

## Extra intestinal helminth

### Extra intestinal cestodes

#### *Echinococcus granulosus*

#### Morphology: Adult

The adult worm measures 3-6 mm in length (up to 1 cm). It has scolex, neck and strobilla. Adult worms live in small intestine of definitive host (dog). Man is an intermediate host - carrying the hydatid cyst (larva). Man contracts infection by swallowing eggs in excreta of definitive host.

- 1- **Scolex.**: has four suckers and a rostellum with hooks (armed)
- 2- **neck**
- 3- **strobila**: the tapeworm's body (strobila) consists of only three proglottids (immature, mature and gravid) segments and measures only about 5 mm in length.

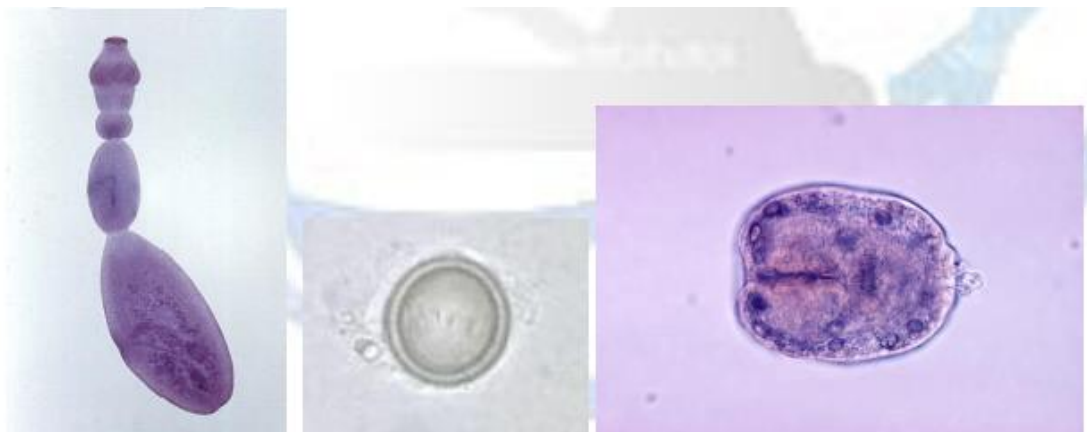
**Definitive host** : dogs

**Intermediate host** : human

**Infective stage** : eggs

**Disease**: ( Hydatid disease, echinococcosis, hydatidosis)

**Diagnostic stage** : hydatids cyst



adult

egg

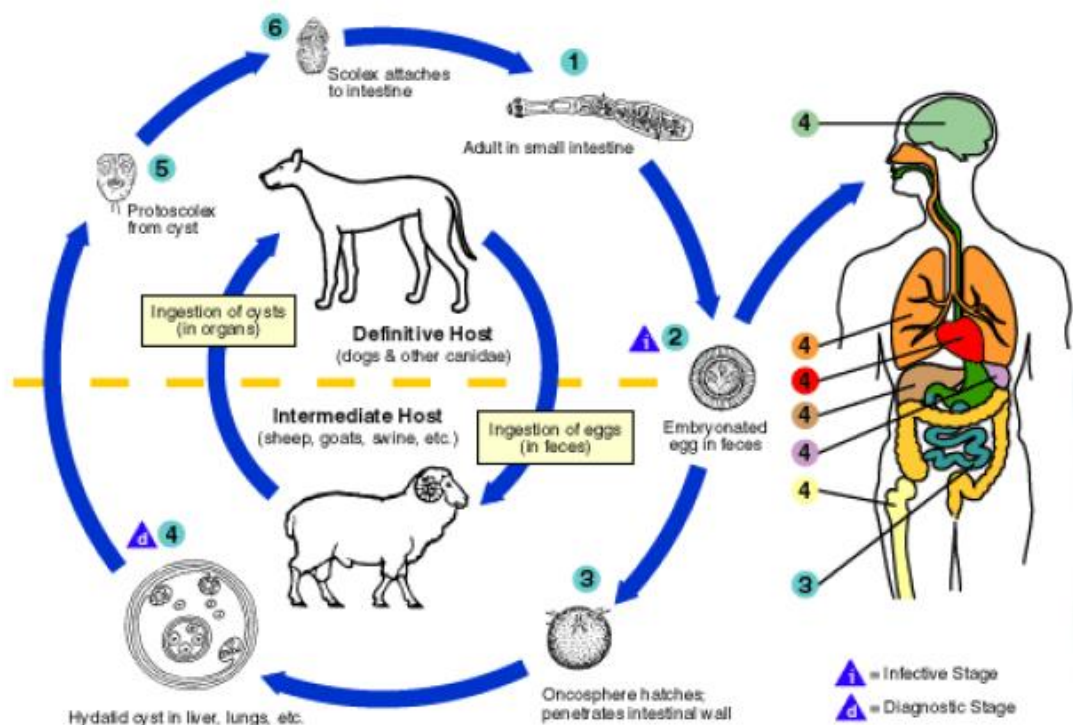
protoscolex

## Life cycle

Oncosphere hatch in duodenum or small intestine into embryos (oncosphere) which:

- ◆ Penetrate wall
- ◆ Enter portal veins
- ◆ Migrate via portal blood supply to organs: eg: lungs, liver, brain etc., thus, causing extra intestinal infections. In these organs, larvae develop into hydatid cysts. The cysts may be large, filled with clear fluid and contain characteristic protoscolices (immature forms of the head of the parasite). These mature into developed scolices, which are infective for dogs.

## Life cycle



## **Mode of human infection**

Ingestion of eggs by the following ways:

- i) Ingestion of water or vegetables polluted by infected dog feces.
- ii) Handling or caressing infected dogs where the hairs are usually contaminated with eggs.

## **Pathogenicity and clinical symptoms**

Asymptomatic infection is common, but in symptomatic patients

- ◆ It may cause cough - with hemoptysis in lung hydatid disease.
- ◆ Hepatomegaly - with abdominal pain and discomfort
- ◆ Pressure -from expanding cyst
- ◆ Rupture of cyst - severe allergic reaction - anaphylaxis.

## **Diagnosis:**

- ◆ X-ray or other body scans
- ◆ Demonstration of protoscolices in cyst after operation
- ◆ Serology