(4)

Page No.
Date / /

Lymphatic Filariasis

Filarial worms are tissue dwelling nematods. The larval stages are inoculated by biting mosquitoes or flies. The larvae developing into adult worm (2-50cm long) which after mating, produce millions of microfilariae [120 - 320 µm long] that migrate in blood or skin.

- Life cycle is completed when the vector takes up microfilariae while feeding on humans.
- Disease is due to the host's immune response to the worm [both adult and microfilariae], particularly dying worms, and its pathogenesis and severity vary with the site and stage of each species. The worms are long living the microfilariae survive 2-3 yrs and adult worms 10-15 yrs. The infection are chronic and most in individuals constantly exposed to re infection.
- Adult worms of Wuchereria bancrofti and Brugia malayi mainly affect lymphatics and microfilariae of these two exist in peripheral blood but affects pulmonary capillaries mainly.

Infection with filarial worms Wuchereria bancrofti, Brugia malayi is associated with clinical outcomes ranging from subclinical infection to chronic lymphedema and elephantiasis.

Bancroftian is transmitted by night biting culicine or Anopheline mosquito in most areas.

In adult worm 4-10 cm in length, live in lymphatics, and female produces microfilariae which circulate in large nos in peripheral blood usually at night.

Pathology :

Toxin release by adult worm cause lymphangiectasia, this dilatation of lymphatic vesseles leads to lymphatic disfunction and chronic clinical manifestation of lymphatic filariasis, lymphoedema and hydrocele.

- Death of the adult worm results in acute filarial lymphangitis. The filaria are symbiotically infected with rickettsia like bacteria [wolbachia] and release of lipopolysaccharides from these bacteria contributes to inflammation.
- Lymphatic obstruction persist after death of the adult worm.
- Secondary bacterial infections cause tissue distruction.

Clinical features :

- Acute filarial lymphangitis presents with pain, fever, tenderness and erythema along the course of inflamed lymphatic vessels.
- Inflammation of the spermatic cord, epididymitis and testes is common.
- It lasts for few days but may recurs several time a year. Temporary oedema becomes more persistent and regional lymph nodes enlarge.
- Progressive enlargement, thickening, corrugation, fissuring and bacterial infection of skin and subcutaneous tissue result in gradually advancing irreversible "elephantiasis".

Page No.
Date / /

Investigation / Diagnosis

- In the earlier stages of lymphangitis, the diagnosis is made on clinical grounds, supported by eosinophilia and sometimes by the filarial serology. Filarial infection cause highest eosinophile count.
- Microfilariae can be found in peripheral blood at night, and either are seen moving in a wet blood cell or are detected by microfiltration of a sample of lysed blood.
- Indirect flouresence and ELISA detect antibody in over 95% of active cases and 70% of establish elephantiasis.
- Highly sensitive and specific immunochromatographic card test for detection of filarial infection are now available.

Treatment

- Treatment of the individual is aimed at reversing and halting disease progression.
- Diethylcarbamazine [DEC] kills microfilariae and adult worms.
- A single dose of either ivermectin or albendazole in combination with DEC also eliminates microfilaraemia.

Prevention

- Vector control
- Treatment of whole population in endemic areas with annual single dose DEC either alone or in combination with ivermectin or albendazole can reduce filarial transmission.

Date / /

Japanese encephalitis

This flavivirus is an impt cause of encephalitis in Japan, Russia, India etc. Pigs and aquatic birds are the virus reservoirs and transmission is by mosquitoes. Exposure to rice paddies is a recognised risk factor

Clinical features :

The incubation period is 4-21 days. most infections are probably subclinical in childhood and only around 1% of infections leads to encephalitis

There is an initial systematic illness with fever, malaise and anorexia, followed by photophobia, vomiting, headache and changes in brain-stem function.

- Neurological features arising from encephalitis include meningitis, seizures, cranial nerve palsies, flaccid or spastic paralysis and extrapyramidal features
- Approximately half of survivors are left with neurological sequelae.

Investigation, Treatment and Prevention :

- There is neutrophilia and often hyponatraemia. CSF (cerebrospinal fluid) reveals lymphocytosis and elevated protein. serological testing may be helpful and there is CSF antigen test
- Treatment is supportive by anticipating and treating complications
- Vaccination for travellers to endemic areas during the monsoon period is effective prophylaxis. some endemic countries include this vaccination in their childhood schedules.

Amoebiasis

It is caused by Entamoeba histolytica which is spread b/w humans by its cysts. E. histolytica also causes amoebic dysentery or liver abscess.

Pathology :

Cysts of E. histolytica are ingested in waters or uncooked foods contaminated by human faeces. Infection may also be acquired through anal/oral sexual practices. In the colon, vegetative trophozoites forms emerge from the cysts. The parasite may invade the mucous membrane of the large bowel producing lesions. These are flask-shaped ulcers varying greatly in size and surrounded by healthy mucosa. Most amoebic ulcers may cause severe haemorrhage but rarely perforate the bowel wall.

- Amoebic trophozoites can emerge from the vegetative cyst from the bowel and be carried to the liver in a portal venule. They can multiply rapidly and destroy the liver parenchyma, causing an abscess. The liquid contents at first have a characteristic pinkish colour which may later change to chocolate brown.
- Cutaneous amoebiasis, though rare, causes genital, peri-anal or peri-abdominal ulceration and malignancy.

Clinical features :-

Intestinal amoebiasis - Amoebic dysentery

Most amoebic infections are asymptomatic. The

incubation period of amoebiasis ranges from 2 weeks to many yrs, followed by a chronic course with abdominal pain and 2 or more unformed stool a day. Offensive diarrhoea alternating with constipation, and blood or mucus in the stool are common. There may be abdominal pain.

Amoebic liver abscess:-

The abscess is usually formed in right hepatic lobe. There may not be associated diarrhoea. Early symptoms may be local discomfort only and malaise; later, a swinging temperature and sweating may develop, usually without marked systemic symptoms or associated cardio-vascular signs. An enlarged, tender liver, cough and pain in the right shoulder are characteristic, but symptoms may remain vague and signs minimal.

6. Investigations:

- Stool and any exudate should be examined at once under microscope for motile trophozoites containing red blood cells. Sigmoidoscopy may reveal typical flask-shaped ulcers, which should be scraped and examined immediately for E. histolytica.
- In endemic areas 1/3rd of the population may be symptom less passers of amoebic cysts.
- Serum antibodies are detected by immuno-flourescence in over 95% of patients with hepatic amoebiasis and intestinal amoebiasis but in only about 60% of dysenteric amoebiasis.

Page No.
Date / /

Treatment :

Intestinal and early hepatic amoebiasis responds quickly to oral metronidazole or other long acting nitroimidazoles like tinidazole or ornidazole. Nitroxozanide is an alternative drug.

Prevention :

We should not eat fresh uncooked vegetables or drink uncleaned water.

(mam's notes)