

# INFECTIONS

## FILARIASIS

Transmitted by mosquitoes (Culex)

- *Wuchereria bancrofti*, *Brugia malayi*

pointed tip with nuclei,  
excretory pore prominent

Diseases: cause spectrum of diseases

i) Asymptomatic

ii) Recurrent lymphadenitis

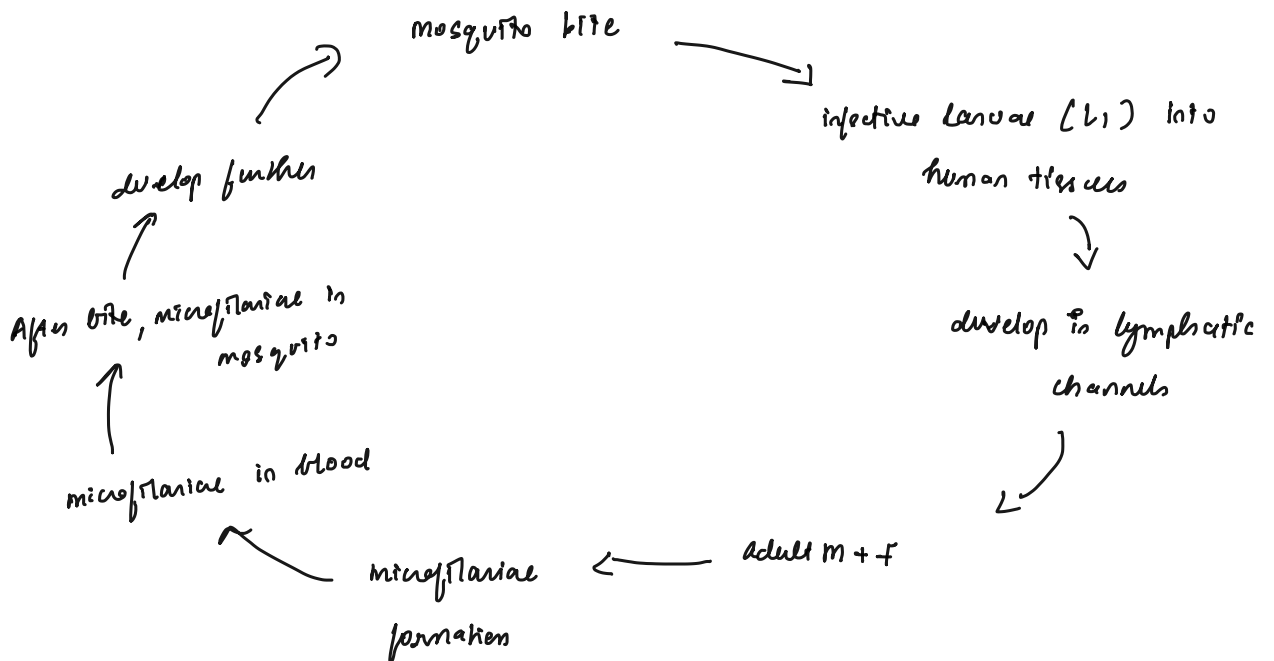
iii) Chronic lymphadenitis with elephantiasis

iv) Tropical pulmonary eosinophilia

Pathogenesis:

Definitive host → HUMAN

Intermediate host → MOSQUITO



• majority of infected patients remain asymptomatic

• symptomatic cases have 2 forms → acute & chronic form

\* Acute form of filariasis: fever, lymphangitis, lymphadenitis, urticaria, eosinophilia, microfilariæmia

\* Chronic form: lymphadenopathy, lymphoedema, hydrocoele & elephantiasis

## Pathology

- Significant histological changes → presence of adult worms in lymphatic vessels causing lymphatic obstruction & lymphoedema
- Regional lymph nodes enlarged
- Sinus distended with lymph
- Tissue surrounding blocked lymphatics - infiltrated by chronic inflammatory cells infiltrate consisting of lymphocytes, histiocytes, plasma cells & eosinophils.
- Chronicity of the process causes elephantiasis (legs & scrotum)
- Chylous ascites & chylouria occur due to rupture of abdominal lymphatics.
- Immune responses to the filarial worms produce damage to the human host
  - ↳ In chronic filariasis, damage to the lymphatics caused by adult parasites &  $T_H1$ -mediated immune responses → formation of granulomas around adult parasites
  - ↳ H.S. to microfilaria in lungs is thought to be associated with **tropical pulmonary eosinophilia**. IgE & eosinophils may be stimulated by IL-4 & IL-5 resp, which are secreted by filarial-specific  $T_H2$  helper T-cells.

# MALARIA

*P. falciparum* → cause cerebral malaria

*P. vivax*

*P. ovale*

*P. malariae*

transmitted by *Anopheles* female mosquito

## Pathogenesis

*P. vivax*, knowlesi, malaria, ovale → parasitemia, mild anaemia, rare splenic rupture, nephrotic syndrome

*P. falciparum* → associated with high levels of parasitemia, that may lead to severe anaemia, cerebral symptoms, renal failure, pulmonary edema, death depending on susceptibility of host