Letter to the Editor

Mastoiditis, subdural empyema and cortical venous thrombosis

Madam, Thrombosis of the cerebral veins is a relatively uncommon but potentially a life-threatening condition, accounting for 1-2% of strokes in young adults.[1,2] Infective causes have declined and are responsible for only 8% of cases in recent reports.[2] A 35 year old gentleman presented with history of ear discharge of two months duration, fever and headache for the last one week, altered sensorium and right sided hemiplegia for last three days. He was treated for meningitis at a peripheral hospital and once he developed hemiplegia, a CT scan was performed. CT scan showed left fronto-parietal subdural empyema and left parietal venous infarct with diffuse cerebral oedema, mass effect and midline shift (Figure 1). He was continued on broad spectrum antibiotics but did not respond and continued to deteriorate. The patient required elective ventilation but did not improve and expired. Cerebral venous thrombosis (CVT) is an uncommon condition which over the past 5 to 10 years has been diagnosed more frequently due to greater awareness and the availability of better non-invasive diagnostic techniques.[3] The infective causes of cortical venous thrombosis include abscess, subdural empyema, meningitis, sinusitis, suppurative otitis media, septicaemia and endocarditis.[4] Out of these, mastoidits is still the most common risk factor.[5] Investigations should focus on establishing the diagnosis and searching for underlying causes.[6] CT scan is the initial modality of choice and the diagnosis may be made or suggested by CT before and after intravenous contrast medium injection.[3,6] On CT, infarctions in a non-arterial distribution in the white matter and/or cortical white matter junction, often associated with haemorrhage, should suggest the possible diagnosis of CVT.[6] Magnetic resonance imaging (MRI) combined with magnetic resonance venography (MRV) have largely replaced invasive cerebral

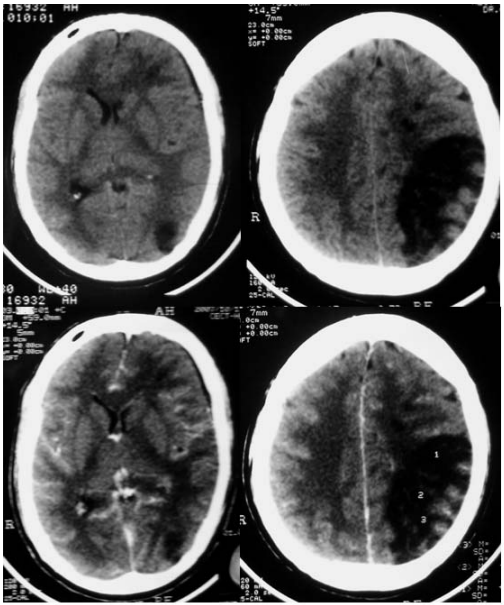

Figure-1. CT scan plain (upper images) and contrast (lower images) showing this subdural empyema left fronto-parietal region and large venous infarct involving left parietal lobe with gyral enhancement. Also note the associated oedema and mass effect.

angiography and conventional computed tomography (CT).[3,6] CT will, however, often remain the first imaging modality to be used simply due to availability, comparatively shorter scan times, lower cost and also to exclude other conditions such as intracerebral haemorrhage or abscess.[3,6] CSF analysis may help to rule out infective process i.e. meningitis.[2] The prognosis of cerebral venous sinus thrombosis is generally favourable. A high index of clinical suspicion is needed to diagnose this uncommon condition so that appropriate treatment can be initiated.[3] Reported death rates range between 5% and 30%, but one study of 49 patients showed a 48% mortality rate in untreated patients.[1,2] Mastoidits still remains a big challenge in underprivileged areas and presents in an advanced stage with intracranial complications. This is further compounded by limited resources and delay in seeking medical advice. Treating physicians in such circumstances should have a high index of suspicion about these complications and low threshold for investigations as the early diagnosis and treatment are crucial.[1]

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References

1. van Gijn J. Cerebral venous thrombosis: pathogenesis, presentation and prognosis. J R Soc Med 2002;93:230-3
2. Ameri A, Bousser MG. Cerebral venous thrombosis. Neurol Clin 1992;10:87-111.
3. Allroggen H, Abbott RJ. Cerebral venous sinus thrombosis. Postgrad Med J 2000;76:12-5.
4. Niclot P, Bousser MG. Cerebral Venous Thrombosis. Curr Treat Options Neurol 2000, 2:343-52.
5. Carvalho KS, Bodensteiner JB, Connolly PJ, Garg BP. Cerebral venous thrombosis in children. J Child Neurol 2001;16:574-80.
6. Karthikeyan D, Vijay S, Kumar T, Kanth L. Cerebral venous thrombosis-spectrum of CT findings. Indian J Radiol Imaging 2004;14:129-37.