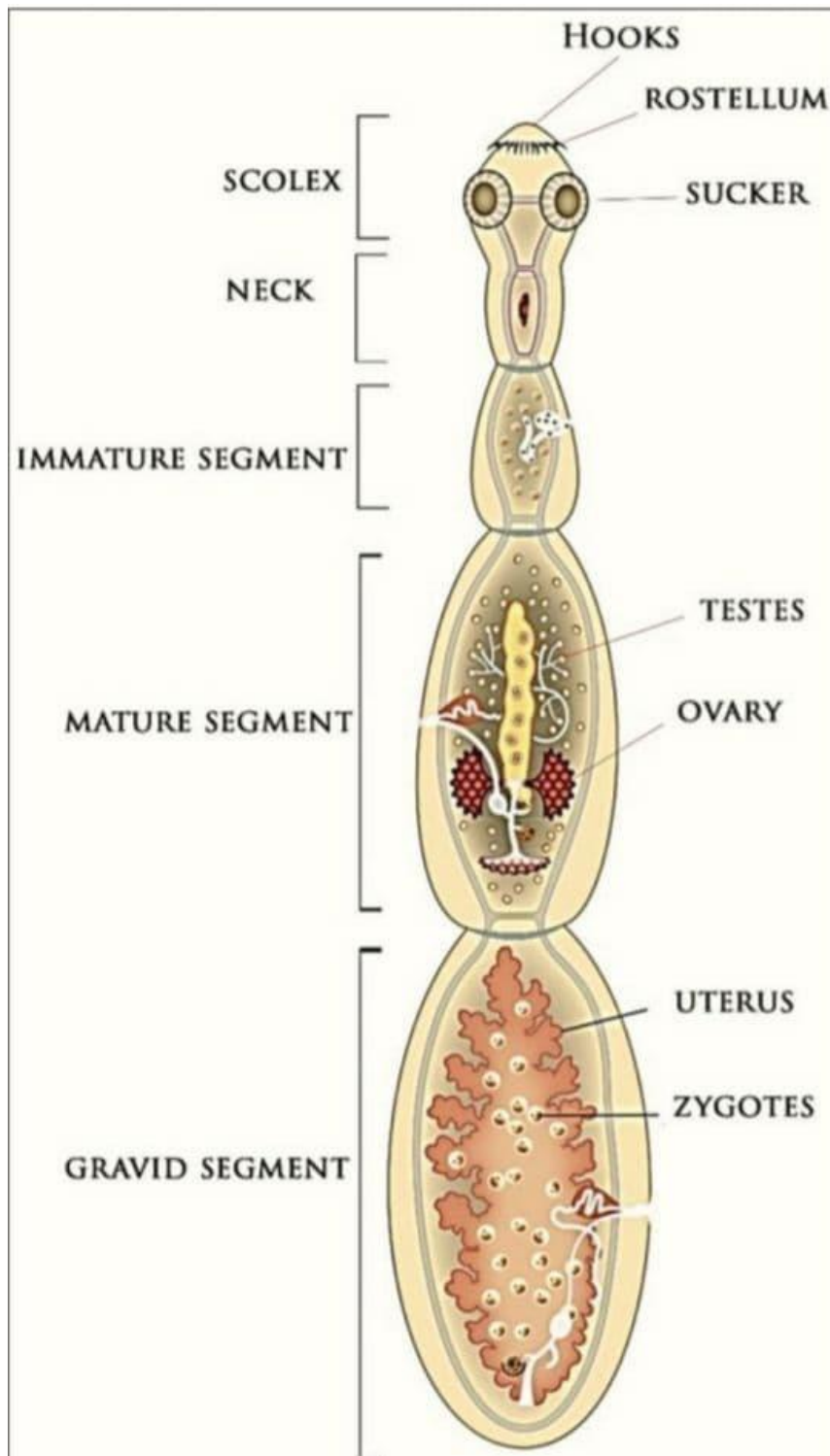
- Length : less than 1cm (3-9mm)
- Definitive host : dog
- Intermediate host : human , cattle
- Disease : Echinococcosis , Haydatidosis
- Habitat : The adult worm lives in the jejunum and duodenum of dogs .

The larval stage (hydatid cyst) is found in humans and cattle.

The adult worm parts

consist of (3-5 segments)

1. Scolex : contain 4 cup shaped suckers and rostellum armed with double row of hooks.
2. Neck .
3. Proglottid : consist of :
 - a. Immature Proglottid.
 - b. Mature Proglottid : contain of testes and ovary.
 - c. Gravid Proglottid : contain of laterals uterus is short and non branching .

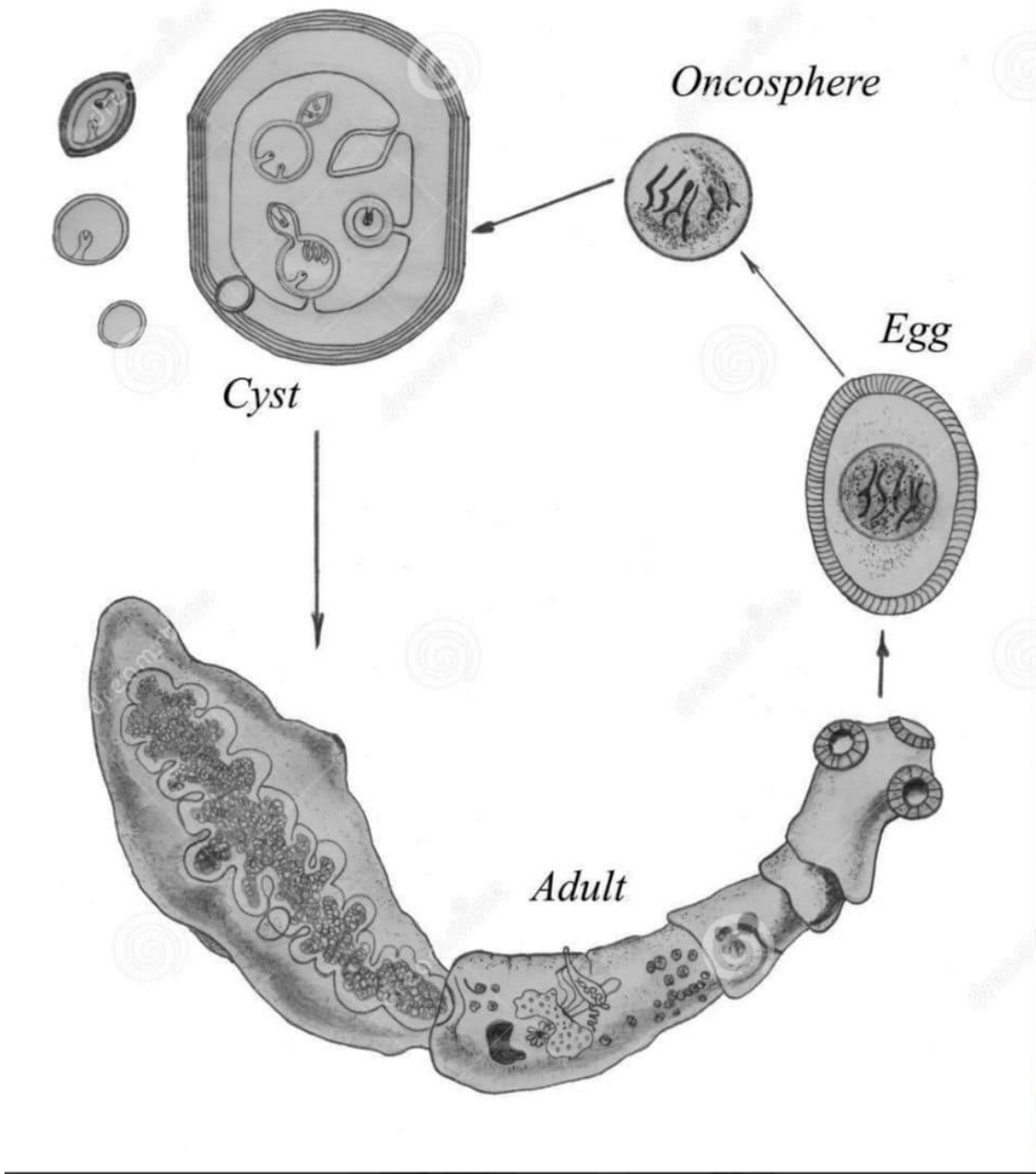


Life cycle

The infection of intermediate host (human and cattle) gets through Ingestion of eggs by the following ways Ingestion of water or vegetables polluted by infected dog feces. handling or caressing infected dogs where the hairs are usually contaminated with eggs .

The intermediate host ingests the eggs; these eggs are resistant to external conditions so they are able to remain infective after months outside the body After ingestion, eggs hatch releasing oncospheres that get through the intestinal wall and carried with blood to different organs of the host, especially liver and lungs .After about 12 h of ingestion, oncosphere arrives at the liver and develops into a hydatid cyst that keeps growing by the time, producing protoscoleces by asexual division.

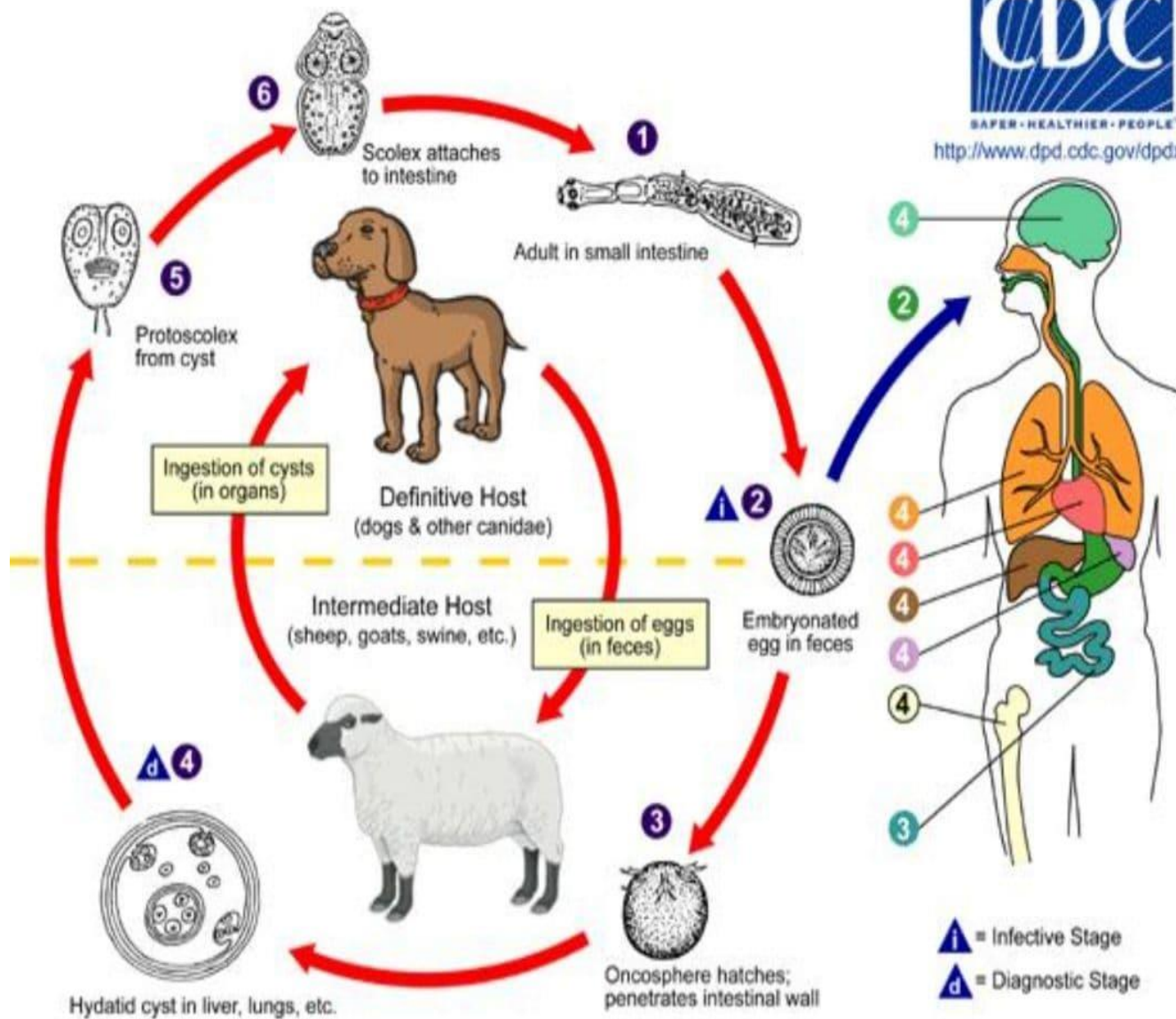
The definitive host becomes infected by eating the meat of the infected intermediate host containing the hydatid cyst The protoscoleces attach to the villi of the small intestine by their heads and develop to adult worms in 40–50 days .





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Symptoms

Most of the times infection is asymptomatic and accidentally discovered.

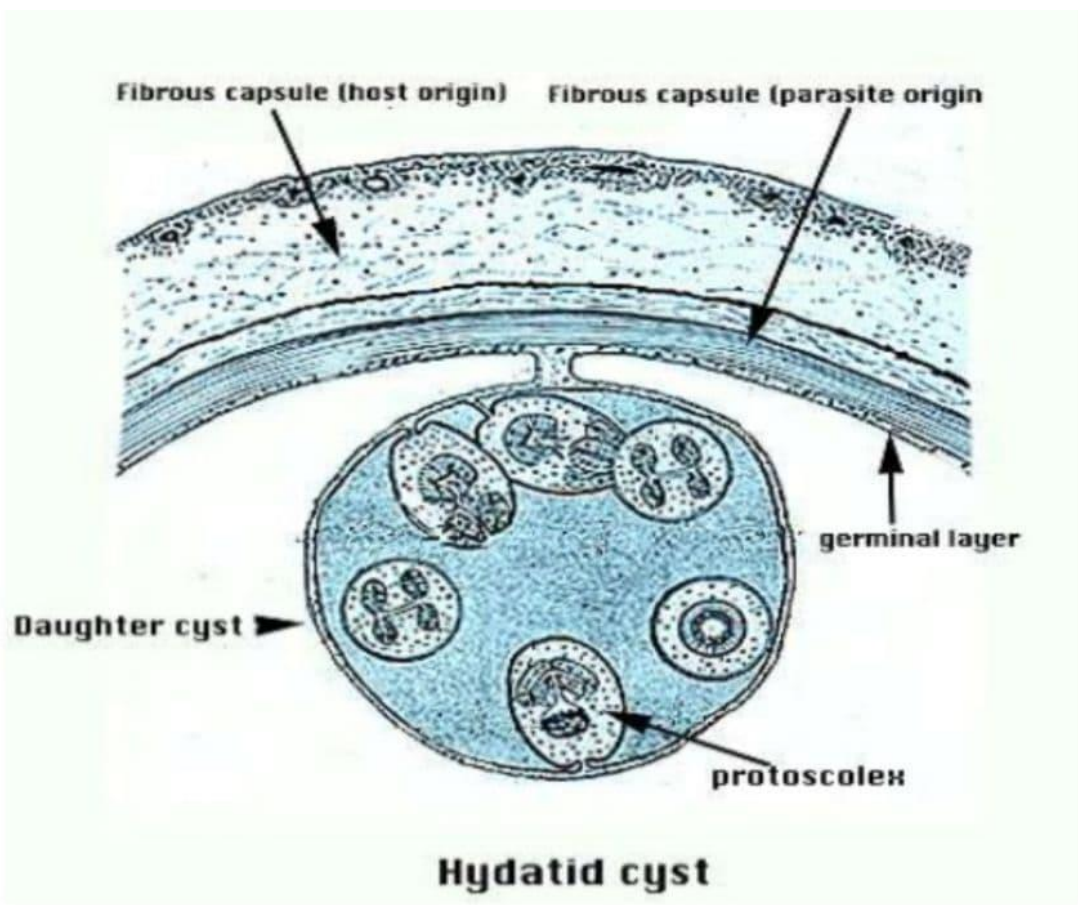
Clinical disease develops only when the hydatid cyst has grown big enough to cause obstructive symptoms.

Disease results mainly from pressure effects caused by the enlarging cysts.

- In about half the cases, the primary hydatid cyst occurs in liver (63%), mostly in the right lobe.

Hepatomegaly, pain, and obstructive jaundice are the usual manifestations.

- The next common site is the lung (25%) (most common being the lower lobe of the right lung). Cough, hemoptysis, chest pain, pneumothorax, and dyspnea constitute the clinical picture.
- In the kidney (2%), hydatid cyst causes pain and hematuria.
- Other sites affected include spleen (1%), brain (1%), pelvic organs and bones (3%).



Diagnosis

Radiological examinations and other imaging techniques such as ultrasonography (USG), CT scan, and MRI reveal the diagnosis in most cases of cystic echinococcosis.

1- Plain X-rays: permit the detection of hydatid cyst in lung and bones.

2-vCT scan: is superior for the detection of extrahepatic disease.

3-Examination of Cyst Fluid: Examination of aspirated cyst fluid under microscope after trichome staining reveals scolices, brood capsules, and hooklets. Exploratory puncture of the cyst to obtain cystic fluid should be avoided as it may cause escape of hydatid fluid and consequent anaphylaxis. Therefore, fluid aspirated from surgically removed cyst should only be examined.