

ER-INF Combined Conference

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Discussion

1. Fever with eosinophilia
2. Amebic liver abscess

Eosinophilia

- Absolute eosinophil count more than $700/\mu\text{L}$
- caused by immunodeficiency, neoplasms, collagen vascular disease, and dermatologic disorders
- Returning travelers and long-term residents of tropical countries are as prone to nonparasitic causes of eosinophilia

Textbook of Family Medicine, 7th ed.

Eosinophilia

- Reaction to a tissue-invasive helminth
- initial larval migration phase: may up to 5000/mm
- Weeks or months later, reside in the intestine: mild or absent
- protozoan infection: not seen, except intestinal tract penetrated by *E. histolytica*, *G. lamblia*, or *Isospora belli*.



Mandell: Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 7th ed.

Parasitic Causes of Eosinophilia

TABLE 330.3 -- Parasitic Causes of Eosinophilia	
Widespread Geographic Distribution	Limited Geographic Distribution
Ascariasis (migratory phase)	
Hookworm	Clonorchiasis
Strongyloidiasis	Paragonimiasis
Tropical pulmonary eosinophilia	Fascioliasis
Lymphatic filariasis	Angiostrongyliasis
Schistosomiasis	Opisthorchiasis
Toxocariasis	Onchocerciasis, loiasis, and other nonlymphatic filariases
Cysticercosis (<i>Taenia solium</i>)	Gnathostomiasis
Echinococcosis (cyst rupture)	Capillariasis
Trichinosis	Trichostrongyliasis
Trichuriasis	
Aberrant helminthiasis from animals	

Mandell: Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 7th ed.

Physical Findings

- Dermatitis (onchocerciasis, cutaneous larva migrans, larva currens);
- Migratory swellings (loiasis, gnathostomiasis),
- Wheezing or cough (*Strongyloides*, hookworm, *Ascaris*, or *Schistosoma* larvae in the lung),
- Hemoptysis (*Paragonimus*),
- Hepatomegaly (*Toxocara*, *Echinococcus*);
- Lymphedema (filariasis);
- Facial edema, myositis (trichinosis);
- Subcutaneous mass (cysticercosis);
- Meningeal signs (angiostrongyliasis, gnathostomiasis);
- Abdominal tenderness (angiostrongyliasis, anisakiasis, fascioliasis).

Mandell: Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 7th ed.

Examination

- Stool examinations
- day and night blood concentrations (filariasis);
- skin snips (onchocerciasis);
- rectal snips or scrapings (schistosomiasis);
- urine concentration (schistosomiasis);
- duodenal aspirate (strongyloidiasis);
- sputum for O&P (migrating larvae, *Strongyloides*, *Paragonimus*);
- biopsy of any abnormal lesions
- Serology: Schistosomiasis and strongyloidiasis

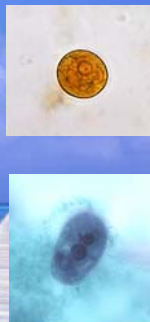
Treatment

- most anthelmintic drugs only work on adult worms, empiric therapy of a traveler with eosinophilia soon after return is of no benefit.
- treated patients should be followed up to be certain that both infection and eosinophilia have resolved
- exacerbation of the eosinophilia may occur for 2 to 3 weeks after treatment as parasites die and release their antigens
- no response for a month or more after treatment may be a sign of inadequate response to treatment.

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Entamoeba histolytica Amebiasis

- a cyst stage- infective form; a trophozoite stage- causes invasive disease
- ingestion of amebic cysts; this is usually via contaminated food or water, or venereal transmission through fecal-oral contact
- In small intestine, excyst to form trophozoites, invade and penetrate the mucous barrier of the colon causing tissue destruction and increased intestinal secretion, and can thereby ultimately lead to bloody diarrhea



Amebic Liver Abscess

- ascending by portal venous system
- Clinical manifestations: one to two weeks of fever (38.5 to 39.5°C), RUQ pain, Concurrent diarrhea
- presentation usually occurs within 8 to 20 weeks (median 12 weeks)

Diagnosis

- leukocytosis ($>10,000/\text{mm}^3$) without eosinophilia
- elevated alk-p in 80%, elevated AST/ALT
- Fecal microscopy positive in only 18 %
- Culture positive in 75 %
- Serologic testing: 92-97%, may be negative in the first seven days
 - Indirect hemagglutination (IHA) is the most sensitive
 - agar gel diffusion and counterimmunophoresis remain positive for 6 to 12 months

Treatment

- metronidazole (500 to 750 mg orally three times daily for 7 to 10 days)- cure rate of more than 90 percent
- tinidazole, ornidazole, and nitazoxanide are alternative agents

