NON-SEPTIC LATERAL SINUS THROMBOSIS WITH COCHLEOVESTIBULAR SYMPTOMS AND FACIAL NERVE PALSY: A CASE REPORT

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ABSTRACT

Non-septic thrombosis in lateral venous sinus is a rare clinical entity with varied clinical manifestations. We report the case of a 50-year-old lady who presented with facial nerve palsy, vertigo and hearing loss with right lateral sinus thrombosis who was managed conservatively. There was no focus of infection identified on ear, nose and paranasal sinuses. The blood investigations, including the coagulation profile were normal. On Magnetic Resonance Imaging of brain, non-enhancing hypointense content was identified in the distal one-thirds of right transverse sinus and sigmoid sinus, which was suggestive of venous thrombosis. The patient was treated with Low molecular weight Heparin followed by oral anticoagulant. At six week follow up, the vertigo and facial nerve had completely recovered.

Keywords: Facial paralysis, Lateral venous sinus, Thrombosis, Vertigo

INTRODUCTION

Thrombosis of transverse and sigmoid sinus is an uncommon condition with variable signs and symptoms.[1] Lateral sinus thrombosis constitutes 38% to 86% cases of cerebral venous thrombosis.[1] The etiology of septic lateral sinus thrombosis is infection, especially from the middle ear and mastoid. Non-septic lateral sinus thrombosis may be caused by thrombocytosis, hypercoagulable states, altered cerebral hemodynamics, leukemia, oral contraceptives and smoking.[2,3]

Cerebral venous thrombosis commonly present with headache, vision loss, diplopia, seizures and papilledema. The clinical presentations of septic and aseptic lateral sinus thrombosis are different. Patients with septic lateral sinus thrombosis may additionally present with fever, earache, ear discharge and neck pain.[2] Furthermore, cranial nerve palsies are rare presenting features. This case report highlights non-septic lateral sinus thrombosis with involvement of VII and VIII cranial nerves.

CASE REPORT

A 50-year-old female presented to ENT outpatient department with continuous rotatory vertigo, right hearing loss and right facial weakness for 20 days. The vertigo lasted for days, was associated with nausea and vomiting and right hearing loss but not aggravated on change of head position. She noticed right facial weakness simultaneously. It was acute in onset, gradually progressed with inability to close the right eye, deviation of angle of mouth and difficulty on chewing. She was a known case of Hepatitis B (Chronic stage). There was no history of fever, neck pain, headache, seizures, blurred vision, ear discharge or earache. She was a non-smoker and there was no history of intake of oral contraceptives, any drugs implicated to hypercoagulable state. There was no family history of thromboembolic disorders or malignancy.

On examination, the patient was conscious and well oriented. Grade III horizontal nystagmus was observed with fast component towards left side. Cerebellar tests such as finger-nose test, ataxia, intention tremor and dysdiadochokinesia were negative. Romberg's test was negative. The Head Impulse test was negative. She had right sided grade IV lower motor neuron type facial nerve palsy. The otoscopic examination of bilateral ears were normal. Rinne tests were positive on both sides with Weber lateralization towards left ear.

Pure Tone Audiometry revealed right sided 55 dB moderate sensorineural hearing loss and left sided 38 dB mild sensorineural hearing loss. The complete blood counts were normal, random blood sugar, blood urea and serum creatinine were normal. The liver function tests and lipid profile were normal. The Prothrombin time was 15.2 seconds, International Normalized Ratio (INR) was 1.14, the Bleeding time was 2 minutes, and the Clotting time was 7 minutes. The High-Resolution Computed Tomography of temporal

bone was normal. Magnetic Resonance Imaging (MRI) of brain and Magnetic Resonance Venography (MRV) showed non-enhancing hypointense content in the distal one-thirds of right transverse sinus and sigmoid sinus (Figure 1, 2).

The patient was admitted for complete work-up of the case and she was initially managed with vestibular sedatives, steroids, eye care and facial physiotherapy. After MRI and MRV, the patient was consulted by Neurosurgeon and initiated on Enoxaparin (low molecular weight heparin) 60 mg 12 hourly (subcuticular injection) for 10 days. Then it was switched to Tab. Dabigatran 150 mg 12 hourly for six months. The patient was discharged with a total hospital stay of 18 days. On follow-up at six weeks, the patient's vertigo had resolved with complete recovery of facial nerve. However, the hearing loss was static. Further follow-up MRI was planned at six months by the Neurosurgery team. Written informed consent was taken from the patient for publication of this case report and clinical images.

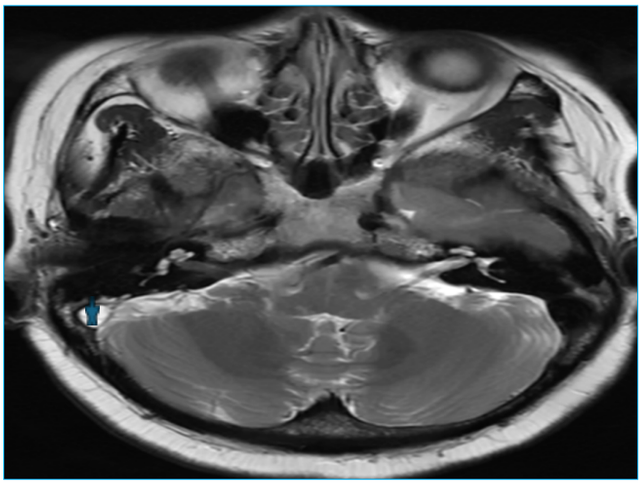


Figure 1. T2 weighted MRI brain showing absence of normal flow void and high signal intensity in right sigmoid sinus (depicted by star sign)



Figure 2. MR Venography showing thrombosis of right (R) transverse and sigmoid sinuses.

DISCUSSION

Cerebral venous thrombosis is a rare entity which has gained recognition nowadays due to better use of MRI and MRV.[4] The most common sites of dural venous sinus thrombosis are the sagittal sinus and the lateral sinus. The isolated involvement of lateral sinus is observed in only 10% cases.[1]

The clinical presentations of non-septic lateral sinus thrombosis are headache, blurred vision, seizures, altered mental status, papilledema or cranial nerve palsies. However, septic lateral sinus thrombosis presents with fever, neck pain, anemia, earache, headache, papilledema, ear discharge, hearing loss or postauricular swelling.[2] In the current case, the diagnosis of non-septic lateral sinus thrombosis was formed due to absence of source of infection from ear, nose and paranasal sinuses.

Non-septic lateral sinus thrombosis is common in females than males, as seen in the current case.[3] The involvement of VII and VIII cranial nerves are atypical presentations in the current patient. Cranial nerve palsies could be due to intracranial hypertension.[4,5] Kuehnen et al predicted that venous congestion leading to edema of cranial nerves might cause cranial nerve palsies.[6] The sensorineural hearing loss in the opposite ear in the patient might be age-related hearing loss.

The treatment of septic and aseptic lateral sinus thrombosis is different. Septic lateral sinus thrombosis is usually secondary to cholesteatoma or granulations secondary to infection. Therefore, surgery along with antibiotics form their mainstay of treatment. However, in aseptic lateral sinus thrombosis, anticoagulant therapy plays an important role to prevent thromboembolic phenomenon.[2]

The prognosis of lateral sinus thrombosis is good, with 92% recovery at one year. An important cause of mortality in such case is pulmonary embolism; therefore, clinicians should be vigilant despite initiating Heparin.[1]

CONCLUSION

The diagnosis of cerebral venous thrombosis should be suspected in patients with facial palsy and cochleovestibular symptoms.

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