

**MJF COLLEGE OF VETERINARY & ANIMAL  
SCIENCES, CHOMU, JAIPUR**



**GENUS – STEPHANURUS**

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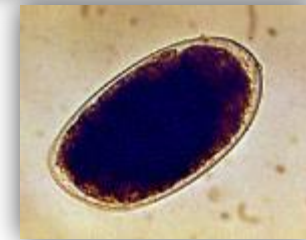
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<b>Genus</b>	<b>Stephanurus</b>
<b>Species</b>	<i><b>Stephanurus dentatus</b></i>
<b>Host</b>	<b>Pig</b>
<b>Location</b>	<b>Kidney, Ureter</b>
<b>Common name</b>	<b>Kidney worm of swine</b>

# Morphology

- ❖ Stout worms with mottled appearance.
- ❖ Male is 20-31 mm whereas female is 20-45 mm long.
- ❖ Buccal capsule is cup-shaped with 6 teeth.
- ❖ Both external and internal leaf crowns are present.
- ❖ Ellipsoidal shape thin shelled egg.



# LIFE CYCLE

✓ Direct life-cycle

✓ Infective stage:  
3<sup>rd</sup> stage larva  
(L<sub>3</sub>)

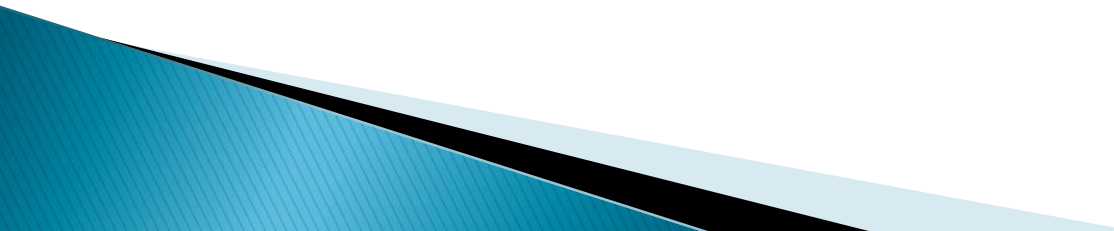
✓ Transport host:  
Earthworm

Final host (pig) gets the infection -

- by ingestion of free L<sub>3</sub> with food and water
- by the ingestion of infected earthworm (transport host)
- Percutaneous (through skin penetration)
- Prenatal mode of infection

- ▶ Eggs are passed out in the urine of the host.
- ▶ At 26 °C, eggs hatch after 24-36 h and larvae reach infective stage in four days.
- ▶ Infection of the host occurs by ingestion or by skin penetration. Earthworms may act as transport host.
- ▶ The third ecdysis either in the stomach wall or in the skin and abdominal muscles as per the route of entry and L4 Larvae reach to the liver through blood circulation and moult to L5.
- ▶ After 3-4 months or more, these L5 migrate to the kidney and perirenal tissues where they form cyst and become adult.
- ▶ The cysts are communicated with ureter by a canal to excrete through urine.
- ▶ Prenatal infection is also reported.

# PATHOGENESIS

- ▶ Percutaneous infection causes the formation of nodules in the skin, with oedema and enlargement of the superficial lymph glands.
  - ▶ Abscess formation, extensive liver cirrhosis and multiple adhesions may occur.
  - ▶ Aberrant migration of larvae may lead to lesions in the spinal cord.
  - ▶ Cysts may occur in the kidney tissue.
  - ▶ Ureters thickened and in chronic cases ureter may be occluded.
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## CLINICAL SIGNS

- ▶ Stiffness of hind limbs.
- ▶ Posterior paralysis
- ▶ Depressed growth rate, loss of appetite and later emaciation.
- ▶ Ascites

## ON POSTMORTEM EXAMINATION

- ✓ Liver is enlarged and cirrhosis may be marked.
- ✓ Presence of mature and immature worms in the perirenal tissues, in the liver and lungs, usually in cysts may be noticed.
- ✓ Perirenal tissues show hypertrophy and surface of kidneys may bear small scars of healed abscesses.
- ✓ Portal and mesenteric lymph vessels are enlarged or indurated.

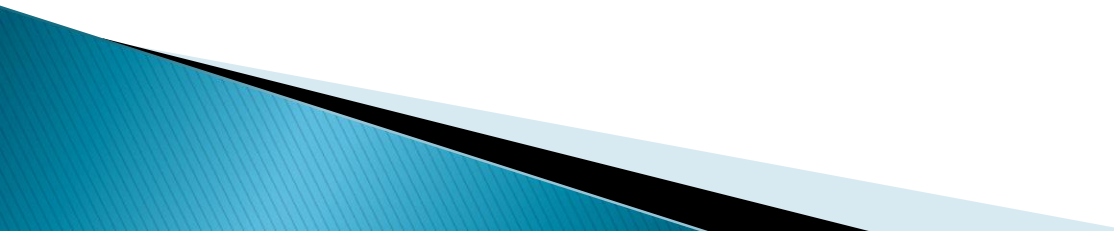
## DIAGNOSIS

- ▶ Finding eggs in the urine.
- ▶ Postmortem.
- ▶ Gel precipitin test.





# TREATMENT

- ▶ Broad spectrum anthelmintics are preferred
  - ✓ Ivermectin @ 0.3 mg/kg body weight
  - ✓ Levamisole @ 8 mg/kg body weight
  - ✓ Fenbendazole @ 3 mg/kg body weight in feed for 3 days
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# CONTROL

- ▶ Good management practices (regular cleaning of floor, proper drainage).
- ▶ Treatment of soil with polyborate for destroying the eggs and larvae.
- ▶ Segregation of young animals from infected ones.
- ▶ Deworming of pigs.
- ▶ Proper disposal of urine.
- ▶ By adopting **'gilt only'** breeding policy where gilts are bred only once and then sold before kidney worms develop to maturity.