

# Taenia solium

**Structure, life cycle and pathogenicity (ppt 1)**

**B.Sc. Part I**

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# Introduction

*Taenia solium*, commonly known as pork tape worm, is a tapeworm. Tapeworm also called cestode, are member of invertebrate class Cestode (Phylum Platyhelminthes), group of parasitic flatworms. These are internal parasite, affecting certain invertebrates and the liver or digestive tracts of all types of Vertebrates- including humans.

*Taenia solium* is found throughout the world and is most common in countries where pork is eaten. It is a digenetic parasite *Taenia solium* infection (taeniasis) is an intestinal infection with adult tapeworm due to ingestion of contaminated pork. Cysticercosis is an infection with larvae of *T. solium*, which develops after ingestion of ova excreted in human feces.

# Systematic position

**Phylum:** Platyhelminthes

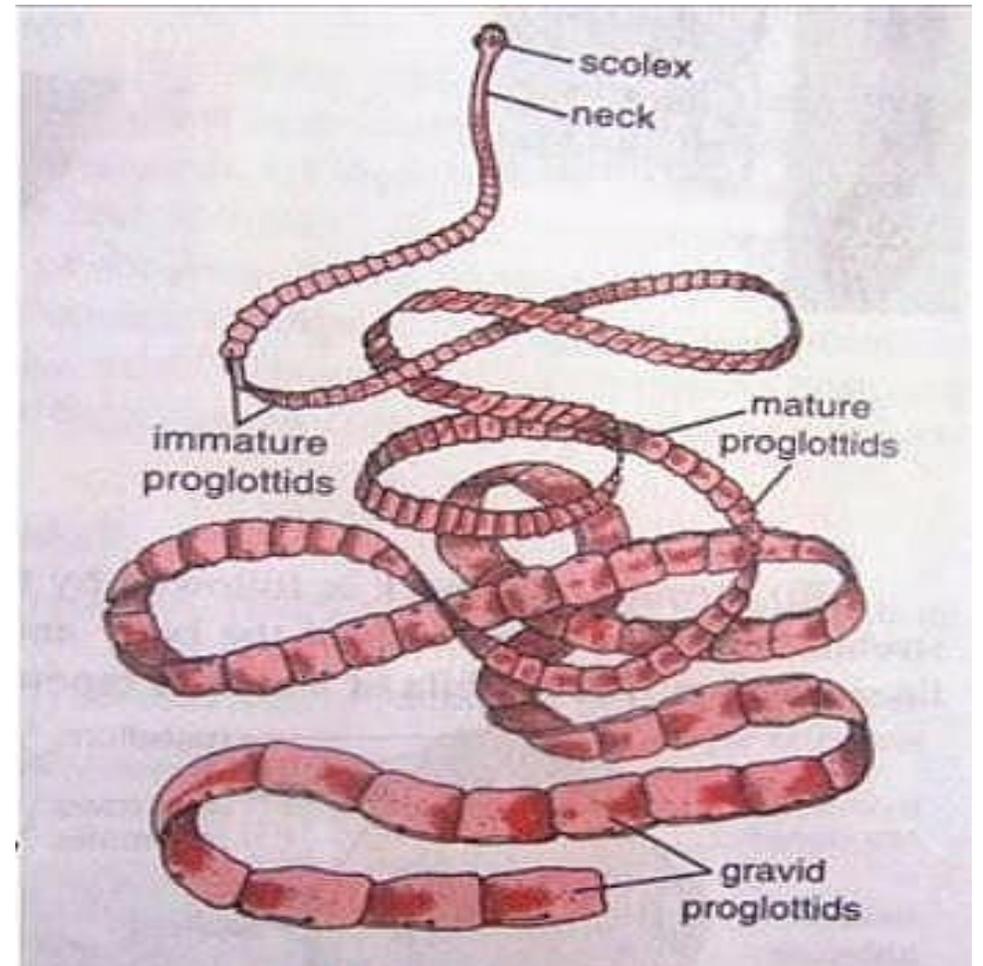
**Class:** Cestoda

**Order:** Cyclophyllidea

**Family:** Taeniidae

**Genus:** Taenia

**Species:** solium



# Structure

Adult *Taenia solium* is dorsoventrally flattened, narrow ribbon like tapeworm that is The adult worm measures about 2-3 meters in length.

The body consists in of 3 parts:- Scolex, neck and strobila or body segments.

## **Scolex**

The anterior end of the body is knob like scolex.

It measures 1 mm in diameter, about the size of a pin head.

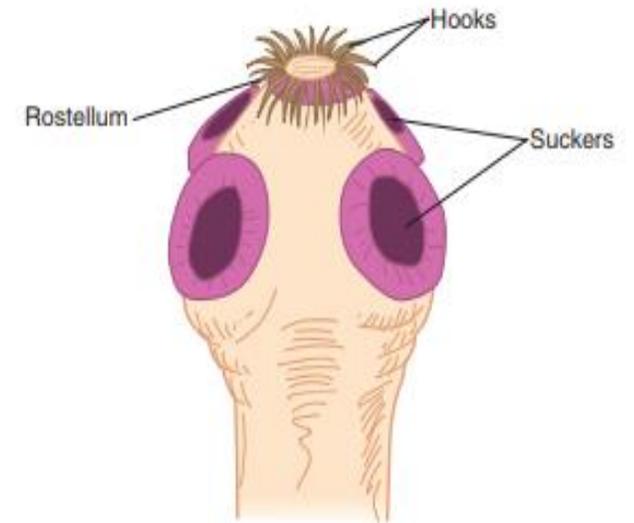
It is like pin head in shape and has 4 cup like muscular circular suckers.

The head is provided with a rostellum armed with a double row of alternating large and small and small hook lets (130-180mm long).

The inner circle with larger hooks and outer circle with smaller hooks.

The presence of hook lets gave its name armed tape worm.

The scolex with its suckers and hooks helps it to attach itself to the intestinal wall of the host.



*Taenia solium* scolex.

# Morphology

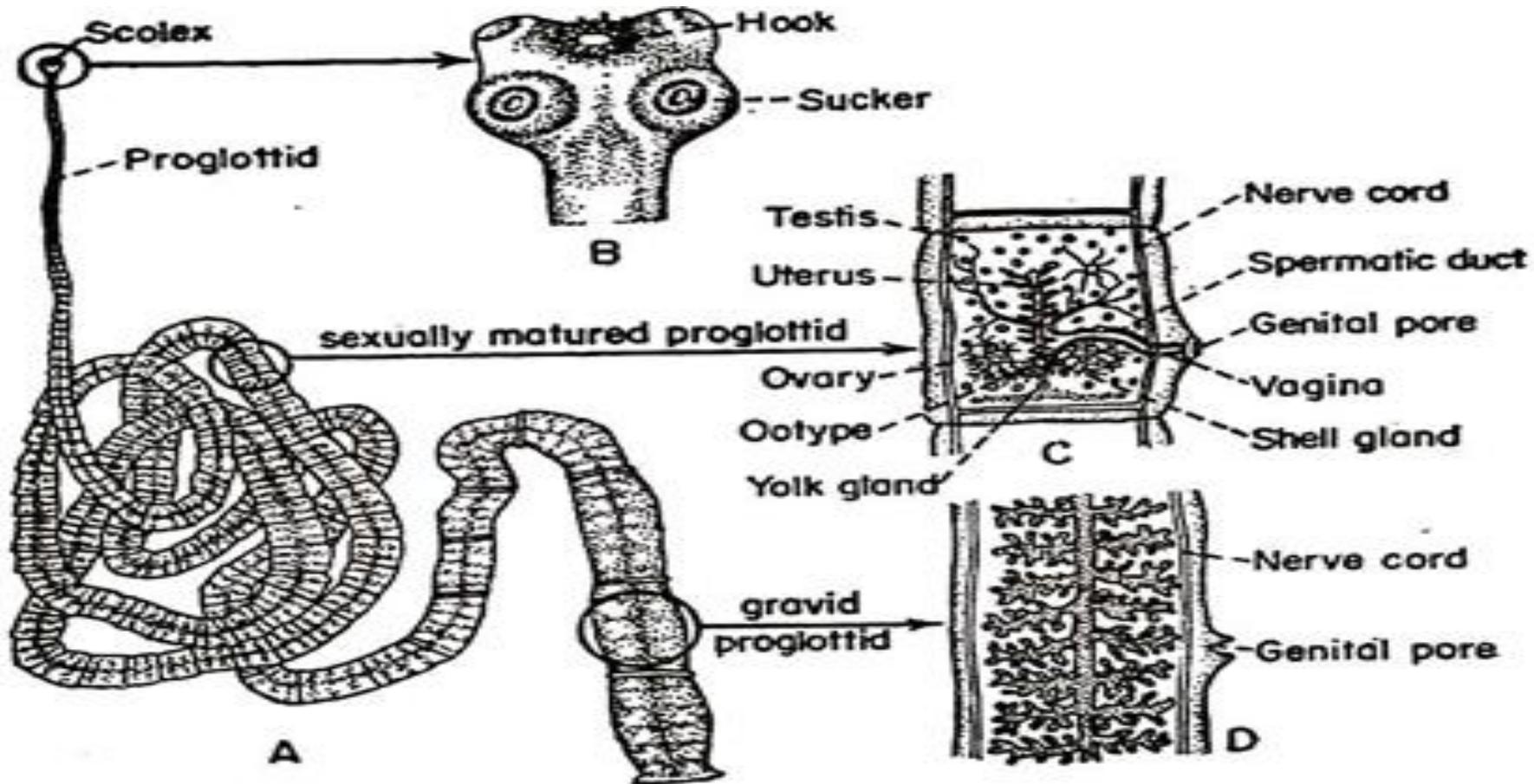
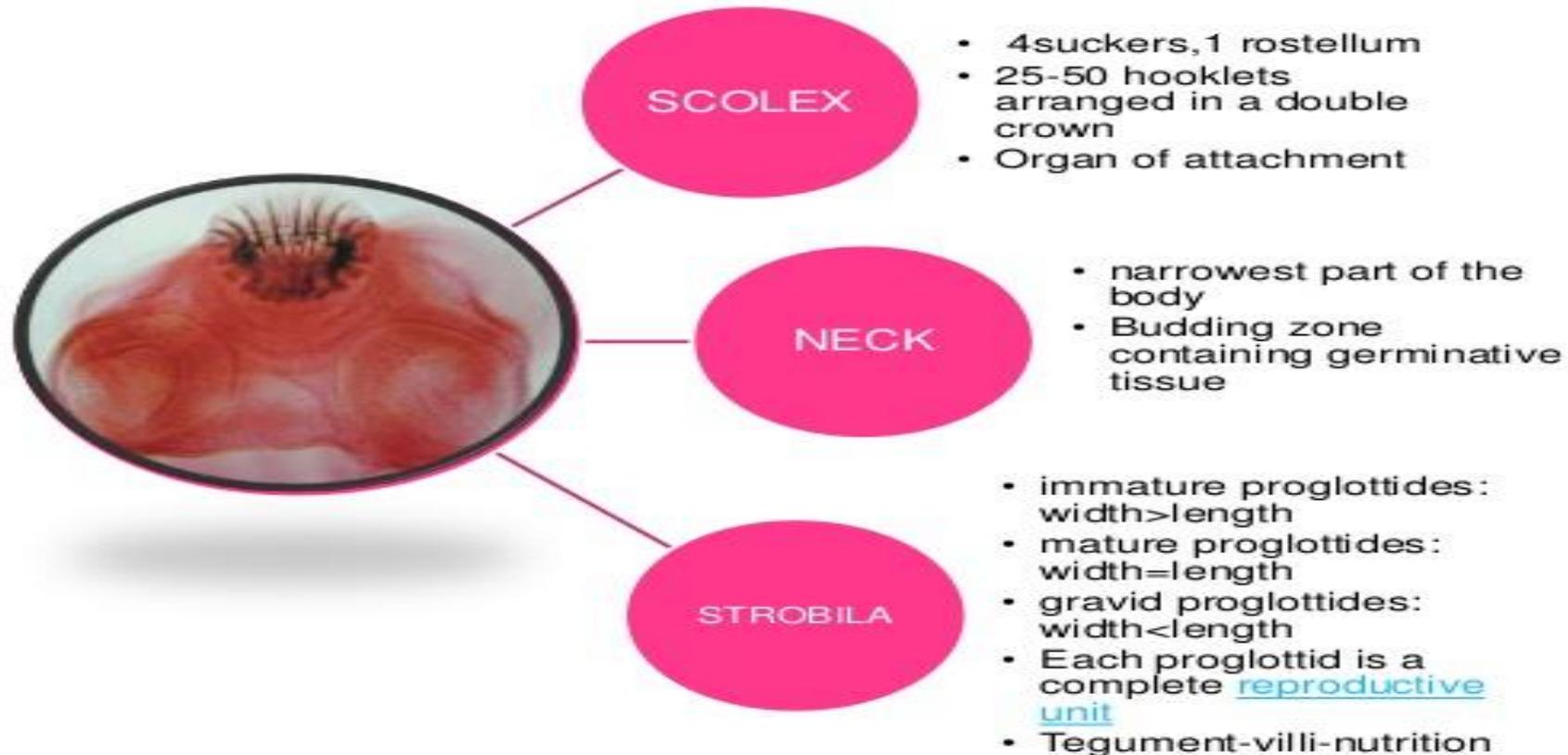


Fig. 69A. External morphology of *Taenia*. (A), Enlarged views of Scolex (B), mature proglottid (C) and gravid proglottid (D).

# Neck

- Behind the scolex, a thin small and narrow unsegmented neck is present. It is about 1/3 to 10 mm in length.
- The neck grows continuously and proglottids are proliferated from the neck region



# Strobila

- It is the flattened ribbon like body below the neck.
- The strobila consists of the immature, mature and the gravid proglottids arranged in a linear fashion.
- The young proglottid is next to the neck and oldest at the posterior.
- The strobila of mature tape worm have 800 to 900 proglottids.
- A proglottid is an independent, self contained unit of the body having a complete set of reproductive structure ,excretory and nervous system and surrounding tissue.
- The proglottids are internally remain connected together by muscles, excretory vessels and nerve cord.
- The proglottids in a mature tapeworm is differentiated into three kinds-Immature, mature and gravid proglottids.

# Types of proglottids

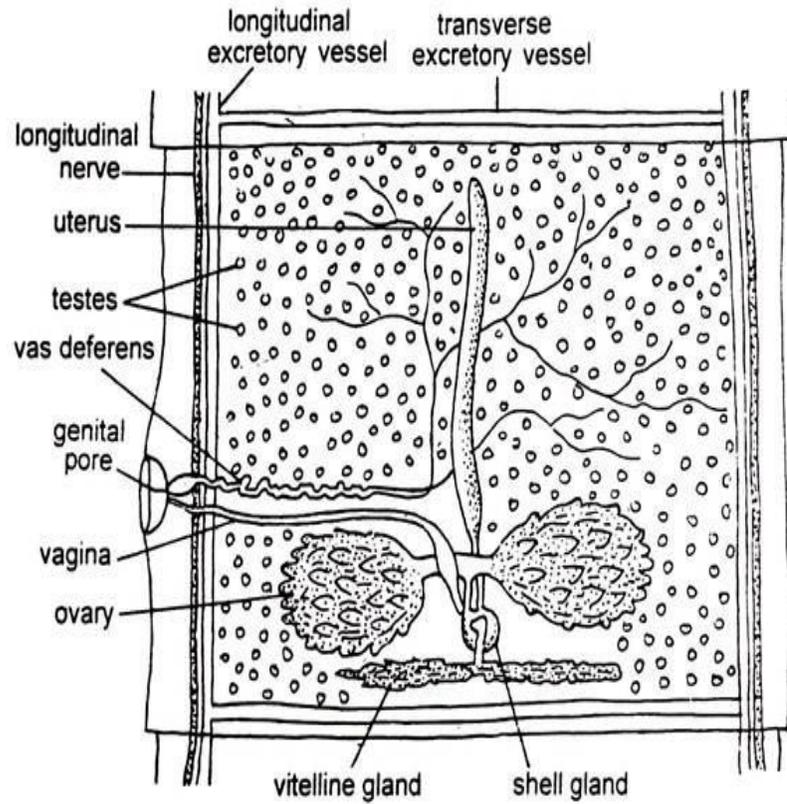


Fig. 22.12. *Taenia solium*. An immature proglottid

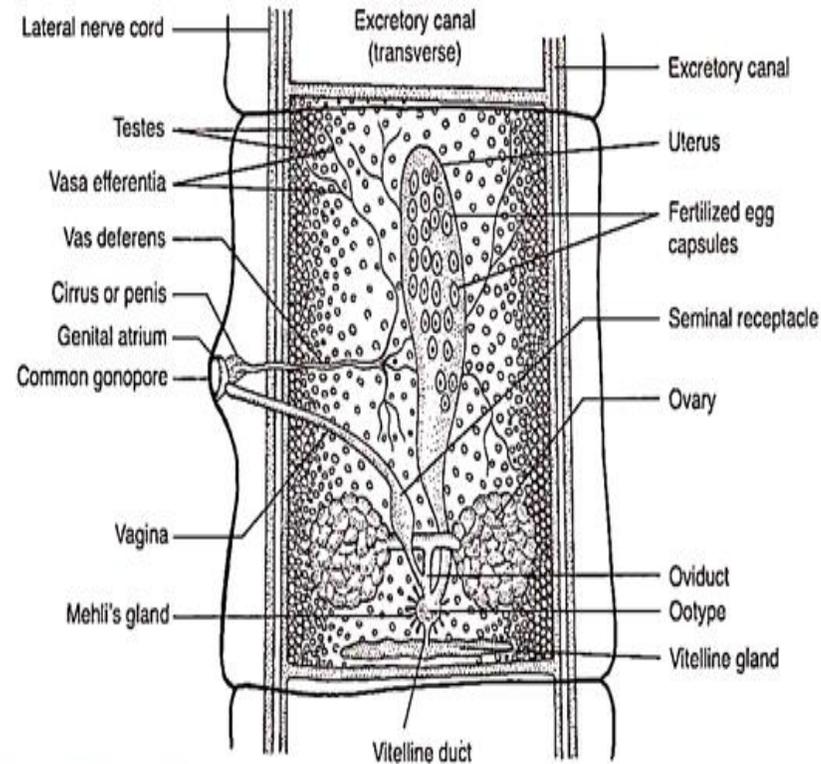


Fig. 7.3: *Taenia solium*. Reproductive structures in a mature proglottid

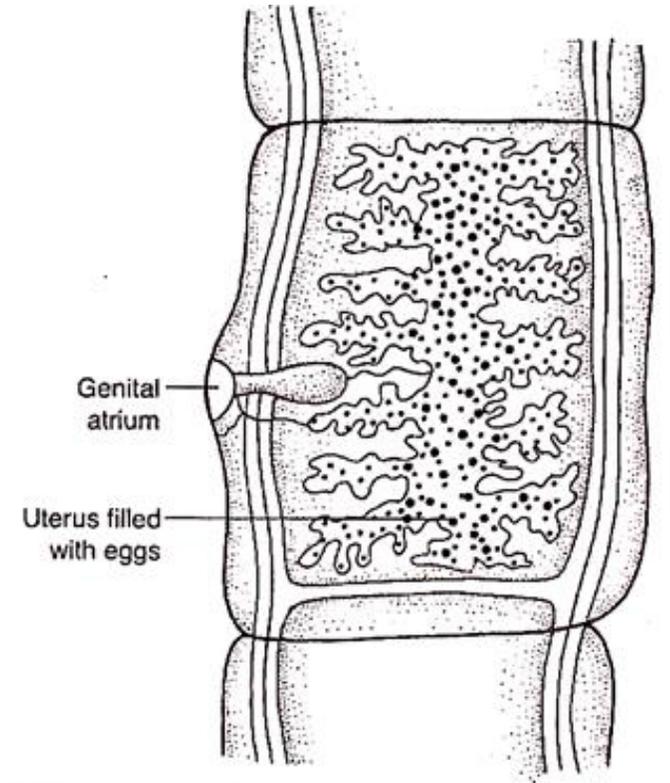


Fig. 7.4: *Taenia solium*. A gravid proglottid showing branched uterus