

# Dracunculiasis

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# Classification of Nematodes

Subclass	Order (suborder)	Superfamily	Genus and Species	Probable prevalence in man
Secernentea	Spirurida (Camallanina)	Dracunculoidea	Dracunculus medianesis	10 million

# General

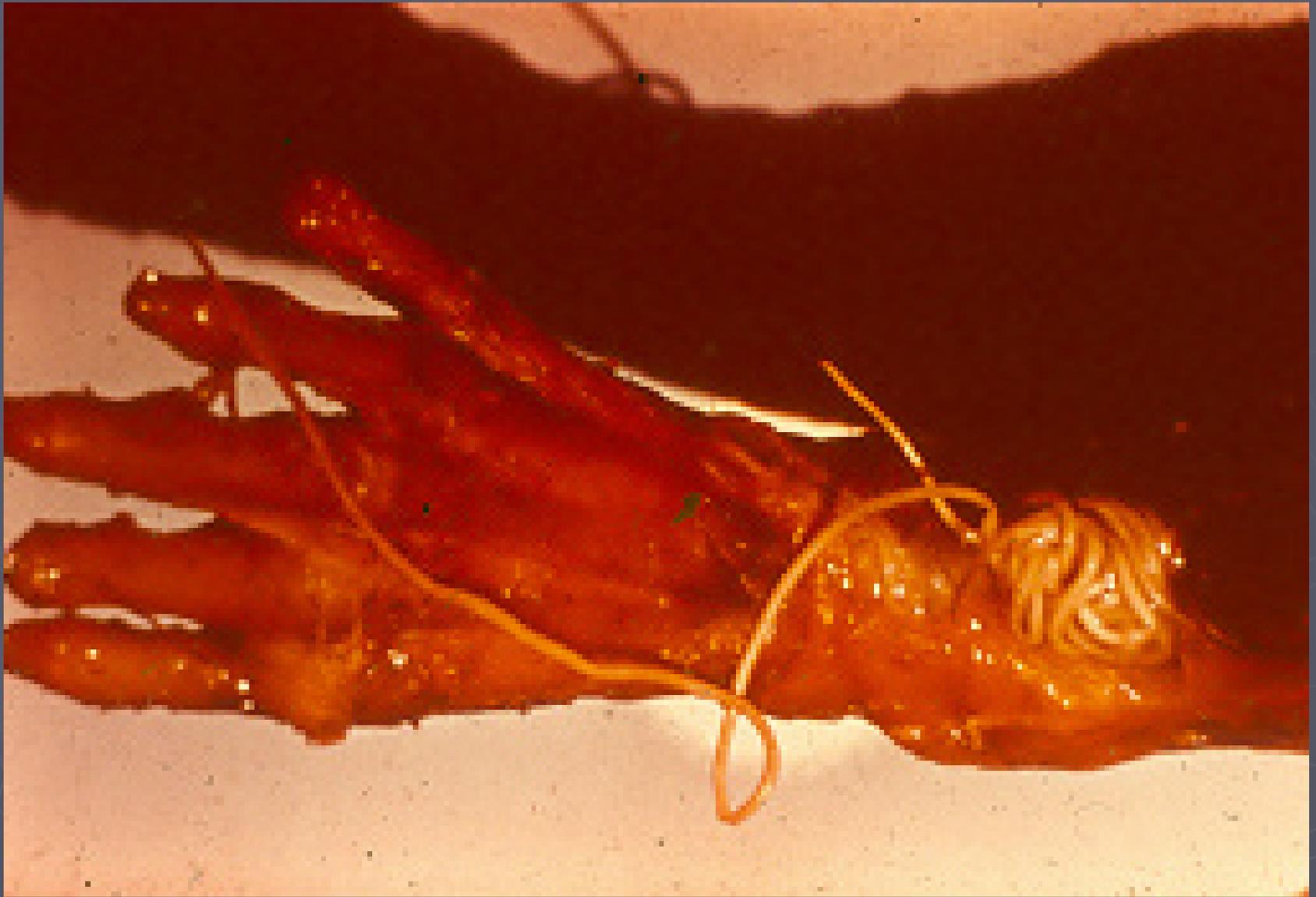
- ▶ Etiology - *Dracuncula medianensis* causing Guinea Worm Infection
- ▶ Geographic distribution – Africa (12 countries West, Central and East Africa)
- ▶ 32,000 cases with 63% in Sudan (2003)

# General Recognition Features

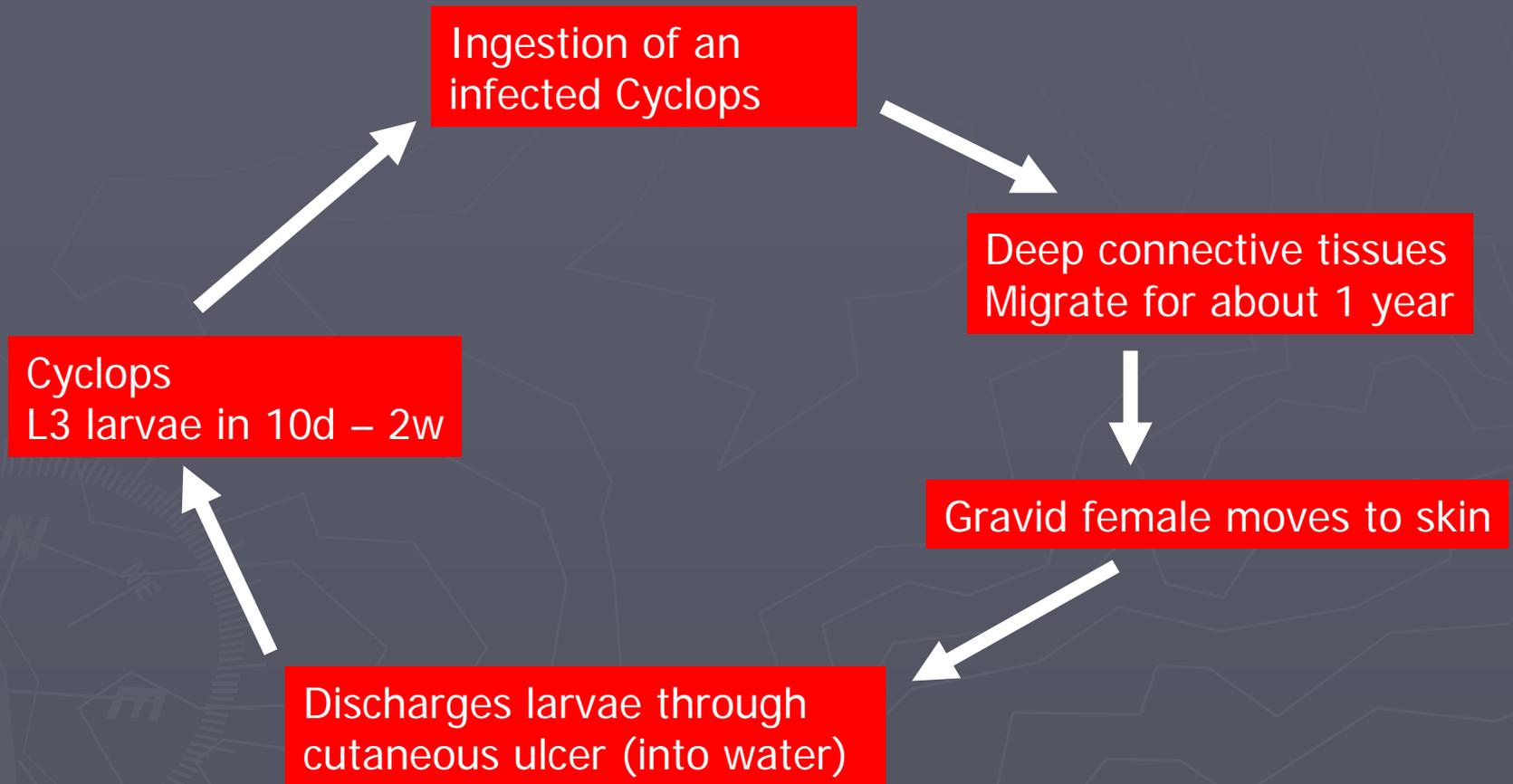
- ▶ Size – Female 60-120 cm, male 1.2-2.9 cm
- ▶ Larvae – 500-750  $\mu\text{m}$  long

# Life Cycle

- ▶ Definitive host – man
- ▶ Where the adults live in the body – deep connective tissues
- ▶ Stage leaving the body – L1 larvae from an adult worm in a skin lesion
- ▶ Intermediate host – Cyclops (copepod) small crustaceon
- ▶ Infectious stage for the definitive host – ingestion of an infected cyclops



# Life Cycle



# Life Cycle

- ▶ Prepatent period – 12 months





A Colour Atlas of Tropical Medicine and Parasitology, 2<sup>nd</sup> Edition, Year Book Medical Publishers, 1981, pp 257

# Disease Characteristics

- ▶ Generally no symptoms in the prepatent period
- ▶ Prodrome stage – few hours prior to skin lesions an erythematous urticarial rash is seen with pruritus, nausea, diarrhea, dyspnea, syncope, giddiness
- ▶ Skin lesion – red papule, vesicle with indurated margin (1.5-2.0 cm) mainly on feet and ankles. With rupture some of the symptoms abate but may recur with removal of the worm.
- ▶ Sterile abscess – if the worm fails to reach the skin surface and dies
- ▶ Secondary infection is common
- ▶ When close to joints may cause a debilitating arthritis
- ▶ Can rarely migrate to critical organs

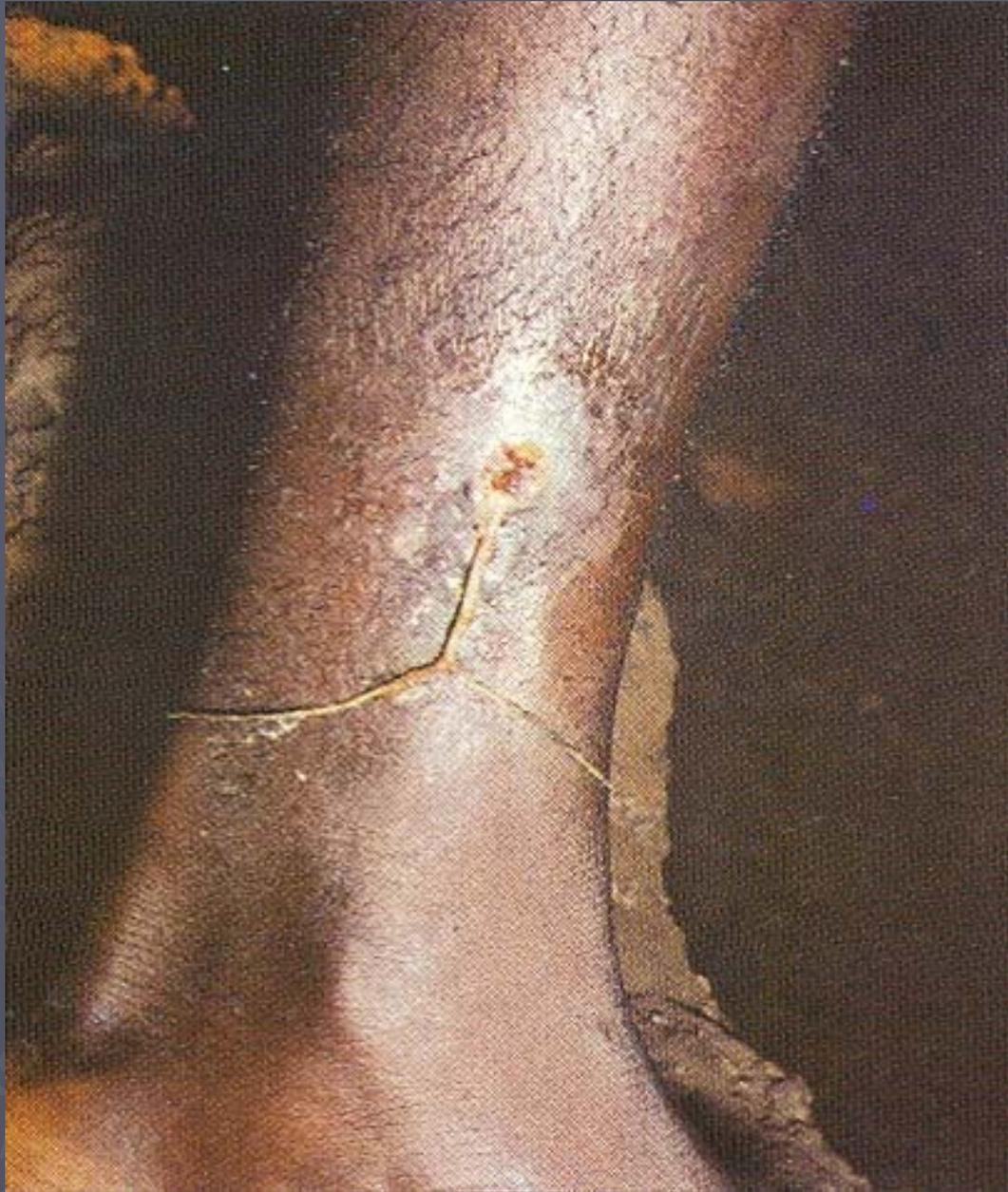


# Diagnosis

- ▶ Clinical suspicion – prodrome followed by the classic skin lesion.

# Treatment

- ▶ Slow extraction of the worm combined with wound care
- ▶ Metronidazole
  - Adults – 250 mg tid X 10 days
  - Children – 25 mg / kg / day (maximum 750 mg) divided into 3 doses X 10 days
  - Not curative but decreases inflammation and facilitates worm removal
  - Metronidazole 400-800 mg / day for 6 days has been reported to kill the worm directly



# Metronidazole Adverse Reactions

- ▶ Avoid – 1<sup>st</sup> trimester
- ▶ Use with caution CNS disease, blood dyscrasias, severe liver or renal disease (GFR < 10 mL/min)
- ▶ Adverse reactions – nausea, diarrhea, urticaria, dry mouth, leukopenia, vertigo, metallic taste, peripheral neuropathy
- ▶ May worsen candidiasis
- ▶ May cause disulfiram type reaction with alcohol consumption within 24-48 hours after dose given
- ▶ May increase levels of toxicity of phenytoin, lithium, and warfarin.
- ▶ Phenobarbital and rifampin may decrease metronidazole metabolism

# Control Measures

- ▶ Protected wells and water supplies
- ▶ Temphos (Abate) treatment of water supplies
- ▶ Appropriate treatment of infected individuals
- ▶ Boiling or filtering (eg nylon filter) of potentially infected water

