Iranian Journal of Clinical Infectious Diseases
2009;4(1):61-62

ANSWER TO PHOTO OUIZ

A young Afghan man with prolonged fever and headache

DIAGNOSIS:

TB meningitis, multiple CNS tuberculoma and choroidal tubercle

Further physical examination revealed neck stiffness and positive Brudzinski sign. Thus, lumbar puncture (LP) was performed. The result was: WBC =150/ml, lymphocyte= 65%, PMN= 35%, glucose=18mg/dl, protein=65mg/dl, concomitant blood sugar=90mg/dl.

With possible diagnosis of chronic meningitis, evaluation was completed to rule out causes of chronic meningitis. CSF wright, VDRL, indian ink, cytology for malignant cell were negative. CSF TB-PCR was positive, even though, CSF smear was negative for AFB. Brain CT scan with contrast showed multiple ringed enhanced small masses in favor of tubercoluma (figure 1) and fundoscopy revealed choroidal tubercle.

Treatment with isoniazid, rifampin, ethambutal, pyrazinamide and vitamin B6 was prescribed and corticosteroid was also added. Two weeks later his condition gradually improved and he was discharged on anti-TB treatment. During follow up, culture of CSF was positive for TB and the patient's general condition improved.

DISSCUSION

Tuberculous meningitis, a form of tuberculosis that affects the meninges covering brain and spinal cord, is associated with high mortality and disability among survivors (1). Intracranial tuberculoma is one of the most serious complications of tuberculous meningitis (2). TB meningitis is an insidious form of meningitis characterized by headache, low grade fever, stiff neck and cranial nerve palsies. Acute menigoencephalitis characterized by coma, raised intracranial pressure, seizure and focal neurological deficits. The top 7 manifestations of TB meningitis are: coma, onset of disease more than 5 days, lymphocyte predominant in CSF, CSF glucose level of 50% lower than concurrent blood level, abnormal CT finding, abnormal ocular finding and proved tuberculosis of other site (3). Risk factors of poor prognosis in TB meningitis are: age less than 2 years, decreased level of consciousness on admission, convulsion, CSF protein more than 70mg/dl and CSF glucose less than 20mg/dl (4). For diagnosis of TB meningitis initial lumber puncture reveals smear-positive acid fast bacilli in up to 40%, however, repeated examinations increase the yield as high as 87% (5).

CSF adensione deaminase activity (ADA) can be used for diagnosis of TB meningitis. CSF ADA> 8.0U/L has sensitivity and specificity of 80% and 90%, respectively (6). PCR system can detect 10 pg of DNA and 10-50 colony forming unit (CFU) of mycobacterium tuberculosis. Sensitivity and specificity of PCR is 85% and 98.4%, respectively (7).

TB meningitis is a curable disease. Within extrapulmonary manifestations of tuberculosis, ocular involvement is uncommon but it is important as it can cause visual loss. It can involve choroids, nasolacrymal duct, retina, optic disk, conjunctiva, and cause panophthalmitis.

Management is medical and once diagnosis presumed or confirmed, surgical intervention should be avoided (8).

REFERENCES

1. Prasad K, Singh MB. Corticosteroids for managing tuberculous meningitis. Cochrane Database Syst Rev 2006; (1):CD002244.

2. Cesur S, Arabaci H, Sözen TH, Tekeli E. Case report: evaluation of two cases of tuberculoma incident to tuberculosis meningitis. Mikrobiyol Bul 2002;36(1):91-4.

3. Li Y, Wang Z, Wang HL, Yu XZ. An analysis of the early diagnostic criteria for tuberculosis meningitis. Zhonghua Nei Ke Za Zhi. 2007;46(3):217-9.

4. Ikeda K, Sugimori M, Kawasaki K. Tuberculous meningitis in Japanese children between 1980-1991. Kekkaku 1992;67(9):607-12.

5. Holdiness MR. Management of tuberculosis meningitis. Drugs 1990;39(2):224-33.

6. Sakhelashvili MI, Stadovich NM, Omelian OV, Nakonechnyĭ ZM. Pathology of tuberculosis meningitis in adults. Lik Sprava 2001;3:33-6.

7. De Benedetti Z ME, Carranza LB, Gotuzzo HE, Rolando CI. Ocular tuberculosis. Rev Chilena Infectol 2007;24(4):284-95.

8. Chuka-Okosa CM. Tuberculosis and the eye. Niger J Clin Pract 2006;9(1):68-76.