International Journal of Basic and Applied Medical Sciences ISSN: 2277-2103 (Online)
An Online International Journal Available at http://www.cibtech.org/jms.htm
2012 Vol.2 (3) September-December, pp.272-274/Sardana et al.

Case Report

SUBARACHNOID HEMORRHAGE: UNUSUAL MANIFESTATION OF CEREBRAL VENOUS SINUS THROMBOSIS

***V Sardana[1], D Maheshwari[1] and R K Aseri[2]**
[1]Department of Neurology, Govt. Medical College, Kota
[2]Department of Anaesthesia, Govt. Medical College, Kota
**Author for Correspondence*

ABSTRACT
Cerebral venous thrombosis (CVT) has varied clinical and imaging manifestations that may mimic many neurological disorders and lead to frequent misdiagnoses or delay in diagnosis. The most frequent symptoms and signs are headache, vomiting, seizures, focal deficits, and papilledema. Subarachnoid hemorrhage (SAH) is a rare manifestation of CVT. We report a patient who presented with headache, generalized seizures and right lower limb monoparesis. Computerised tomography (CT) head showed cortical SAH and Magnetic Resonance (MR) venography revealed superior sagittal sinus thrombosis. The importance of cerebral venous study before going for digital substraction angiography (DSA) in spontaneous cortical SAH is emphasised.

Key Words: *Cerebral Venous Thrombosis (CVT), Subarachnoid Haemorrhage (SAH)*

INTRODUCTION
Cerebral venous thrombosis presents with a variety of neurological manifestations. Common clinical features include headache, focal or generalized seizures, focal neurological deficits, and intracranial hypertension (Sharma *et al.,* 2010a). Acute subarachnoid hemorrhage (SAH) is amongst rare presentations of cerebral venous thrombosis (CVT). Acute spontaneous SAH usually indicates either ruptured aneurysm or AVM but few case reports have highlighted it as a manifestation of CVT (Panda *et al.,* 2010; Kato *et al.,* 2010). We report a case of CVT who presented with SAH.

CASES
A 27-year-old nonhypertensive male presented with severe generalized throbbing headache of 8 days duration with occasional vomiting. One day prior to admission he had 2 generalised tonic clonic se izures (GTCS) followed by right-sided lower limb weakness. On examination, he was afebrile with pulse 88 per minute, blood pressure 110/ 70 mm of mercury. He was slightly drowsy, fundus examination was normal. Right lower limb power was grade 3/5 and he had extensor planter response on the right side. There were no meningeal signs. Rest of the neurological and systemic examination was normal.
Investgation showed normal haematological and biochemical parameters. Liver function tests and thyroid functions were normal (T3-103ng/dl, T4-8.4µg/dl and TSH-3.2µIU/ml). Evaluation for procoagulant state showed prothrombin time 15 seconds (control 16 seconds), activated partial thromboplastin time 28 seconds (25-39 seconds), serum homocystein 10.3µmol/L (4.4-10.83µmol/L) , protein C 98%(70-140%) and S 92%(70-140%), antithrombin III 82%(70-130%). Antiphospholopid antibodies IgG-12 units, IgM-5 units (below 15 units) were negative, so was HIV elisa.
Noncontrast computed tomogram (figure 1) and Magnetic Resonance Imaging (MRI) revealed SAH in high parietal cortical sulci. MR angiogram did not show aneurysm or any other vascular abnormality (figure 2) but MR venogram brain revealed proximal part of superior sagittal sinus thrombosis (figure 3).
The patient was given low-molecular-weight heparin (Enoxaparin 0.4 ml subcutaneously) for 7 days, later shifted to oral Acecoumeron, 2 mg per day maintaining the international normalized ratio between 2 and 2.5. Short term intravenous mannitol was given along with oral naproxen 250 mg twice a day. His

sensorium normalised within few hours, and right lower limb power improved by grade 1 after 7 days. He was discharged on 9th day on oral anticoagulant.

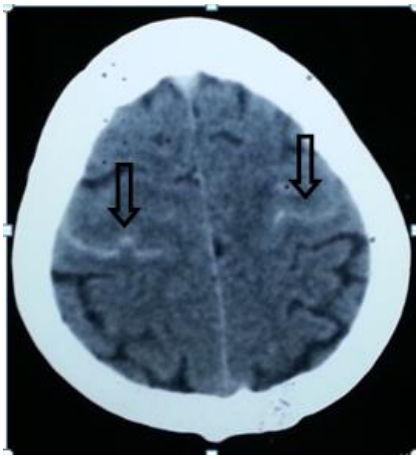

Figure 1: NCCT head showing SAH in bilateral high parietal cortical sulci.

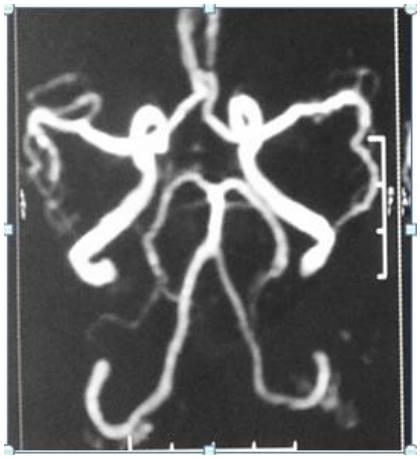

Figure 2: Normal MR Angiogram

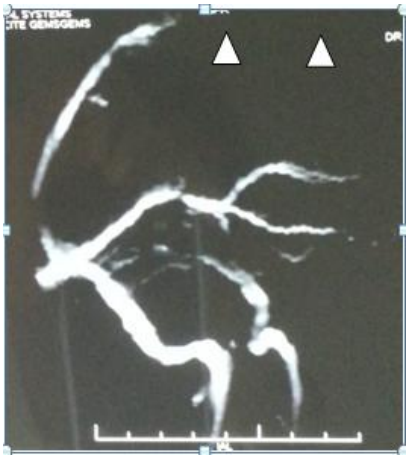

Figure 3: MR Venogram brain showing thrombosis of proximal half of superior sagittal sinus.

DISCUSSION

CVT is a common disorder presenting with protean manifestations. The most frequent symptoms and signs are headache (95%), & focal seizures with or without secondary generalization (47%), focal deficits including unilateral or bilateral paresis (43%), papilledema (41%), isolated intracranial hypertension (21%) and rarely transient ischemic attack (Sharma *et al.,* 2010a; Kimber *et al.,* 2002).

Rare atypical manifestations have been described with CVT including thunderclap headache (Mortimer *et al.,* 2013), attacks of migraine with aura, isolated psychiatric disturbances, pulsatile tinnitus, isolated or multiple cranial nerve involvement, presenting like intracranial space occupying lesion with progressive symptoms and signs and occasionally as SAH or transient ischemic attack (Sharma *et al.,* 2010a).

There are few case reports of SAH as rare manifestation of CVT. Normally CVT is not considered in differential diagnosis in such cases. Our patient presented with cortical SAH without basal cistern involvement. The exact cause of SAH associated with CVT is unknown but various theories have been postulated. Dural sinus thrombosis with secondary venous hypertension may lead to SAH into the subarachnoid space due to the rupture of fragile, thin-walled cortical veins (Sharma *et al.,* 2010 b).

This case emphasises to have high degree of suspicion for CVT in a case of non traumatic cortical SAH without basal cistern involvement. Diagnosing CVT early not only has theurapeutic implications but also costly and invasive investagations like DSA can be avoided in centres with limited resources. We suggest such patient should undergo MR venogram before DSA.

Summary

A young male presenting with headache, GTCS and right limb monoparesis was found to have cortical SAH on CT head and MRI brain. MR venography showed superior sagittal sinus thrombosis with normal MR angiography. SAH is a rare manifestation of CVT and should be considered in patients presenting with cortical SAH without involvement of basal cisterns.

REFERENCES

Kato Y, Takeda H, Furuya D, Nagoya H, Deguchi I, Fukuoka T and **Tanahashi N (2010).** Subarachnoid hemorrhage as the initial presentation of cerebral venous thrombosis. *Internal Medicine (Tokyo, Japan)* **49**(5) 467-470.

Kimber J (2002). Cerebral venous sinus thrombosis. *Queensland Journal of Medicine* **95**(3) 137-142.
Mortimer AM, Bradley MD, Stoodley NG and **Renowden SA (2013).** Thunderclap headache: Diagnostic considerations and neuroimaging features. *Clinical Radiology* **68**(3) 101-113.
Panda S, Prashantha DK, Shankar SR and **Nagaraja D. (2010)**. Localized convexity subarachnoid haemorrhage: a sign of early cerebral venous sinus thrombosis. *European Journal of Neurology* **17**(10) 1249-1258.
Sharma B, Satija V, Dubey P, Panagariya A (2010 a). Subarachnoid hemorrhage with transient ischemic attack: Another masquerader in cerebral venous thrombosis. *Indian Journal of Medical science* **64**(2) 85-89.
Sharma S, Sharma N, Yeolekar ME (2010 b). Acute subarachnoid hemorrhage as initial presentation of dural sinus thrombosis. *Journal of Neurosciences in Rural Practice* **1**(1) 23-25.