

Arjen J. C. Slooter  
Lino M. P. Ramos  
L. Jaap Kappelle

## Migraine-like headache as the presenting symptom of cerebral venous sinus thrombosis

Received: 16 July 2001  
Received in revised form: 10 October 2001  
Accepted: 23 October 2001

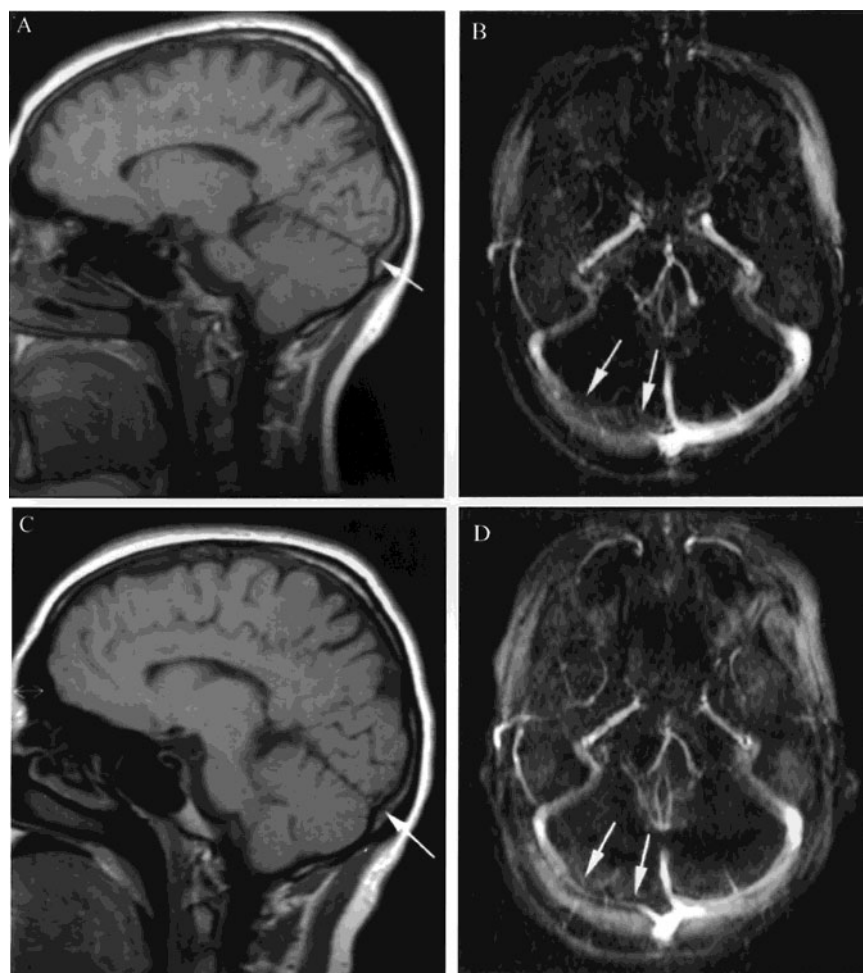
Sirs: Cerebral venous sinus thrombosis (CVST) is a serious condition resulting in death in approximately 10% of patients [1]. However, CVST can be difficult to recognise, as it can present with a wide variety of symptoms and signs. We describe here a case of CVST with migraine-like headache.

A 24-year-old woman presented with a first-ever episode that started with paleness, palpitations and a feeling of exhaustion, nausea and thirst. After an hour, she gradually experienced tingling and numb feelings in the left side of the body, after 30 minutes gradually succeeded by left-sided weakness that also lasted half an hour. Immediately thereafter, she had sharp, pulsatile hemicranial pain on the right side. Observers during this episode described her as less alert, although she was able to answer questions. After about four hours the headache disappeared, and was followed by fatigue, a dry mouth and frequent micturition. Apart from tension type headaches, there was no previous medical history, and she did not use drugs. Physical examination at that time was normal. We supposed that she had had a first attack of migraine with aura, and sent her home without ancillary investigations. The following day, the patient could resume her

work as a secretary without residual symptoms. However, during the next 5 days she suffered from 3 identical, recurrent spells. The rapid recurrences in the absence of earlier migraine attacks made us suspect another disorder. We detected cerebral venous sinus thrombosis (CVST) in the right transverse sinus using MRI-MR Venography of the brain that was performed 6 days after the initial symptoms. This did not reveal abnormalities in the parenchyma, but showed a thrombus in the right

transverse sinus. MR Venography (axial 2D phase contrast angiography) confirmed the MRI finding, and showed no flow in this sinus (Fig.).

As precipitating factors we found a recent CMV infection (both IgM and IgG anti-CMV antibodies were present in serum), smoking, the use of oral contraceptives and a partial deficiency for protein C and protein S (68% and 54%, respectively). Liver enzymes and fibrinogen level were only slightly increased, and renal and



**Fig.** MRI-MR Venography demonstrating venous thrombosis in the right transverse sinus. **(A)** Sagittal conventional spin-echo imaging showing absence of flow void on T1 weighted image. Arrow: thrombosis in right transverse sinus. **(B)** 2D Phase Contrast Angiography (2D PCA, MR Venography) showing normal flow in left transverse sinus and no flow in right transverse sinus (arrows). **(C, D)** Seven months later: re-canalisation in right transverse sinus (arrows), using the same techniques.

thyroid tests were normal. Ultrasonography of the abdomen and chest radiographs were also normal. The ENT surgeon found no evidence for otitis media or mastoiditis. Treatment was started with low-molecular-weight heparin, followed by 3 months of oral anticoagulants [3]. She stopped smoking and the use of oral contraceptives, and did not suffer from these episodes during the following two years. MR Venography 7 months after her presentation showed recanalisation of the right transverse sinus (Fig.).

Well-known clinical features of CVST include headache, papilloedema, focal neurological deficits, seizures and an altered state of consciousness [1]. Headache is in all CVST series the most common symptom, present in about 80 % of cases [2]. Its character is mostly diffuse, progressive, and permanent, although thunderclap headache has also been described [2]. Spells of throbbing unilateral headache mimicking migraine have not been described as symptoms of CVST, although visual phenomena resembling migraine aura have been reported before [4]. One

of these two patients had also seizures, the other had intermittent visual blurring during 6 weeks and tenderness of the scalp [4]. The rapid recurrences of the attacks in our patient do however not correspond with migraine, and led us to perform further investigations including MRI-MR Venography. The combination of thrombus on MR Imaging and absence of flow on MR Venography may be considered the current diagnostic 'gold standard' [1]. Invasive procedures to measure intracranial pressure including lumbar punctures are therefore not always needed. It could be hypothesised that the intermittent presentation in our patient may be epileptic in origin. However, this seems unlikely because of the slow spread of symptoms. Another explanation for the episodic character may be transient cerebral ischaemia in combination with fluctuating intracranial pressure, caused by venous congestion. This case report illustrates that in patients with rapidly recurrent, migraine-like attacks occurring de novo, a diagnosis of CVST should be considered.

## References

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A. J. C. Slooter (✉) · L. J. Kappelle  
Department of Neurology  
University Medical Centre  
Room G03.228  
PO Box 85500  
3508 GA Utrecht, The Netherlands  
Tel.: +31-30/2 50 91 11  
Fax: +31-30/2 54 21 00  
E-Mail: aslooter@hotmail.com

L. M. P. Ramos  
Department of Radiology  
University Medical Centre  
Utrecht, The Netherlands