

Tikrit University

College of Nursing

Basic Nursing Sciences



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Microbiology

Echinococcus granulosus

By: lecturer

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Echinococcus granulosus

General Properties:

Common name: Dog tape worm, hydatid tape worm.

Disease : Echinococcosis, hyatid cyst, hyatid disease, hyatidosis.

Habitat : 1. liver and lungs (Man) larval form

2. small intestine (dog and other canines) Adult worm

Intermediate host : Sheep and other herbivores.

Accidental intermediate host : Human .

Definitive host : Dogs or wild canine .

Body region:

1. Scolex (Head): The hold fast organ

2. Neck: Posterior to the scolex .

3. Stobilla : (short)The main bulk, made up of proglottids.

Stages : Adult worm , Egg , Larva (Hydatid Cysts larval stages) .

Infective stage : Embrocated egg .

Diagnostic stages : scolices, daughter cysts, brood capsules, or hydatid sand.



Adult Worm

Characteries Echinococcus granulosus

-Length , Body shape up to 6 mm long, ribbon-like

-Scolex shape pyriform in shape

-rostellum with 28 to 50hooks in 2 rows, 4 suckers.

-Strobila Short with neck ,one immature ,one mature and one or two gravid proglottids

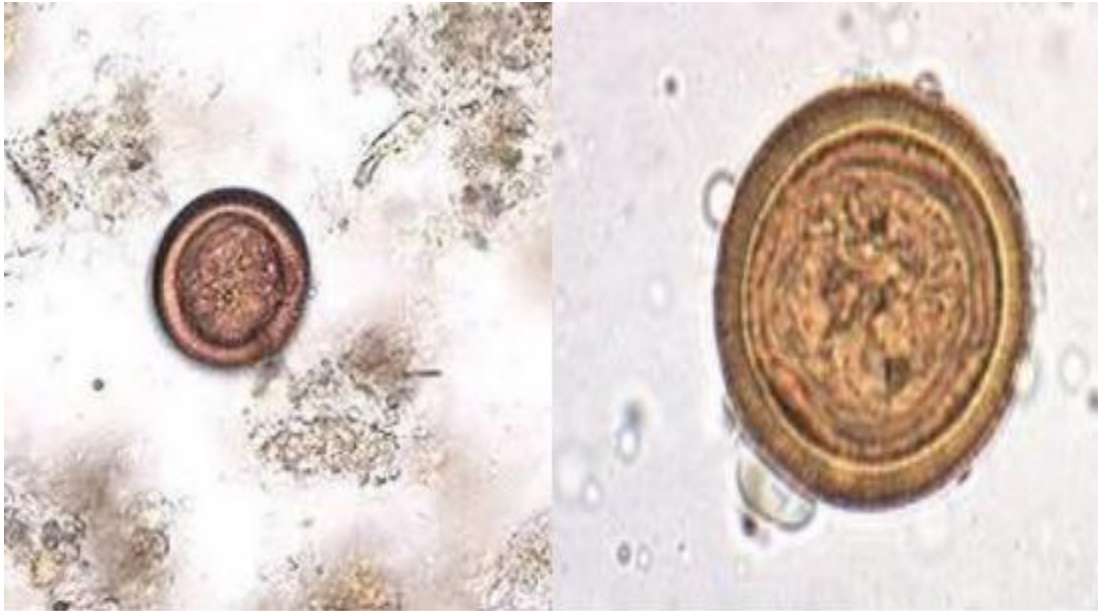
-Mature segment: with male and female genital organ, male with 45-65 testes.

Gravid segment measures more than half the total length of the whole tape worm with sac like uterus.

Egg

-Shape & Size range spherical , 31-40 –m in diameter

-Other feature Outer shell surround ---- with radially striated embryophore (inner shell) Hexacanth embryo.



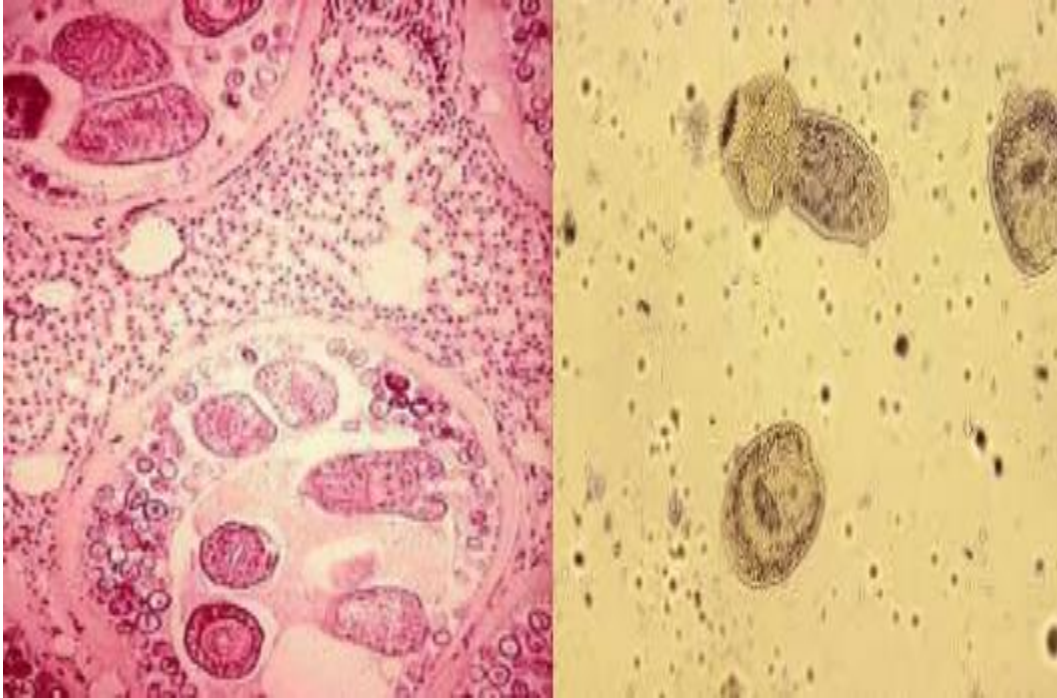
Larval stage (Hydatid cyst)

-Protective coverings Cyst wall; multiple laminated germinal tissue layers

-Basic cyst makeup Fluid-filled bladder

-Structures that arise from inner germinal layer: Daughter cysts, Brood capsules

-Other possible structures present: Hydatid sand



Laboratory Diagnosis:

- **Imagery**

Hydatids are found during X-radiography, ultrasonography.

- **Immunodiagnostic techniques**

Generally less sensitive than imagery

- **Microscopy**

Fluid aspirated from hydatid cyst will show many protoscolices

Life cycle:

Echinococcus granulosus is a cestode whose life cycle involves dogs and other canids, as definitive hosts for the intestinal tapeworm, as well as domestic and wild ungulates as intermediate hosts for the tissue-invading metacestode (larval) stage.

Cystic Echinococcosis *Echinococcus granulosus sensu lato*

