Yeditepe Medical Journal 2011;5(18): 409-412

ISOLATED VENOUS INFARCTION OF LEFT CAUDATE NUCLEUS DUE TO SUPERIOR SAGITTAL AND SINUS RECTUS THROMBOSIS

Case Report

SOL KAUDAT NUKLEUSUN SUPERİOR SAGİTTAL SİNUS VE SİNUS REKTUS TROMBOZUNA BAĞLI GELİŞEN İZOLE VENÖZ ENFARKTI

Corresponding Author
Uz. Dr. Umit Derundere

Department of Radiology
Gaziantep Av. Cengiz Gokcek State Hospital
e-mail: *umitderundere@yahoo.com*

ABSTRACT

We herein describe a 49-year-old woman with a history of severe headache for two weeks and vomitting which in turn was approved to be secondary to unilateral venous caudate nucleus infarction. Conventional and contrast enhanced magnetic resonance imaging (MRI) sequences besides Magnetic Resonance Venography (MRV) confirmed the thrombosis of sinus rectus and superior sagittal sinuses. Diffusion-weighted MRI revealed mild restricted diffusion. To the best of our knowledge it is the first case of unilateral venous infarction of the caudate nucleus described in the literature.

Key words: Cerebral venous sinus thrombosis; caudate nucleus infarction; Magnetic Resonance Venography.

ÖZET

İki haftadır ciddi baş ağrısı ve bulantı şikayeti bulunan 49 yaşında bayan hastada tek taraflı kaudat nükleus venöz enfarktı tespit edilmesi nedeniyle bu olguyu sunmayı hedefledik. Konvansiyonel ve kontrastlı Manyetik Rezonans Görüntüleme (MRG) ve ardından yapılan Manyetik Rezonans Venografi (MRV) ile sinüs rektus ve süperior sagittal sinüs trombozu saptandı. Diffüzyon ağırlıklı MRG ile hafif difüzyon kısıtlanması tespit edildi. Bizim bilgilerimize göre olgu; sinüs trombozuna bağlı kaudat nükleusun tek taraflı venöz enfarktı olması bakımından tek olgudur.

INTRODUCTION

Cerebral venous thrombosis is a relatively rare condition but potentially has morbidity and/or mortality. The clinical presantation of sinus thrombosis is not spesific, and patients may have a wide spectrum of signs and symptoms mimicking conditions such as arterial stroke, brain tumors, encephalitis and hemorrhage (1,2). Also affected areas in the brain is usually not similar. In this

circumstance diagnosis is very important. In the recent years due to evolving neuroimaging; magnetic resonance imaging (MRI) also MR venography (MRV) enables to detect the sinus thrombosis and related pathologies such as venous infarction.

We herein report a case of sinus thrombosis which affected isolated left caudate nucleus.

CASE REPORT

A 49-year-old woman had a history of severe headache for two weeks. She also vomited a few times. She had not a prothrombotic risk factor in the history. The clinical prediagnosis was not spesific except a history of headache. There was no abnormality on neurological and physical examination and laboratory data.

Then MRI of the cranium was performed. Left caudate nucleus was totally enlarged and showed high signal on T2-weighted and FLAIR sequences. DWI revealed mild restricted diffusion. Left lateral ventricule was slightly compressed due to edema. Major intracranial arteries were patent, however axial T1-weighted MR images showed loss of normal signal void in the superior sagittal sinus and sinus rectus. Empty delta sign was seen on gadolunium-enhanced T1-weighted images. MRV confirmed the sinus thrombosis. On the next week following medical treatment the symptoms resolved.

DISCUSSION

Although cerebral venous thrombosis is an uncommon cause of stroke it is being increasingly recognized (3-6). A prothrombotic risk factor is identified in the majority of the patients. In most instances it is seen in women in the post-partum period and those on oral contraceptives. Besides in %10-30 cases thrombosis occurs spontaneously. Superior sagittal, transverse and sigmoid sinuses are most affected (3). Imaging findings of cerebral venous thrombosis can be classified as direct, when there is visualisation of the cortical or dural sinus thrombus, or indirect, when there are ischaemic cerebral changes related to venous outflow disturbances (5). MRI has improved our ability to diagnose this condition however the variability of radiological and clinical presentation remains a challenge. MRI in combination with MRV is the most sensitive noninvasive diagnosticand follow-up technique (4). Despite advanced imaging modalities ; cerebral venous thrombosis is a difficult diagnosis to make when it is not clinically suspected (7). The loss of the normal flow void on spin echo T1 image is a sensitive parameter. Thrombus on MRV is seen as filling defect in the sinus. Focal parenchymal changes occur in approximately 50% of cases and are due to oedema and infarction, with or without haemorrhage. There is not a venous terriotority like arterial. So that venous infarction due to sinus thrombosis can affect any different areas in the brain. To our knowledge, we could not find another case involving isolated caudate nucleus due to venous infarction in the literature. We present isolated unilateral caudate nucleus infarction due to sinus thrombosis without predisposing condition.

REFERENCES

1) Ameri A, Bousser MG. Cerebral venous thrombosis. Neurol Clin 10: 87-111, 1992.

2)Visrutaratna P, Oranratanachai K, Likasitwattanakul S. Clinics in diagnostic imaging. Singapore Med J 2005; 46(5):238.

3)Carvalho KS, Garg BP. Cerebral venous thrombosis and venous malformations in children. Neurol Clin 2002; 20:1061-77.

4)Lee SK, terBrugge KG. Cerebral venous thrombosis in adults: the role of imaging evaluation and management. Neuroimaging Clin N Am 2003; 13:139-52.

5)Ozsvath RR, Casey SO, Lustrin ES, Alberico RA, Hassankhani H, Patel M. Cerebral venography: comparison of CT and MR projection venography. Am J Roentgenol 1997; 169:1699-707.

6)Ferro et al. Prognosis of cerebral veins and dural sinus thrombosis. Stroke 2004;36;664-670.

7)Phua Hwee Tanh et al. Superior Sagittal Sinus Thrombosis. Ann Acad Med Singapore 2008;37:397-401.

FIGURE LEGENDS

Figure 1-5

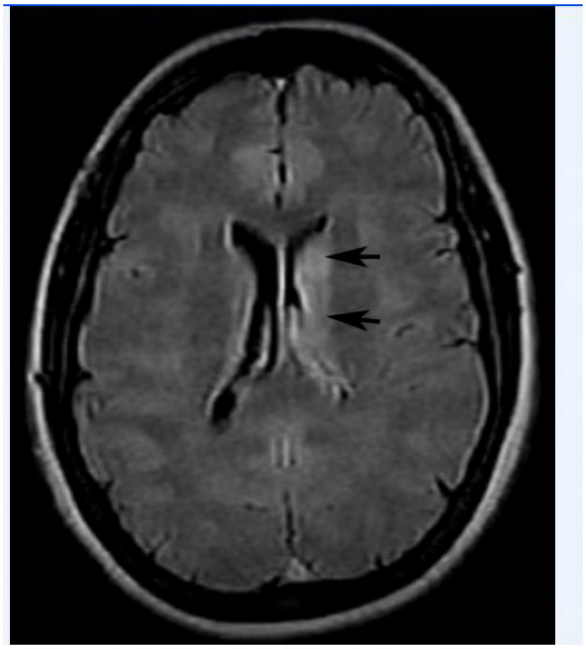

Figure.1 *On axial T2W FLAIR sequence; hyperintensity of left caudate nucleus (black arrows) due to ischemia and compression of left lateral ventricule.*

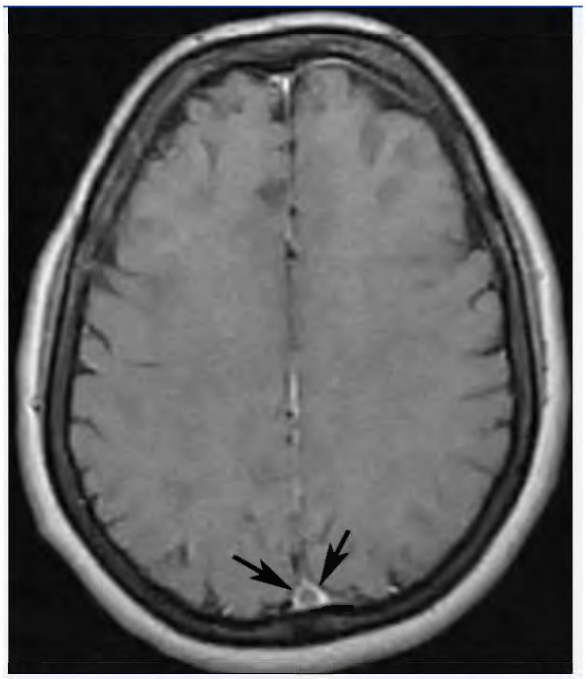

Figure.2 *Enhanced axial T1W image shows filling defect (black arrows) of superior sagittal sinus called delta sign.*

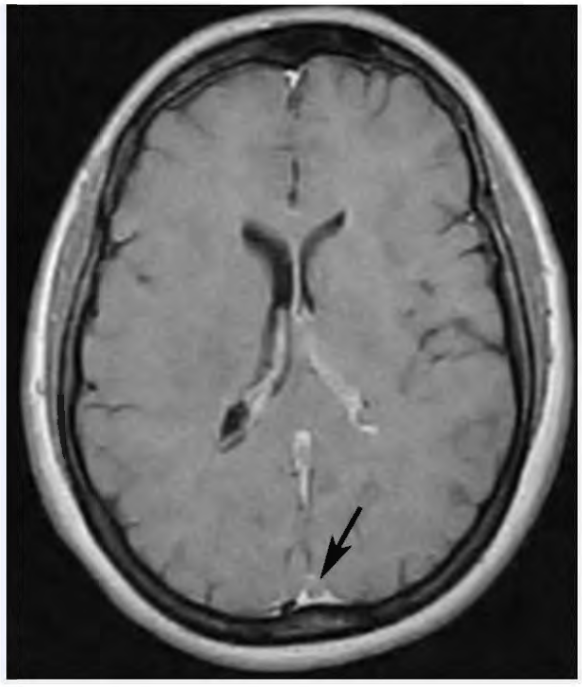

Figure.3 *Filling defect (black arrows) of sinus rectus on enhanced axial slice.*

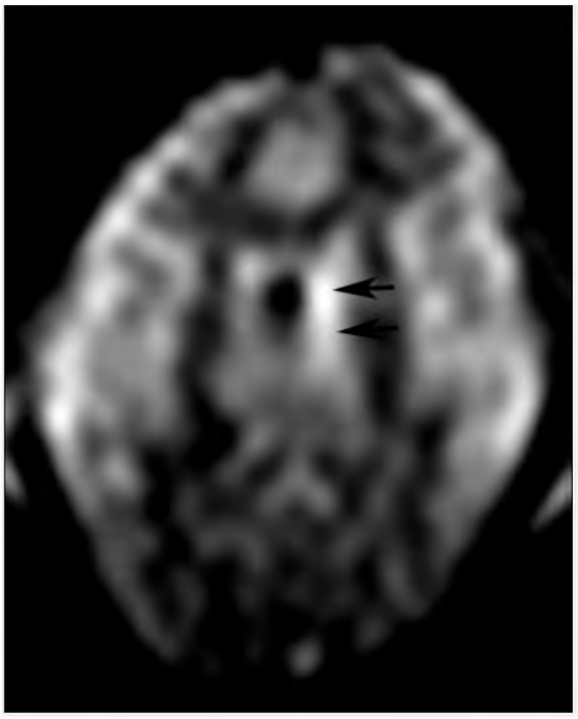

Figure.4 *Diffusion MRI revealed mild restriction of left caudate nucleus (black arrows)*

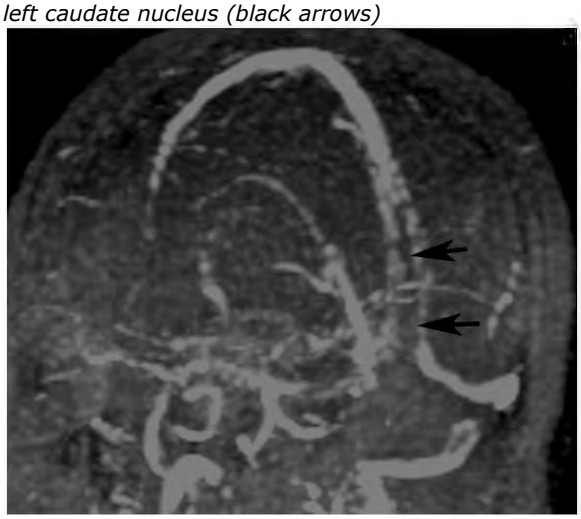

Figure.5.*Sagittal 2D time-of-flight (TOF) MR Venography shows no flow signal in superior sagittal (black arrows) and rectus sinuses.*