Tuberculous Orchiepididymitis, Meningoencephalitis and Hydrocephalus

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ABSTRACT

Tuberculous meningoencephalitis (TBM) is a rare and serious, often fatal presentation of active tuberculosis and account for about 1% of cases. Early diagnosis and prompt treatment of TBM is essential to reduce morbidity and mortality. Here, we report a case of TBM in 60-year-old man. TBM was considered on the basis of clinical presentation, laboratory findings (hyponatraemia), cerebrospinal fluid studies, radiological findings (hydrocephalus on multi-slice computed tomography), and history of orchiepididymitis of unknown origin one year earlier, together with information that the patient originated from Kosovo where incidence of tuberculosis is still high. Mycobacterium tuberculosis was cultured from cerebrospinal fluid on Lowenstein-Jensen medium confirming diagnosis of TBM. Subsequently, acid-fast bacilli (AFB) staining on samples obtained after orchiectomy a year ago was performed, revealing AFB. Anti-tuberculosis therapy is still in course. This is the second case of tuberculous meningoencephalitis with the same disease pattern (i.e. tuberculous orchiepididymitis – meningoencephalitis) in our Department, and this fact was crucial for the presumptive diagnosis and urgent treatment of TBM. The former case was described five years ago.

Key words: tuberculous, orchiepididymitis, meningoencephalitis, hydrocephalus

Introduction

Central nervous system (CNS) disease caused by Mycobacterium tuberculosis is an uncommon yet highly devastating manifestation of tuberculosis. CNS tuberculosis (TB) account for approximately 1% of all cases of tuberculosis, carries a high mortality and a distressing level of neurological morbidity\(^1\). Early diagnosis of CNS TB is necessary for appropriate treatment to reduce this morbidity and mortality\(^2\). Mycobacterium tuberculosis infection is prevalent in more than 2 billion people worldwide, with about 15 million of these individuals with active infection\(^3,4\). Tuberculosis remains a worldwide burden, with a large majority of new active tuberculosis cases occurring in underdeveloped and developing countries\(^4\). In 80% of new tuberculosis cases, demographic factor such as poverty, crowding, malnutrition, and a compromised immune system play a major role in the worldwide epidemic, while the remaining 20% of tuberculosis cases are associated with HIV in Sub-Saharan Africa\(^5,6\).

Here we report a case of CNS TB in an immunocompromised male.

Case Report

A 60-year male, originated from Kosovo, with dilative cardiomiopathia and chronic liver disease, was admitted to the Nephrology unit with a slight fever, cephalgia, malaise and signs of chronic renal failure. In anamnestic data, the patient mentioned orchiepidydimitis of unknown origin one year back when underwent right side orchiectomy. Laboratory on admission: CRP 83.5 mg/L, ESR 112 mm/h, RBCs 3.02 \(\times\) 10\(^{12}\)/L, Hb 86 g/L, WBCs 6.2 \(\times\) 10\(^9\)/L, platelets 279 \(\times\) 10\(^9\)/L, urea 8.2 mmol/L, creatinine 191 µmol/L, Na 127 mmol/L, bilirubine 10 µmol/L, AST 37 IU/L, ALT 45 IU/L, AP 191 IU/L, GGT 274 IU/L. A chest radiogram showed some degree of miopatic and enlarged cardiac configuration but without pathological inflammation. During eight hospital days, the patient became confused, lethargic with sphincter dysfunction. Multi-slice computed tomography (MSCT) of the brain showed normotensive hydrocephalus (Figure 1). Physical examination revealed a stiff neck and urgent lumbar puncture was performed. Cerebrospinal fluid (CSF) revealed: L 59\(\times\)10\(^6\)/L (neutrophils 87, lymphocytes 7, monocytes 4 and basophiles 2%), glucose level 1.6 mmol/L, a
The typical analysis of cerebrospinal fluid with CNS TB demonstrates a moderate lymphocytosis, moderately elevated protein levels, and hypoglycorrhachia. As such, the CNS profile of CNS TB mimics the profiles of a large list of both infectious and noninfectious processes that affect the CNS. The predominance of neutrophils in some cases likely represents an earlier stage of infection, which, over the course of days to weeks, will convert to a predominantly lymphocytic profile. CSF can also demonstrate the presence of acid-fast bacilli. Mycobacterium tuberculosis complex can be identified specifically by DNA probe or by nucleic acid amplification test. Non-invasive imaging modalities, such as computed tomography scan and magnetic resonance imaging are routinely used in the diagnosis of neurotuberculosis.
Treatment for all forms of CNS TBC should consist of 4 drugs (isoniazid, rifampicin, pyrazinamide, ethambutol) for 2 months followed by 2 drugs (isoniazid, rifampicin) for at least 10 months\(^7\). Studies show that adjunctive corticosteroids decreases mortality\(^8\).

Tuberculous meningoencephalitis in presented patient was considered on the basis of clinical presentation, laboratory findings (hyponatraemia) cerebrospinal fluid studies, radiological findings (hydrocephalus on MSCT and MRI of the brain), and history of orchiepididymitis of unknown origin one year earlier, together with information that the patient originated from Kosovo where incidence of tuberculosis is still high. Subsequently, acid-fast bacilli (AFB) staining on samples obtained after orchietomy a year ago was performed, revealing AFB. Anti-tuberculosis therapy is still in course. This is the second case of tuberculous meningoencephalitis with the same disease pattern (i.e. tuberculous orchiepididymitis – meningoencephalitis) in our Department, and this fact was crucial for the presumptive diagnosis and urgent treatment of TB CNS. The former case was described five years ago\(^9\). We point out that in case of meningoencephalitis, hydrocephalus and orchiepididymitis, tuberculosis must be taken into consideration.

**REFERENCES**


**TUBERKULOZNI ORHIEPIDIDIMITIS, MENINGOENCEPHALITIS I HDROCEFALUS**

**SAŽETAK**

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