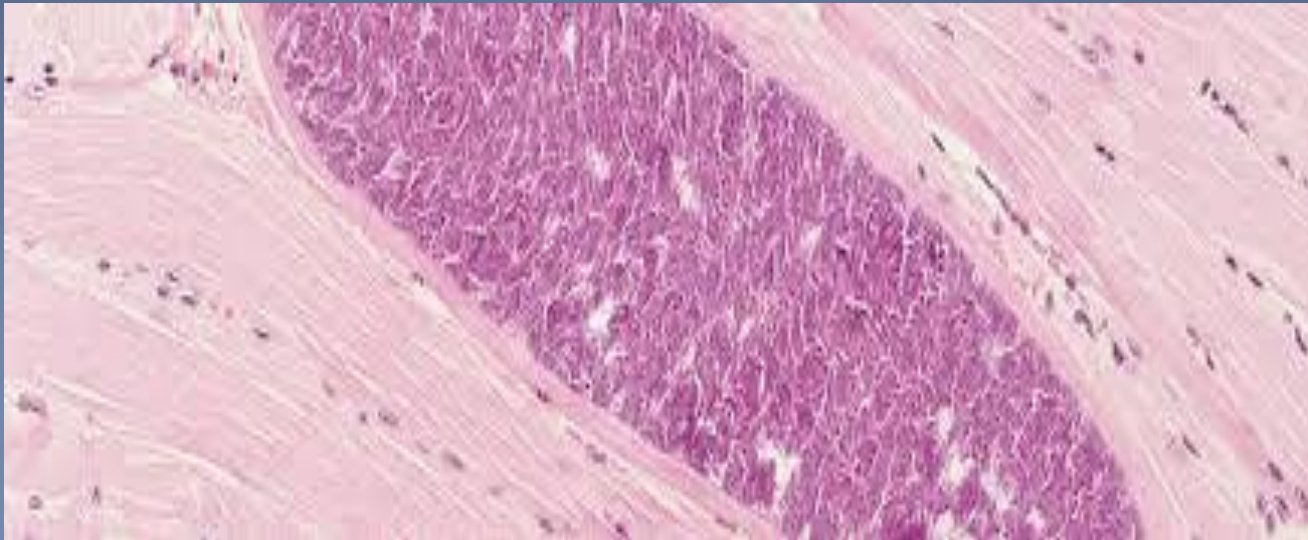


Sarcocystosis

Also k/as: Sarcosporidiosis



Sarcocystosis

- Caused by *Sarcocystis* spp.
- **Herbivorous:** act as intermediated host (tissue cyst in muscles)
- **Carnivorous:** Act as a definitive host
 - Ingest sarcocyst by ingesting intermediate host
- **Omnivorous (Man & Pigs):** Definitive host for some species & Intermediate host for some
- **Human sarcocystosis:**
 - Intestinal sarcocystosis
 - Muscular sarcocystosis

Etiology

- *Species of Sarcocystis*
- Phylum: **Apicomplexa**
- More than 100 species infect mammals
- Two of them parasitized the **human intestine**:
 - *S. hominis*
 - *S. suihominis*
- *S. lindemanni*: observed in **human muscles** in **1968**

Geographic distribution

- **Intestinal sarcocystosis:** worldwide
- **Muscular sarcocystosis:** Egypt, India, Malaysia, Thailand

Sources of infection & mode of transmission

- **In humans: intestinal form**

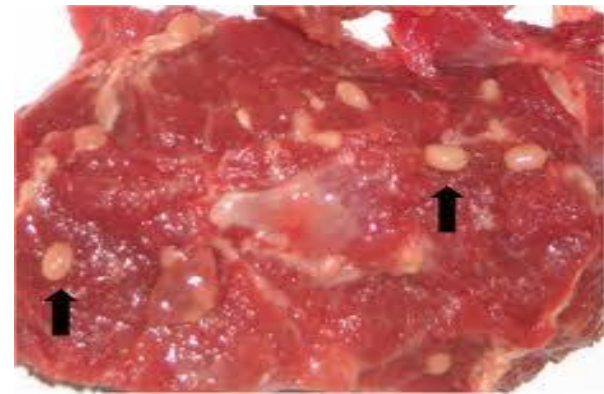
- Source: Beef or pork containing mature sarcocyst
- Mature sarcocyst: contains Bradyzoites (2-2.5 months of infection)
- Mode of transmission:
- Ingestion of raw and undercooked infected meat

- **In humans: muscular form**

- Not clear

- In cattle and swine:

- Sources: oocyst & sporocyst
- Mode of transmission: ingestion of contaminated feed with faeces



Life cycle

Host range:

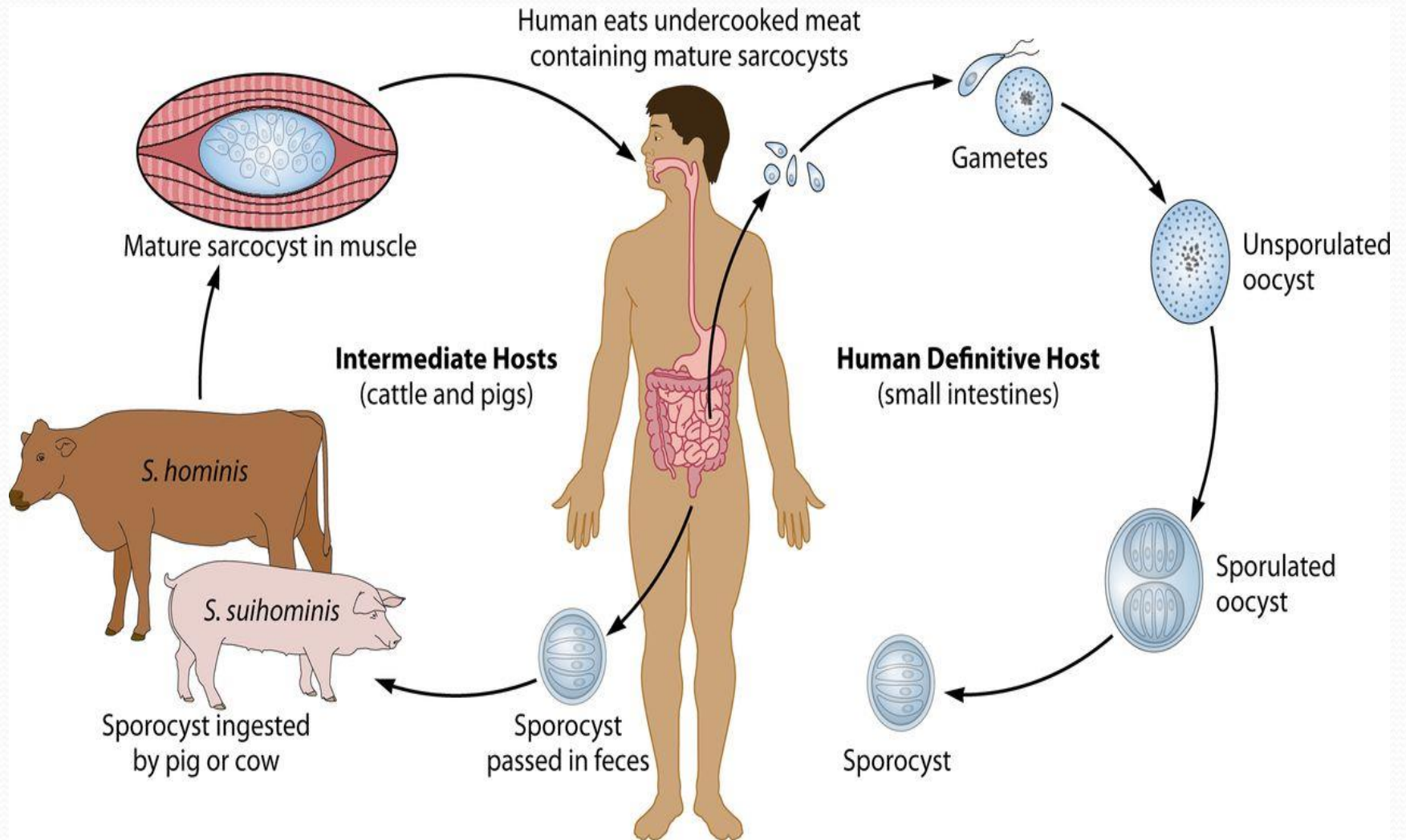
- **Intestinal sarcocystosis:**

- Definitive host: man
- Intermediate host
 - *S. hominis* (Cow)
 - *S. suis* (Pig)



- **Muscular sarcocystosis:** final host (unknown)

Life cycle





‘Veterinary Epidemiology & Zoonoses’

VPH-321

(Credit Hours-2+1)

Disease in human

- **Intestinal sarcocystosis:** usually asymptomatic
- Experimentally:
- ***S. hominis***
 - In 3-6 hrs after ingestion
 - Causes nausea, abdominal pain, diarrhoea
 - Abdominal pain & diarrhoea reoccurred: 14-18 days after ingestion
 - Rarely: necrotizing enteritis
- **Muscular sarcocystosis:**
- **Asymptomatic**
- In rare cases: muscular weakness, muscular pain, myositis, periarteritis, subcutaneous tumefaction

Diagnosis

- **Demonstration of oocyst & mature sporocyst in faeces:**
 - ✓ After **9-10 DPI**
 - ✓ By using **Zinc sulfate flotation technique**
 - ✓ **Size of sporocyst:**
 - *S. hominis*: 13 to 17 μm by 10.8 μm
 - *S. sui/hominis*: 11.6 to 13.9 μm by 10.8 μm

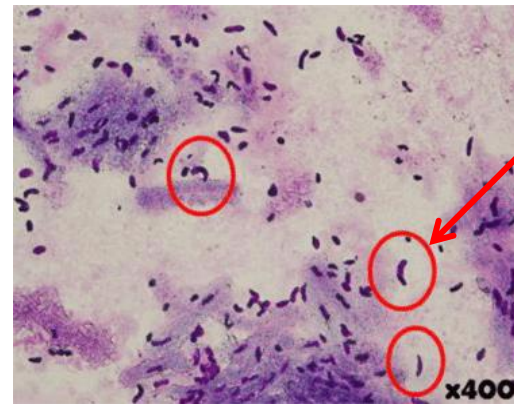
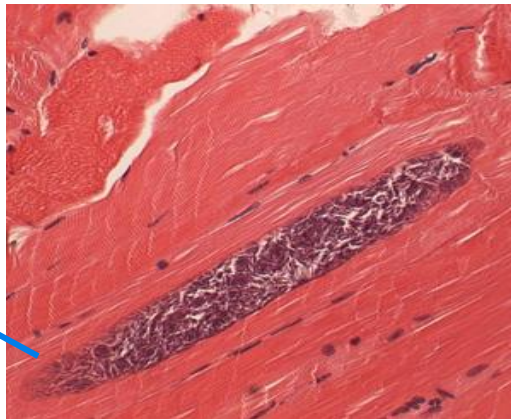


Sporulated oocyst

Diagnosis

- **Demonstration of sarcocyst in muscles: beef & pork**
 - Found along the length of muscle fiber
 - Whitish in color
 - Microscopic in size
 - Septate
 - **Bradyzoites:** banana shaped ($6-20\ \mu\text{m}$ by 4 to $9\ \mu\text{m}$)

Sarcocyst



Bradyzoites

Diagnosis

- **Serologic test:**

- Indirect immunofluorescence
- ELISA



Treatment

- Currently, there is **no proven** treatment for either intestinal or muscular sarcocystosis
- **Muscle sarcocystis:** Albendazole found efficacious

Prevention and control

- **Cattle & Swine:**
 - **Avoid ingesting human excreta**
 - **Contaminated pasture**
 - ✓ Proper disposal of human excreta
- **In Human:**
- **Avoid eating infected meat**
 - Veterinary inspection of meat
 - Proper cooking of meat:
 - Proper freezing: reduces number of cyst
 - Education of the people about the risk of eating raw meat