

## Reversible Cerebral Vasoconstriction Syndrome during Caesarean Section.

Tarunikachhonker, Rahul chauhan

1 Post graduate department of Anaesthesia National Institute Of Medical Sciences and Research, Jaipur  
Rajasthan

2 Senior resident Neurology department of Neurology Paras Hospitals Gurgaon.

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### I. Summary

We describe a case of 21 year old female who during her emergency Caesarean section had thunderclap headache and generalised tonic clinic seizure due to reversible cerebral vasoconstriction syndrome(RCVS).The syndrome was caused by Phenylephrine given intravenously to correct arterial hypotension post spinal anaesthesia. Reversible cerebral vasoconstriction syndrome (RCVS) is characterised by severe headaches, with or without other acute neurological symptoms, and diffuse segmental constriction of cerebral arteries.The syndrome can be caused by several triggers including post partum, vasoactive drugs,immunosuppressant,blood products etc. Diagnosis and management can be challenging especially during post partum period. The aim of this case report is to create awareness about this syndrome so that it can be promptly diagnosed and appropriately managed. We also discuss briefly about causes,diagnosis,presentation and management of reversible cerebral vasoconstriction syndrome.

### II. Case Presentation

A 21 year old healthy female was admitted at 38 weeks gestation for spontaneous onset of labour with foetal presentation in the breech position. Her past medical history was uneventful. Physical examination,vital signs,and blood tests were all in normal range.An urgent Caesarean section was planned for the patient. Spinal Anaesthesia was performed in left lateral position using a 25 gauge needle at L3-L4 interspace with 10 mg hyperbaric Bupivacaine.Shortly after the anaesthesia patient developed bradycardia and hypotension(pulse of 38bpm and blood pressure of 70/40mmhg). For this patient was given 0.6 mg atropine,100mcg Phenylephrinefollowing administration of drugsdeveloped tachycardia at 135bpm and hypertension , by of 170/130 mmhg and reported a severe onset of diffuse headache this was immediately followed by generalised tonic clinic seizure. After this patient was given 2mg of Midazolam and 20mcg of Nitroglycerin. After this patient stopped to seize and her vitals returned to normal. After normalisation of vitals the surgery was carried out and was uneventful.She delivered a healthy baby of 2600 gm . MRI brain was performed after stabilisation of the patient which revealed signs of RCVS, segmental narrowing of left anterior cerebral arteryher headache completely resolved and she did not seize again.

### III. Background

Reversible cerebral vasoconstriction syndrome (RCVS) is characterised by severe headaches, with or without other acute neurological symptoms, and constriction of cerebral arteries that resolves spontaneously within 3 months.<sup>12</sup>Clinical features are mainly due to transient disturbance of cerebral auto regulation. Thunderclap headache—severe pain peaking in seconds—is usually the first symptom<sup>3 4 5</sup> ischaemic and

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### REFERENCES

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haemorrhaging strokes along with seizure are the usual presentation. Previous names of RCVS have been called Fleming syndrome, Migraineangitis, Cerebral vasculopathy.

#### **IV. Discussion**

RCVS has been reported in people aged from 10 to 76 years, but occurrence peaks at around 42 years and the syndrome is more common in women than in men<sup>67</sup>. No specific demographic predilection has been observed. The clinical manifestations typically follow an acute and self-limiting course. By far thunderclap headache is the most common presentation, severe headache peaking in less than 1 minute. It is generally bilateral with initiation from back of the head followed by diffuse pain. Focal deficits which can be transient or permanent and seizures have been reported<sup>8</sup>. Transient focal deficits are present in about 10% of patients. Persistent deficits, including hemiplegia, aphasia, hemianopia, or cortical blindness, have also been reported. The neurological examination is usually normal unless associated with focal deficits.

The routine blood investigations like complete blood count, renal function tests, liver function tests, serum electrolytes are usually normal. Tests for angitis are also usually normal, urine for toxicology screen should be done for ruling out illicit drug abuse. Neuroimaging is the mainstay in diagnosis of RCVS. Lesions are reported in 10-80% of patients and can include convexity subarachnoid haemorrhage, cerebral infarction, reversible brain oedema. Cerebral angiography is also done to demonstrate segmental narrowing and dilatation (strings of beads) of one or more arteries. Biopsy of artery is not recommended for RCVS.<sup>9</sup> Transcranial Doppler can also be of help in monitoring of RCVS. Other causes of thunderclap headache should also be sought out like subarachnoid haemorrhage, meningitis, intraventricular haemorrhage etc. No randomised clinical trials of treatment for RCVS have been done, but early recognition of the syndrome is important so that symptoms can be managed effectively. The treatment mainly relies upon symptomatic management and identification and elimination of offending agents if any. Treatment should include analgesics, antiepileptics intensive care monitoring. Prognosis is usually good if not complicated by focal neurological signs. The mortality rate is less than 1%.

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