Case Report

Indian Journal of Obstetrics and Gynecology
Volume 9 Number 2, April – June 2021
DOI: http://dx.doi.org/10.21088/ijog.2321.1636.9221.10

Rare Case Report of Acute Infract in Left Caudate Nucleus: A Post-Partum Catastrophe

Satish Shetty[1], Suchitra Somkuwar[2]

How to cite this article:
Satish Shetty, Suchitra Somkuwar. /Rare Case Report of Acute Infract In Left Caudate Nucleus: A Post-Partum Catastrophe. /Indian J Obstet Gynecol. 2021;9(2):57-60.

Authors Affiliation: [1]Consultant, [2]3rd Year Post Graduate, Department of Obstetrics and Gynecology, District Hospital, Dharwad, Karnataka 580001, India.

Corresponding Author: Suchitra Somkuwar, 3rd Year Post Graduate, Department of Obstetrics and Gynecology, District Hospital Dharwad, Karnataka 580001, India.

Email: suchittras614@gmail.com

Abstract

The caudate nucleus is important in the modulation of motor functions and may influence cognitive and mental functions. However, cases of cognitive and behavioral disorders caused by caudate stroke are rare in practice. We report a case of 26 year-old female patient who presented with abrupt onset of cognitive and behavioural dysfunctions in post partum period on 4th day of elective caesarean section. Her prominent symptoms include fever, abnormal behaviour in form screaming, not identifying family members and not feeding baby. Computed tomography revealed no significant abnormality and magnetic resonance imaging of the brain revealed an acute infarction in the head of the left caudate nucleus in post portum period.

Keywords: Cerebral venous thrombosis; Caudate nucleus; Reversible cerebral vasoconstriction syndrome.

Introduction

It is generally believed that mental and behavioural disorders can be caused by acquired frontal and temporal lesions. The caudate nucleus is important in the modulation of motor functions. However, the eventual effects of damage to the caudate nucleus on cognitive and behavioural abnormalities are not well known. There is a growing body of evidence indicating that the caudate nucleus plays a crucial role in the control of cognitive and behavioral processes. Reversible cerebral vasoconstriction syndrome (RCVS) is an under-recognized condition characterized by the association with or without additional neurological symptoms, and multifocal constriction of cerebral arteries, that resolve spontaneously within 1–3 months.[1-3] More than half of the cases of RCVS occur in special circumstances, such as exposure to post-partum or vasoactive substances. The pathology of this peculiar cerebral angiopathy is still obscure.[4] Cerebral venous thrombosis (CVT) is an infrequent disorder characterized by a wide clinical spectrum, which includes a headache in the vast majority of cases.[5] No obvious physiological link has so far been established between these two forms of angiopathy. We report a case of post-partum stroke where CVT was followed in quick succession by RCVS and acute left caudate lobe infract representing a rare clinical situation.

Case Report

A 26-year-old female in her immediate post-partum period developed fever, irrevealant talk, abnormal behaviour in form of screaming, not identifying family members, decreased sleep and not ask for baby and breast feeding started on 4th day after elective caesarean section. On examination patient was conscious with irritable agitating behaviour disoriented with time, place and person. She had irrelevant talk, screaming not cooeperative. Her vitals were stable SPO2- 97%, pulse rate-88 bpm, bloodpressure-110/70 mm Hg. Bilateral vesicular breathing present S1 and S2 heard. No added sounds heard. Per abdomen soft, wound healthy, no organomegaly, bowel sounds were present. On per vaginal examination no active bleeding present. Lochia healthy. Her physician opinion done and investigations sent and CT scan of brain done. Her prbs- 102 mg/dl, hb-10.6 gm%,

total leucocyte count -5.7 units, platelet count-2×105, LFT, RFT and serum electrolytes within normal limits. CT brain revealed no significant abnormality. Patient was taken to higher center and followed up. There her pscyiatric opinion done and was diagnosed as delirium secondary to organic lesion, then neurology opinion done and MRI brain done which revealed acute infract in left caudate nucleus as shown in figure no.1. So, she was diagnosed as a case postpartum psychosis with cerebrovascular thrombosis with sepsis. She was started with aspirin 75 mg OD, clopidogrel 75 mg OD and atorvastatin 80 mg OD. After correction of dehydration and sepsis and above mentioned drugs she improved and start responding to verbal commands and on 4th day she was discharged. Repeat brain imaging revealed near total disappearance of diffusion restriction and subsidence of the bleeding pattern in cerebral vasculature.

Discussion

The clinical feature of both ischemic and haemorrhagic strokes involving the caudate nucleus include behavioural abnormalities, dysarthria, movement disorders, language disturbances and memory loss. Caudate nucleus haemorrhage lesions are associated with attention impairments and frontal executive dysfunction with memory deficits. Most common clinical feature is residual loss of drive, apathy often occurs in conjunction with cognition impairment and progressive functional decline and is associated with disruption of neural networks connecting ventral aspect of the caudate nucleus to numerous other cerebral structures. Notably, there are three major arteries supplying blood to the head of caudate nucleus, which are: the Heubner's artery, anterior lenticulostriate arteries, and lateral lenticulostriate arteries that supply the inferior, anterior, and the major part of the caudate head, respectively as shown in figure no. 2. Thus, small-artery diseases could be a main cause of caudate ischemic stroke. Hypertension, diabetes, and hypercholesterolemia are usually associated risk factors. In the present case, MRA showed no obvious big vascular abnormalities, which also supports the aforementioned statement. In addition, clogging of perforators with atherosclerotic plaque due to large artery disease may be another important cause of caudate infarction. Cardiac embolism is another potential cause of caudate infarction.[6]

A cerebral venous thrombosis is an uncommon form of stroke with a wide range of clinical manifestations. The risk factors are pregnancy, intravenous drug abuse, infection, and dehydration. 90% of cases have a headache as the main symptom. Seizures are fairly common in CVT. Papilledema is found in around 30% of cases and is attributed to raised intracranial tension. Focal neurologic deficits do occur in CVT as consequence of infarcts and less commonly, due to hemorrhages. Deep gray matter hemorrhages mostly occur in thrombosis of straight sinus and vein of Galen.[7] RCVS is a rare form of angiopathy and has been mostly reported in the background of childbirth. Segmental arterial spasm is the basic mechanism which gives rise to an excruciating headache. Infarcts and hemorrhages both have been reported in the context of RCVS. However, hemorrhage in RCVS precedes infarct. Basal ganglia hemorrhage can frequently occur in RCVS, resulting from a spasm in the proximal part of arterial circulation.[8]

Our patient developed the immediate post-partum period. Rather, taking into account the subsequent development of widespread infarct in both frontal lobes along with obvious beading pattern in multiple cerebral arteries on MRA, one has to consider the possibility of RCVS.

The resolution of diffusion restriction and vascular segmental constriction in follow-up MRI brain after 2 months further supported the idea of RCVS. We speculate that our patient developed RCVS at the point of the second bout of a headache. The left caudate bleed was an early hemorrhagic manifestation of RCVS in this case. There are two likely possibilities in the present case: RCVS and CVT were co-existent or CVT gave way to RCVS. The association between CVT and RCVS has been previously reported in two women during immediate postpartum. In both case, the authors concluded that CVT and RCVS were probably distinct pathophysiologically, although Katzin et al. hypothesized that rapid changes in CSF pressure due to CVT may be mechanistically involved in triggering RCVS. Recently, another such case showing an association between these two forms of angiopathy has been described in a young lady who had a stent in her lateral venous sinus for the management of idiopathic intracranial hypertension.

Conclusion

This case depicts the co-occurrence of venous and arterial angiopathies in the setting of post-partum headache with a stroke that led to a challenging clinical scenario.caudate nucleus lesions can cause various cognitive and behavioral abnormalities.The present case of caudate head infarction involved

cognitive damage and behavioural abnormalities as the main presentations, which is unusual in clinical practice.

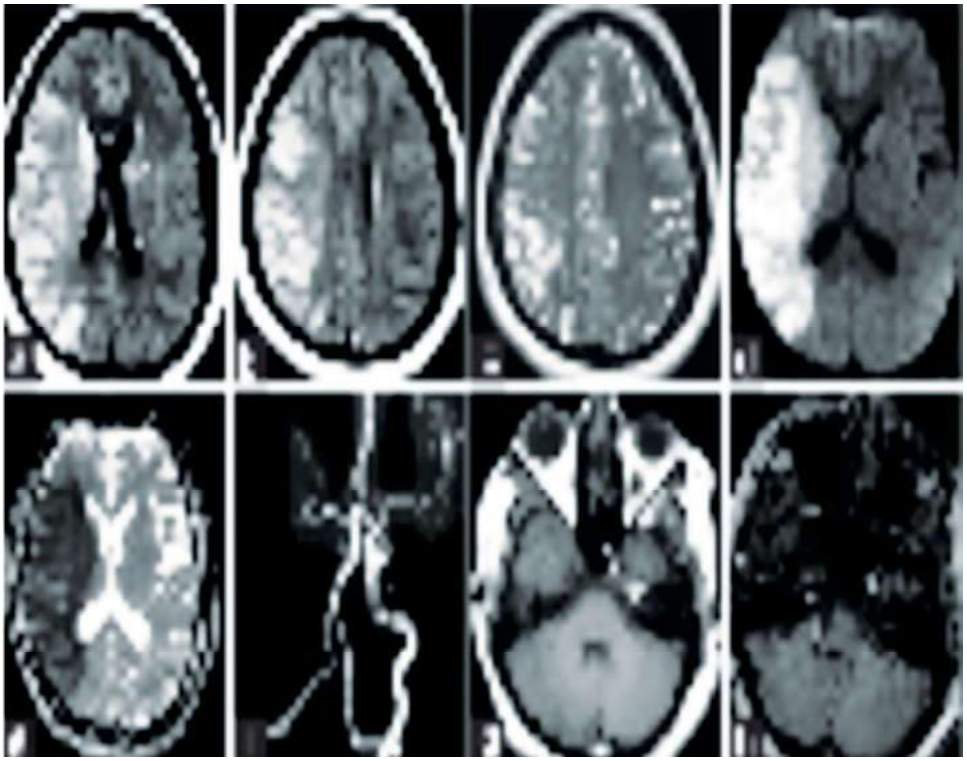

Fig.1: Showing MRI brain of infract in left caudate nucleus.

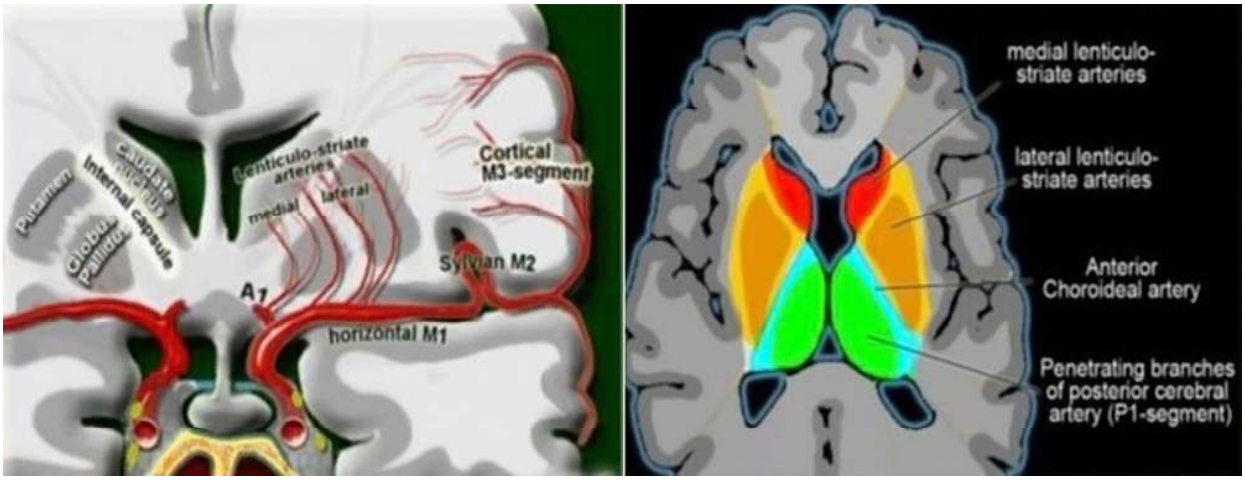

Fig.2: Showing vascular supply of basal ganglia.

Reference

1. Headache Classification Committee of the International Headache Society (IHS). The international classification of headache disorders, 3rd edition (beta version). Cephalalgia 2013;33:629-808.
2. Calabrese LH, Dodick DW, Schwedt TJ, Singhal AB. Narrative review: Reversible cerebral vasoconstriction syndromes. Ann Intern Med 2007;146:34-44.
3. Ducros A, Fiedler U, Porcher R, Boukobza M, Stapf C, Bousser MG, et al. Hemorrhagic manifestations of reversible cerebral vasoconstriction syndrome: Frequency, features, and risk factors. Stroke 2010;41:2505-11.
4. Singhal AB, Hajj-Ali RA, Topcuoglu MA, Fok J, Bena J, Yang D, et al. Reversible cerebral

vasoconstriction syndromes: Analysis of 139 cases. Arch Neurol 2011;68:1005-12.

5. Ferro JM, Canhão P, Stam J, Bousser MG, Barinagarrementeria F, ISCVT Investigators. et al. Prognosis of cerebral vein and dural sinus thrombosis: Results of the international study on cerebral vein and dural sinus thrombosis (ISCVT). Stroke 2004;35:664-70.
6. Duoduo Zhang, Wei Zhang, Chunyang Wei, Jingjing Kong, Cognitive and behavioral dysfunctions caused by caudate infarction: a case report and literature review.Int J Clin Exp Med 2017;10(11):15615-15618www.ijcem.com / ISSN:1940-5901/IJCEM0055845
7. Dash D, Prasad K, Joseph L. Cerebral venous thrombosis: An indian perspective. Neurol India 2015;63:318-28.
8. Topcuoglu MA, Singhal AB. Hemorrhagic reversible cerebral vasoconstriction syndrome: Features and mechanisms. Stroke 2016;47:1742-7.