

Pneumococcal Meningitis as a Stroke Mimic

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Abstract

Meningitis can present with stroke like symptoms. We report a case of a 69 years old lady who presented to A and E 2-hours after an episode of vomiting followed by sudden onset left sided weakness and drowsiness. Her past medical history was significant for surgically excised pituitary adenoma and she was on replacement therapy including steroids. Examination revealed left sided weakness with dysphasia. Initial plan was to decide if the patient was for thrombolysis. An urgent CT scan ruled out haemorrhage. On Re-examination the patient was febrile and there was some degree of neck stiffness. MRI Brain was then performed (DW1 no stroke) which did not show any ischemia. A lumbar puncture was done eventually that showed low glucose, high leukocyte count, and gram staining revealed diplococci in chains.

Clinicians should bear in mind the differential diagnosis of meningitis when there are risk factors and overlapping clinical symptoms.

Keywords: Meningitis; Stroke; Haemorrhage

Introduction

Meningitis is inflammation of the meninges (membranes surrounding the brain and spinal cord). This inflammation can be either from infectious or non-infectious causes. The infectious causes can be bacteria, virus or very rarely fungi. Several strains of bacteria can cause bacterial meningitis. The commonly involved bacterial organisms are *Streptococcus pneumoniae*, *Neisseria meningitidis*, *Haemophilus influenzae* and *Listeria meningitis*. The incidence of meningitis is 2.50 million per year world-wide with a mortality of 0.31 million [1]. The risk factors are malnutrition, absence of immunization, HIV and immunosuppression [1]. If not treated it is rapidly fatal and one fourth of the survivors are left with neurological complications like cognitive impairment, neurological weakness or seizure 3 - 60 months after hospital discharge [2].

Case Report

A 69 years old lady presented to ED 2 hrs after an episode of vomiting followed by sudden onset left sided weakness and drowsiness. Her past medical history was significant for surgically excised pituitary adenoma and she was on replacement therapy including steroids. She had mild flu like symptoms 4 weeks before her presentation. The presentation of her symptoms was very acute with no history of cough, fever, headache, chest pain or vomiting urinary or bowel symptoms. On Examination she was vitally stable with BP 156/68, pulse of 107, Respiratory Rate of 20, and O₂ Sat of 95% on room air. Neurological examination revealed left sided weakness and dysphasia. An urgent CT Brain was requested which ruled out bleed. Initial plan was to decide if the patient was for thrombolysis as her presentation

was within thrombolytic window. During her stay in the A and E she spiked temperature. On re-examination the patient was febrile and there was some degree of neck stiffness. MRI Brain was then performed (DW1 no stroke) which did not show any ischemia. A lumbar puncture was done eventually that showed low glucose, high leukocyte count, and gram staining revealed diplococci in chains. CSF and Blood Culture grew streptococcus pneumonia (Figure 1). The patient was shifted to high dependency unit, started on IV antibiotics according to sensitivity along with stress dose of steroids. There was an excellent clinical response without any residual neurological sequel.

Discussion

The classic triad of presentation of meningitis is fever, neck stiffness and a change in mental status, although in elderly, immunocompromised or in patients with other comorbid conditions the presentation can be variable ranging from lethargy to no fever [3]. In our case report the clinical presentation of the patient was with weakness, drowsiness and dysphasia and it was within the thrombolytic window (4.5 hrs) so the initial plan was to decide whether the patient is for thrombolysis. In one study patients having community-acquired bacterial meningitis, only 44 percent had the clinical triad of fever, neck stiffness, and altered mental status [4], although 95 percent of patients presented with at least two of four symptoms (i.e. headache, fever, stiff neck and altered mental status). The history was very acute and all the classic symptoms of meningitis were not there, so as part of the protocol for managing a stroke patient urgent CT scan was done which ruled out bleed. On re-examination there was some degree of neck stiffness and the patient was febrile. The background history of pituitary surgery also added other differentials like complications post-surgery and seizure activity, so it was decided to proceed with an MRI Brain to rule out early ischemia or any pituitary complication. MRI (Diffusion weighted) did not show any ischemia or any pituitary complication like bleed. In our case there were risk factors for meningitis like immunosuppression due to steroids and previous brain surgery so lumbar puncture was done eventually and that was diagnostic for bacterial meningitis. Lumbar puncture plays an important role in the diagnosis of meningitis. Every patient should have a lumbar puncture unless contraindicated. According to the 2004 Infectious Diseases Society of America (IDSA) guidelines for the management of bacterial meningitis, all patients with suspected bacterial meningitis who have one or more of these risk factors for bacterial meningitis CT scan of the head should be performed before an LP [5], however Imaging should not delay the initiation of treatment. Delay in initiating treatment can result in a significantly increased risk of fatal outcome, with a relative increase in mortality of 13 percent per hour of delay [6].

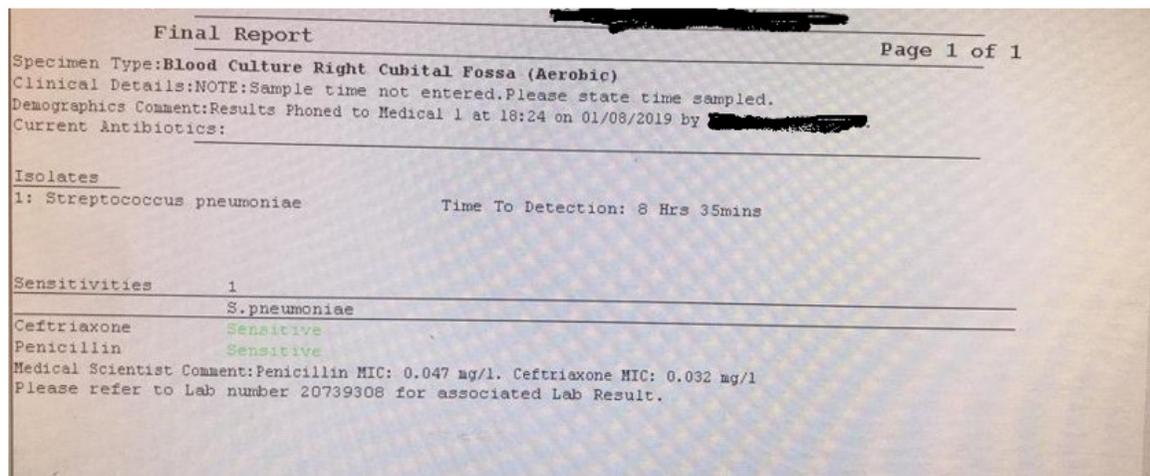


Figure 1: Blood C/S findings.

Conclusion

Due to overlapping clinical presentation the differentiation between a stroke and a conditions presenting like stroke can be difficult. Special attention to past medical history including risk factors for meningitis is important for diagnosing and managing meningitis.

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