

Lecture 2



Cerebral infection

- Additional Notes
- Important
- Explanation
- Examples

Chronic Cerebral and meningeal Infection

- General symptoms & signs for chronic cerebral bacterial infection:
 - ✓ Chronic head ache & neck or back pain.
 - ✓ Papilledema (optic disc swelling due to increase ICP)
 - ✓ Clumsiness
 - ✓ Hydrocephalus
 - ✓ Other neurologic deficit (facial & arm weakness, double vision etc)
- Neurological disability and, may be fatal if not treated
- They usually have: slow insidious onset with progression of signs and symptoms over a period of weeks
- They differ from those of acute infection which have rapid onset of symptoms and signs

Causes of cerebral infection

Bacteria	Fungus	Parasite	Virus
Tuberculosis	Cryptococcus neoformans (Under the microscope it looks like RBC & It's media is India ink)	Toxoplasma gondii	Mumps
Brucellosis	Candida albicans (mainly affects immunocompromised patients)		Herpes simplex
Partially treated acute meningitis (meningitis if not treated well).	Aspergillus species		HIV
Cerebral abscesses (prefered as chronic infection).			
Syphilis-caused by treponema pallidum.			

Laboratory examination

- Laboratory examination of CSF including:-
 - ✓ Collect of CSF and checking for the intraocular pressure (infection increases IOP)
- Biochemical investigation for :
 1. Total protein (increases in infection)
 - PCR or other molecular biopsy test for presence of bacterial element
 2. Glucose level in comparison to the serum glucose level (reduction of glucose in infection)
- Microscopy:
 1. Presence of organism
 2. Total white cell count
- Differential count mainly for:-
 1. Polymorphic (increases > indicator for acute infection)
 2. Lymphocytes (increases > indicator for chronic infection)

TB and Brucellosis are the most common cerebral infection in KSA.

Tuberculosis	Brucellosis
Transmitted through air.	Transmitted through domestic animal & in the raw milk.
Cough and hemoptysis	No cough
Night sweating	Night sweating
Chronic continuous fever.	Fever (in between the attacks of fever the patient is not very ill).
Caused by: Myobacterium Tuberculosis (positive Ziehl-Neelsen) (culture in L.j. Media) (positive fast acid bacilli test) (Mantoux test, Tuberculin skin test)	Caused by: Brucella Melitensis (gram negative coccobacillus bacteria)
Contagious (transmitted between human)	Infectious (does NOT transmitted between human)
Treatment: Rifampicin + isoniazid + Ethambutol + Pyrazinamid (2 months) then: Rifampicin + isoniazid (4-6 months)	Treatment: Use any 2 of these three: 1) Tetracycline (NOT used in pregnancy & childhood) 2) Rifampicin 3) Cotrimoxazole

Quiz

1. the commonest parasitic cause of chronic cerebral infarction and meningitis is:
a) Gambines b) acanthamoeba c) toxoplasma gondii d) borliaxaust

2. between the attacks of fever the patient isn't very ill, it indicates which one of the following microorganism:
a) T.B b) Pneumonia c) Candida d) Brucellosis

3. Which of the following drugs is contraindicated when treating a child with brucellosis:
a) Rifampicin b) Cotrimoxazole c) Tetracycline d) pyrazinamide

Quiz

4. which one of the following is a major risk factor of T.B in Saudi Arabia:

- a) AIDS b) diabetes mellitus c) U.R.T.I d) myocardial infarction

5. which one of the following should be excluded before diagnosing a patient with T.B

- a) Pneumonia b) Angina pectoris c) Brucellosis d) L.R.T.I

6. the commonest bacterial cause of chronic cerebral infarction and meningitis is:

- a) T.B + brucellosis b) T.B + E. Coli c) brucellosis + S.Pneumonia d) pseudomonas aeruginosa