Case Report/Olgu Sunumu

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Tuberculous meningitis in an intravenous drug user: A case report

Damar içi madde kullanan bir hastada tüberküloz menenjiti: Olgu sunumu

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ABSTRACT

Tubercle bacilli can cause tuberculous meningitis by hematogenous spread from a primary focus.

A 49-year-old foreign national male patient was admitted to the emergency department with complaints of joint pains, fever, cough and malaise. He was diagnosed with a viral upper respiratory tract infection and discharged after treatment was organised. The patient was admitted again the next day with the complaint of inability to urinate, and suprapubic tenderness was also present on physical examination. The patient's laboratory values, different from the previous day, were determined as WBC:16000/µL CRP:115 mg/L, and he was discharged again after oral treatment. On his 3rd admission to the emergency department, he had complaints of weakness and numbness in the legs and spasm in the neck. It was learned that the patient had a history of intravenous substance use. Following the tests, the patient was initially diagnosed with atypical meningitis and was taken to the intensive care unit. As a result of advanced examinations performed here, the patient was diagnosed with tuberculous meningitis and treated.

Patients who experience repeated hospitalisations and exhibit abnormal neurological symptoms should have a thorough physical examination, deeper anamnesis, and considered in the diagnosis that takes uncommon illnesses like atypical meningitis into account.

Key Words: Tuberculosis, Central nervous system infection, Case report

ÖZ

Tüberküloz basili, primer bir odaktan hematojen yayılım yoluyla tüberküloz menenjite neden olabilir.

49 yaşında yabancı uyruklu erkek hasta eklem ağrıları, ateş, öksürük ve halsizlik şikayetleri ile acil servise başvurdu. Hastaya viral üst solunum yolu enfeksiyonu tanısı konmuş ve tedavisi düzenlendikten sonra taburcu edilmiştir. Hasta ertesi gün idrar yapamama şikayeti ile tekrar başvurdu ve fizik muayenede suprapubik hassasiyet de mevcuttu. Hastanın laboratuvar değerleri bir önceki günden farklı olarak WBC:16000/µL CRP:115 mg/L olarak belirlendi ve oral tedavi sonrası tekrar taburcu edildi. Acil servise 3. başvurusunda bacaklarda güçsüzlük ve uyuşma, boyunda spazm şikayetleri vardı. Hastanın intravenöz madde kullanım öyküsü olduğu öğrenildi. Yapılan tetkiklerin ardından hastaya ilk olarak atipik menenjit tanısı konuldu ve yoğun bakım ünitesine alındı. Burada yapılan ileri tetkikler sonucunda hastaya tüberküloz menenjit tanısı konularak tedavi altına alındı.

Tekrarlayan hastane yatışları yaşayan ve anormal nörolojik semptomlar sergileyen hastalar kapsamlı bir fizik muayene, daha derin bir anamnez ve atipik menenjit gibi nadir görülen hastalıkları dikkate alan bir tanıya tabi tutulmalıdır.

Anahtar Kelimeler: Tüberküloz, Merkezi sinir sistemi enfeksiyonu, Olgu sunumu

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Introduction

Tuberculosis bacilli may cause tuberculous meningitis due to hematogenous spread from the primary focus, which is usually located in the lung, peribronchial and peritracheal regions. In the non-immune host, small emboli carrying mycobacteria usually spread from primary pulmonary foci to the meninges and other organs (1). Tuberculous meningitis (TBM) may also develop by hematogenous spread from a primary focus. Microorganisms may reach the central nervous system (CNS) via a hematogenous route from an extracerebral focus and may settle insidiously (2). Once microorganisms enter the CNS, they usually start to multiply in areas where the immune system is weak, such as the meninges or the brain tissue itself (3,4). Three basic conditions must be met for bacilli to reach the meninges via hematogenous route. These conditions are the opening of the blood-cerebrospinal fluid (CSF) barrier due to infections, brain trauma, secondary to certain drugs, sensitivity of the meninges to the bacilli and low immunity of the host (2).

Adult TBM classically begins with subclinical nonspecific symptoms. Fatigue, weakness, abdominal pain, diarrhea, headache, mild fever and personality changes may be present within approximately 2-3 weeks. In stage-I, consciousness is clear and there is no neurologic deficit while nonspecific symptoms are present. In stage-II, the state of consciousness is confused and lethargic. There may be mild to severe focal signs and symptoms such as cranial nerve palsies or hemiparesis. In stage-III, signs and symptoms representing advanced disease such as delirium, stupor, coma, convulsions, multiple cranial nerve palsies and/or severe hemiplegia may be encountered.

This case report aimed to remind readers of the necessity of detailed physical examination with a thorough anamnesis in a patient presenting with atypical neurologic symptoms and the possibility of atypical meningitis in the differential diagnosis.

Written informed consent was obtained from the patient for this case report.

Case Report

A 49-year-old Afghan national coming from abroad male patient presented to the emergency department with complaints of joint pains, fever and malaise. The patient described a mild dry cough. He had no known history of disease or surgery and was a scrap dealer by occupation. On physical examination, oropharynx was hyperemic, respiratory sounds were normal, Glasgow coma scale (GCS):15 and neurologic examination was normal. As no laboratory and radiologic pathologic findings were detected in the tests performed, the patient was evaluated as upper respiratory tract infection, relieved with symptomatic treatment and discharged from the emergency department after medical treatment was arranged.

The patient re-presented to the emergency department the next day with the complaint of inability to urinate. On physical examination, no acute pathologic findings were detected except hyperemic oropharynx and suprapubic tenderness. Current blood parameters and urinalysis are ordered. Abdominal ultrasonography (USG) revealed grade 1 pelvical-axial ectasia which was thought to be secondary to distension in both kidneys and the bladder contained echogenicities compatible with debris and had a globe appearance. Thoracic computed tomography was performed because the patient had a chest radiography from the previous day, and no pathologic finding was detected except for bilateral minimal pleural fluid. While the patient's blood tests of the previous day were within normal limits, WBC: 16000/µL CRP: 115 mg/L was measured in the current blood parameters. No pathology is detected in urinalysis. Consultation is requested from the relevant branches for the patient. The patient is discharged from the emergency department after the relevant specialties make medical recommendations and refer the patient to the outpatient clinic for outpatient follow-up.

Two days after the patient was discharged from the emergency department for the second time, he presented to the emergency department with complaints of weakness and numbness in the legs, spasm in the neck, headache and fever. In his anamnesis, it was known that he had a recent upper respiratory tract infection on physical examination, there was loss of sensation starting from the lower chest and loss of strength and sensation in the legs. There was no sensory and motor deficit in the upper extremities. There were multiple wounds and many linear abrasions on his arms which were thought to be needle marks. With these findings, the possibility of drug abuse was also considered. On neurologic examination, GCS:15, oriented, cooperative and nuchal rigidity was suspicious. Upper extremity deep tendon reflexes were normoactive and hypoesthesia was present below T6 level. Bilateral patella reflexes were not obtained. Guillain-Barre syndrome, tetanus, encephalitis and myelitis were considered as prediagnosis. Extensive blood parameters and radiologic examinations were ordered. Blood parameters included Na (Sodium): 129 mmol/l, Ca (Calcium): 8 mmol/l Alb (Albumin): 28 g/l CRP (C-Reactive Protein): 68 mg/l, CK (Creatine Kinase): 1385 U/l, while no pathologic values were detected in other parameters. In the drug panel obtained from the patient, amphetamine and benzodiazepine levels were positive. Antibody titers for human immunodeficiency virus and hepatitis C virus were negative. The patient undergoes lumbar puncture (LP). CSF albumin value was 198.2 mg/dl, CSF glucose was 39 mg/dl (fingertip blood glucose checked during the LP procedure: 105 mg/dl), CSF microprotein was 491 mg/dl.

The patient was consulted to infectious diseases and transferred to the intensive care unit with a prediagnosis of atypical meningitis. During the intensive care unit follow-up, the patient was diagnosed with tuberculous meningitis and discharged with a cure.

Discussion

Tuberculous meningitis is a severe infection with a very low incidence of 2% in the general population. This infection affects the meninges and can cause severe neurological damage. Central nervous system (CNS) tuberculosis accounts for only 1% of all tuberculosis cases. This indicates that it is a rare condition (6). In recent years, there has been a marked increase in the incidence of tuberculosis worldwide. In addition to this increase, there has also been an increase in extrapulmonary tuberculosis cases. There are many factors contributing to the recent increase in tuberculosis cases. The most important of these are the increase in the number of immunosuppressed people, the development of drug-resistant mycobacterium tuberculosis strains, and the increasing proportion of the elderly population (7).

Tuberculous meningitis presents with atypical symptoms. Patients are often undiagnosed at first presentation and diagnosed at a later presentation. The reasons for delayed diagnosis include non-specific findings and symptoms present at presentation in cases of tuberculous meningitis, TBM being a rare disease and many physicians not having enough experience with this disease, diagnostic tests being difficult, and low awareness of tuberculosis (8). The most important reason is that tuberculous meningitis cases present with atypical symptoms. Generally, the infective values of the patients are either normal or slightly above normal at the first presentation. Abnormal increase in infective values in recurrent presentations directs us to look for a focus of infection.

Risk factors include being immunocompromised and IV drug addiction. IV drug addicts usually do not tell themselves, detailed physical examination and attention should be paid to needle marks on the arms, especially in young patients. Taking a detailed anamnesis and performing a detailed physical examination is very important at this point. Recently, increased migration, the HIV epidemic, organ transplants and nutritional disorders have led to weakening of the immune system and many problems. Each of these problems impairs the immune system (7,8). Atypical meningitis should be kept in mind in patients presenting with atypical neurologic symptoms.

The most serious clinical form of extrapulmonary tuberculosis is tuberculous meningitis. Adult TBM is a very serious disease and leads to high morbidity and mortality rates due to its rapid progression and neurological sequelae. It is an important health problem due to the difficulties in diagnosis and treatment and serious complications. Direct demonstration of CSF asidoresistant bacilli or the production of mycobacterium tuberculosis are the most ideal methods for definitive diagnosis. However, it may not always be possible to make a diagnosis with these methods. Exclusion of other foci of infection and late results of lumbar puncture are among the factors that further delay the diagnosis. Many studies are showing that delay in diagnosis increases the risk of mortality and complications (9,10). Although there are various studies on the relationship between prognosis and the stage of the disease, it has not been fully proven (10).

Conclusion

Patients presenting with atypical neurologic symptoms, as in our case, should be examined in detail, including IV drug use in case of recurrent admissions, and atypical meningitis should be considered in the differential diagnosis.

Ethics Committee Decision: Since it is a case report, ethics committee approval was not required, and written consent was obtained from the patient for the presentation of the case.

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