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Case Report

Reversible Cerebral Vasoconstriction Syndrome (RCVS) with Late Presentation After Abortion and Multiple Neurologic Complications: A Case Report

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Abstract

RCVS is a cerebrovascular disorder that can be occur as late as 3 weeks after an uncomplicated pregnancy, characteristic neuroimaging finding accompanied by severe and acute headache are important key features to consider RCVS diagnosis.

Here were present a 39-year-old woman, presented with headache and subsequent right hemiparesis 3 weeks after abortion. First brain CT scan was unremarkable. Brain CT angiography showed multiple segmental stenosis and at later scans, she developed sub arachnid hemorrhage (SAH) which is a pathognomonic feature of RCVS. She was treated with calcium channel blocker and headache relieved and hemiparesis was improved. Final diagnosis was made based on normal trans-cranial Doppler (TCD) study after 4 weeks of symptoms onset.

Keywords: *Cerebral Vasoconstriction Syndrome,Multiple Neurologic Complications,Abortion.*

Introduction

RCVS is a cerebrovascular disorder previously named Call-Fleming thunderclap headaches with reversible vasospasm, is a clinical & radiological syndrome that is combination of severe headaches and neurological symptoms as a result of diffuse segmental constriction of cerebral arteries that causes transient distribution of the regulation of cerebral arteries tone that resolves within 3 months. Headache type in this disorder is recurrent sudden onset and severe, often accompanied by symptoms including nausea, vomiting, photophobia, confusion and blurred vision. Non-aneurysmal SAH, ischemic stroke and intracerebral hemorrhage are probable complications of RCVS [1] most commonly seen in women aged 20-50 years. There are different triggers cause RCVS but about more than half of the cases of RCVS are secondary mainly to postpartum and to the exposure to certain drugs such as vasoactive substances [2].

Case presentation

A right-handed 39-year-old woman was referred to our center because of persistent headache and inadequate improvement despite treatment. Her symptoms were started 7 weeks ago (3 weeks after abortion). First she had severe attacks of headache. Physical examinations and lab studies were unremarkable. Initial Brain CT scan was normal (Figure 1).

Brain CT angiography showed multiple segmental stenosis in cerebral anterior circulation including anterior cerebral arteries and middle cerebral arteries, diffuse vasospasm in intracranial segments of vertebral, basilar and posterior cerebral arteries, there was no aneurysm at brain CT angiography. A few days later she developed right hemiparesis and second brain MRI showed hypo density at left basal ganglia in favor of ischemic changes (Figure 2). Headaches continued and third brain CT demonstrated blood in convexity sulci (SAH) (Figure 3).

After admission she was set on calcium channel blocker therapy (Nimodipine 60 mg every 4 hours) and headaches recovered during hospitalization. After 4 weeks of treatment TCD was performed to evaluate vasospasm, but no vasospasm was detected, so diagnosis of RCVS was established.

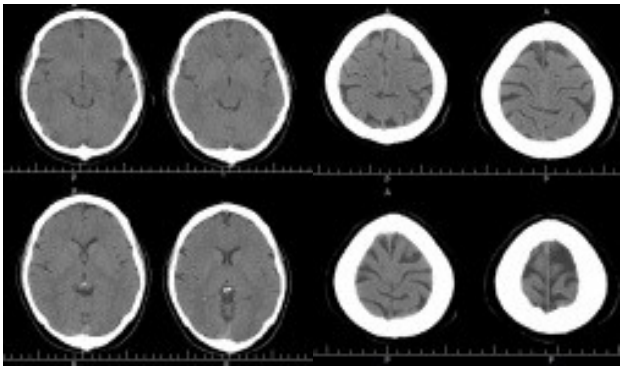

Figure 1. Initial normal brain CT scans of patient after headache onset

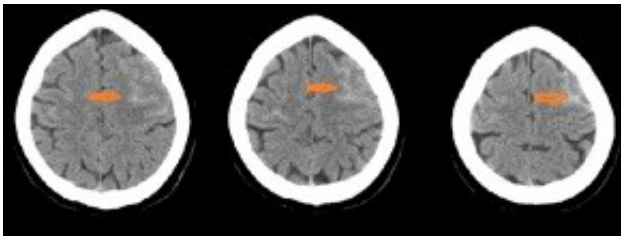

Figure 3. SAH in 3rd brain imaging obtained from patient

Discussion

The term reversible cerebral vasoconstriction syndrome (RCVS) was suggested in 2007 and criteria described as follows: (a) documentation multifocal segmental vasoconstriction of cerebral artery demonstrated on CTA/MRA or DSA, (b) rule out of aneurysmal subarachnoid hemorrhage, (c) normal or near normal cerebrospinal fluid study, (d) illness history compatible with RCVS including severe and acute headache and probable additional neurological symptoms which can be caused by RCVS complications such as stroke, ICH or SAH, (e) uniphasic disease course without new symptom after 1 month, (f) Reversibility of the angiographic abnormalities within 12 weeks after symptom onset [3].

Postpartum state is one of the main potential triggers for RCVS. It occurs anywhere from 1 to 3 weeks following a pregnancy. RCVS after 3 weeks after pregnancy has rarely been reported [4].

Prognosis of postpartum RCVS in the majority of cases is good and has self-limited course but it is more likely to have sequel so physician should consider and close monitor RCVS in suspected postpartum patients. treatment with nimodipine is first choice verapamil and nicardipine are the next choices, symptomatic treatment including normalization of blood pressure, treatment of stroke and pain relief is advised [5].

We presented this case because of 1) its late presentation after delivery, 2) the path gnomic future of RCVS which patients with thunderclap headache has normal first brain CT scan but develop SAH at later scans and 3) presence of major neurologic complications (ischemic stroke, SAH) in the same patient.

Conflict of Interest

None

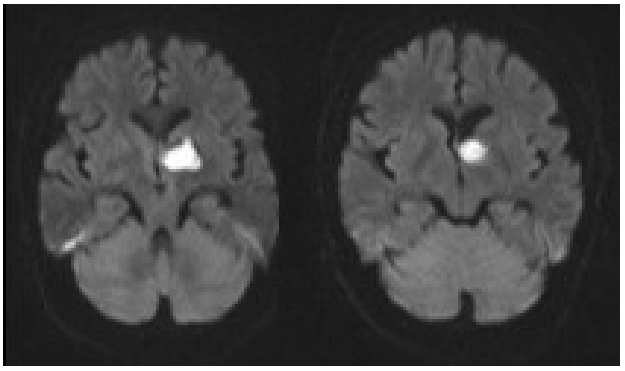

Figure 2. Irain MRI demonstrated restriction diffusion changes in favor of ischemic changes in left basal ganglia

Funding source

None

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