

# Surgery in Tropics

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## LEARNING OUTCOME

1. To Know the different Diseases common in tropical areas
2. Pathogenesis of common diseases
3. Clinical Features
4. Investigations
5. Outline of management



# List of Diseases

- ~~Amoebiasis~~
- ~~Ascariasis~~
- ~~Hydatid Cyst~~
- Filariasis
- Asiatic Cholangiohepatitis
- Schistosomiasis



# AMOEBIASIS

- *Entamoeba histolytica*
- Indian subcontinent, Africa, parts of central & south America
- Majority remain asymptomatic carriers
- Mode of infection: faeco-oral route
- Hygiene, sanitation, immunocompromised, alcoholic

- Incubation period (IP): 4 days-4 months
- Intestinal amoebiasis: **flask-shaped** ulcers form in submucosa
- Abscess cavity contains **chocolate-colored, Odourless, anchovy sauce-like fluid** with mixture of necrotic liver tissue and blood
- Pus in abscess is sterile unless secondarily infected







## Clinical Features

- Young adult male
- Insidious onset with non-specific symptoms;
- Abdominal pain, anorexia, fever, night sweats, Malaise, cough, weight loss
- Gradually progress to more specific symptoms; pain in the right upper abdomen, right shoulder tip, hiccoughs, non-productive cough
- Bloody diarrhea or travel to endemic area





## Examination

- Toxic, anaemic
- Upper abdominal rigidity, tender hepatomegaly, tender,
- Bulging intercostal spaces
- Skin edema
- Pleural effusion
- Basal pneumonitis
- Occasionally, tinge of jaundice or ascites may be present,
- Rarely rupture into peritoneal, pleural or pericardial cavity

# Amoeboma

- Chronic granuloma arising in the large bowel (caecum)
- Long-standing amoebic infection that has been treated intermittently with drugs without completion of a full course, a situation that arises from indiscriminate self-medication
- Can be mistaken for carcinoma
- Suspect in endemic area with generalized ill health, pyrexia, mass in right iliac fossa with hx of blood-stained mucoid diarrhea
- Altered bowel habit



## Investigation

- Anaemia, leukocytosis, ESR, CRP
- Hypoalbuminaemia
- Deranged LFT; alkaline phosphatase
- Complement fixation, **indirect haemagglutination (IHA)**,
- Indirect immunofluorescence, enzyme-linked
- Immunosorbent assay (ELISA)
- Counter-immunoelectrophoresis; acute infection
- Rigid sigmoidoscopy; rectosigmoid-shallow skip lesions, 'flaskshaped' or 'collar-stud' undermined ulcers (biopsy, scraping, Microscopy; trophozoites)





Figure 1: Colonoscopy January 11, 2013

## Imaging Techniques

- Ultrasound; abscess cavity, hypoechoic or anechoic lesion with ill-defined borders, internal echoes suggest necrotic material or debris
- Computed tomography (CT scan); raised right hemidiaphragm, pleural effusion, evidence of Pneumonitis
- Colonoscopy and biopsy







## Medical Treatment

- Intestinal & early hepatic amoebiasis: metronidazole (800mg TID for 5-10 days) or tinidazole/ornidazole (2g OD for 3 days)
- Eliminate luminal cysts: diloxanide furoate or paromomycin 500mg TID for 10 days
- Aspiration; imminent rupture of an abscess is expected, helps penetration of the drugs \*pleural cavity pericardial sac or peritoneal cavity
- Secondary infection, other drug treatment should be added

## Surgical Treatment

- Rupture into pleural cavity, peritoneal or pericardial cavity
- Resuscitation, drainage, appropriate lavage with vigorous medical treatment
- If in Large bowel, severe hemorrhage and toxic megacolon may occur but are rare
- Resection of bowel with exteriorization along with supportive therapy
- Amoeboma not regressed -> colonic resection especially if cancer cannot be excluded

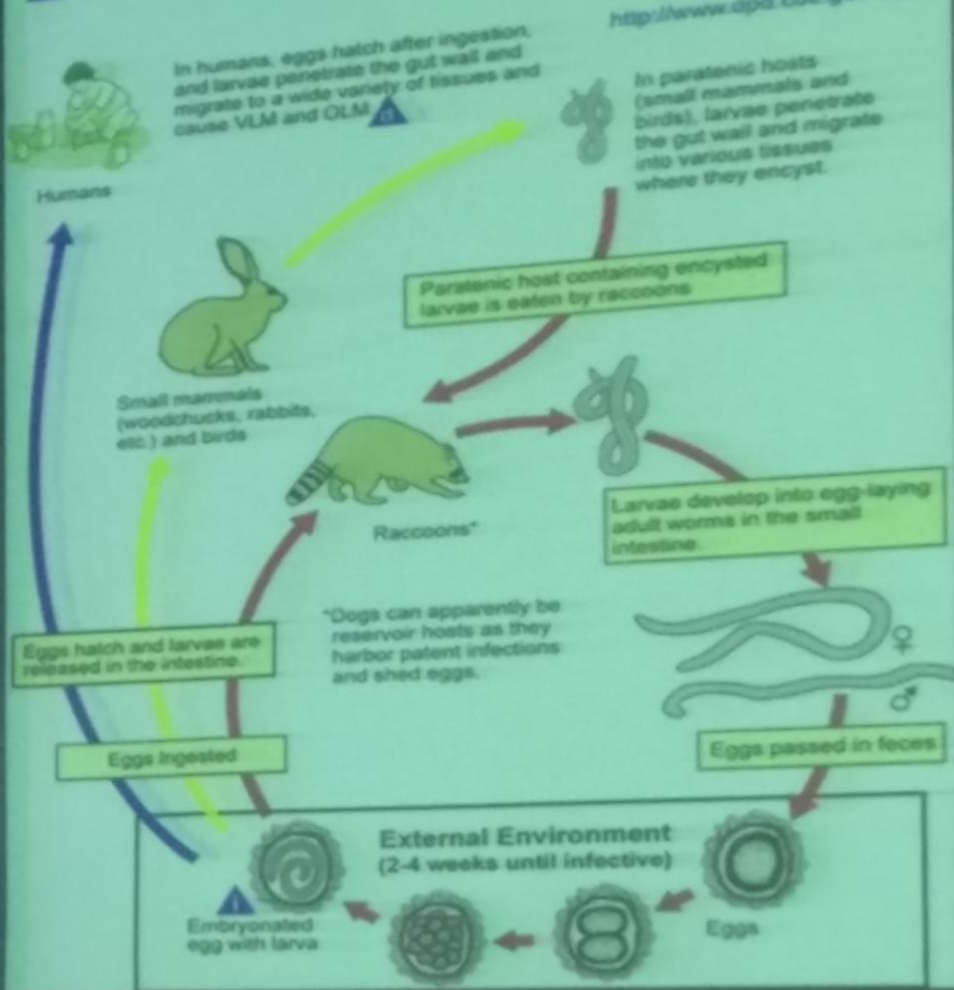
# ASCARIASIS

- *Ascaris lumbricoides*, roundworm, common intestinal nematode to infest humans
- Quarter of the world's population
- Larva-> pulmonary symptoms
- Adult worm-> intestinal symptoms





▲ = Infective Stage  
○ = Diagnostic Stage



## Clinical Features

- Larval stage: pulmonary symptoms- dry cough, chest pain, dyspnoea, fever (Loeffler's syndrome)
- Adult worm: malnutrition, failure to thrive, abdominal pain.
- Worms can migrate into CBD causing ascending cholangitis & obstructive jaundice. Acute pancreatitis when worm in pancreatic duct
- Small intestine obstruction: bolus of adult worms incarcerated in the terminal ileum –SURGICAL EMERGENCY, rarely perforation may occur from ischaemic pressure necrosis from the bolus of worms

## Medical Treatment

- Pulmonary phase is self limiting disease so treat symptomatically
- Single dose albendazole 400mg, ivermectin (150-200microgram/kg), or mebendazole 100 mg BD for 3 days \*can precipitate intestinal obstruction
- Intermittent/subacute intestinal obstruction; IV fluids, NG suction. Hypertonic saline enema





- leostomy: perforation in the presence of large number of worms
- exteriorisation ideal in severe sepsis
- resection of diseased ileum, closure of distal bowel and end-to-side ileotransverse anastomosis
- Endoscopic removal: CBD, pancreatic duct \*if endoscopic fails, do open exploration
- Cholecystectomy
- FULL COURSE ANTI-PARASITIC must follow any surgical intervention



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# FILARIASIS

- *Wuchereria bancrofti* carried by mosquito
- Affects >90 million people worldwide: 2/3rd in China, India & Indonesia
- WHO: 2nd most common cause, after leprosy, of long-term disability





# Pathogenesis

- Colonise lymphatic system
- Once bitten by the mosquito, the matured eggs enter the human circulation to hatch and grow into adult worms
- The process of maturation takes about one year.
- The adult worms mainly colonise the lymphatic system.



# Clinical Features

- Episodic attack of fever
- Lymphadenitis
- Lymphangitis...recurrent-> fibrosis of lymphatic channels
- Massive lower limb edema
- Skin thickening (obstruction of cutaneous lymphatics)
- Secondary streptococcal infection
- B/L lower limb filariasis often associated with scrotal & penile elephantiasis
- Chyluria
- Chylous ascites
- Mild respiratory symptoms: dry cough \*tropical pulmonary eosinophilia







## Treatment

- Diethylcarbamazine 2mg/kg TID for 12 days or as a single dose
- Albendazole 400mg with ivermectin 200microgram/kg in a single dose with or without DEC (early stage-before gross deformity)
- Intermittent pneumatic compression (early stage of limb swelling)
- Hydrocoele: excision & eversion of the sac with if necessary excision of redundant skin

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# HYDATID DISEASE

- *Ecchinococcus granulosus*, dog tape worm
- Sheep-farming community



