

Cerebral venous sinus thrombosis: review of cases in a single centre in Malaysia

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ABSTRACT

Introduction: Cerebral venous sinus thrombosis (CVST) is a potentially fatal neurological condition. However, due to the non-specific clinical and radiological features of CVST, it can sometimes result in a delay in the diagnosis and subsequent management. The aim of this study was to evaluate the demography, risk factors and one-year outcome of CVST patients treated in Hospital Universiti Sains Malaysia.

Methods: In this retrospective study, we reviewed the cases diagnosed with CVST admitted to our centre from January 2011 until November 2015.

Results: A total of 15 patients were included in this review. The patterns of imaging findings as well as risk factors for CVST is discussed with a review of the literature and current management practices. One year followed-up showed full recovery (Glasgow Outcome Scale (GOS) of 5) in 10 cases (66.7%), whereas 4 cases (26.7%) with GOS of 4 (three cases with neurological deficits, and 1 case with mild symptom). There was one case of mortality in this study secondary to sepsis during hospitalisation. The presenting symptoms were mainly headache, focal neurology deficits, seizure and altered sensorium. Risk factors identified were oral contraceptive pills usage, chronic sinusitis or ear infections, and obesity. Initial computed tomography (CT) scan showed various findings and haemorrhagic infarct was one of the common findings. Magnetic resonance imaging (MRI) and magnetic resonance venography (MRV) revealed majority of the patients had occlusion at two or more venous sinus sites. No patients had new or recurrent intracranial haemorrhage following initiation of anticoagulation therapy.

Conclusion: Thus it is considerable safe to start anticoagulation therapy in CVST patients including those with intracranial haemorrhage. We propose further neuroimaging to avoid missed diagnosis of CVST in patient presented with recent onset headache and CT evidence of unusual cerebral infarction.

KEY WORDS:

Sinus thrombosis, stroke, anticoagulation, intracerebral haemorrhage

INTRODUCTION

Cerebral venous sinus thrombosis (CVST) is a neurological condition involving thrombosis of one or more of the cerebral

veins (both cortical and deep venous systems) as well as the dural sinuses. It accounts for 0.5 to 1% of all strokes.^{1,2} Due to the non-specific clinical presentations, the diagnosis of CVST can sometimes be difficult. The initial computed tomography (CT) scan may not show any conclusive finding, thus in any suspicion situation, a further neuroimaging must be carried out immediately to confirm the diagnosis and to prevent the delay in the initiation of anticoagulant therapy.² Besides, CVST might often be referred to the neurosurgical team for intervention due to the occurrence of intracranial haemorrhage or mass effect, or for the opinion on the safety to start anticoagulant therapy. In view of this, neurosurgeons need to be aware of the varied manifestations and radiological features of CVST as well as its complications. The aim of this study was to evaluate the demography, risk factors and one-year outcome of CVST patients treated in our centre.

MATERIALS AND METHODS

This was a retrospective study conducted in Hospital Universiti Sains Malaysia (HUSM) and data collection was in accordance with the Declaration of Helsinki for human research. Medical records of all consecutive patients aged above 12-year-old who was admitted to the Department of Neurosciences, HUSM from January 2011 to November 2015 were reviewed. All patients included in the study must have had neuroimaging done to confirm the diagnosis of Cerebral Venous Sinus Thrombosis (CVST) and been admitted into HUSM for further management.

The inclusion criteria were: a) age above 12 years old, b) diagnosis confirmed with neuroimaging (either CT venography or magnetic resonance venography), c) admitted and received treatment in HUSM. Whereas the exclusion criteria were: radiologically demonstrated infarction in arterial territory, b) hypertensive intracranial haemorrhage and c) on antiplatelet or anticoagulant therapy for other medical conditions.

Patient interventions: The routine practice in managing CVST patients in HUSM was, after receiving the referral from the Emergency Unit, the patients would be reviewed by the medical officers from the Department of Neurosciences, consisting of Neurology and Neurosurgery Units. Once the diagnosis was confirmed with neuroimaging, the patients are admitted to Neuro High Dependency Unit. The consultant neurologist would review the patients before the

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