



Case Report

Recurrent Thunderclap Headache During Sexual Intercourse

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Summary

Reversible cerebral vasoconstriction syndrome (RCVS) is characterised by severe headaches, with or without other acute neurological symptoms and diffuse segmental constriction of cerebral arteries that resolves spontaneously within 3 months. The onset of RCVS is acute thunderclap headache usually triggered by sexual intercourse. For a diagnosis of RCVS all other possible causes must be excluded because sexual activity related headache is a primary headache. Herein we report a male patient that had recurrent thunderclap headaches during sexual course but no complications such as seizure, ischaemic events and cerebral hemorrhage. Cerebral vasoconstriction was observed via MR angiography and was based on follow up MR angiography.

Key words: Reversible cerebral vasoconstriction syndrome; thunderclap headache; sexual activity

Seksüel Aktivite İle İlişkili Tekrarlayıcı Gökgürültüsü Baş Ağrısı

Özet

Geçici serebral vazokonstriksiyon sendromu (GSVS) akut nörolojik semptomların eşlik ettiği veya etmediği, serebral arterlerin yaygın segmental daralmasının 3 ay içinde çözüldüğü, baş ağrısı ile karakterize sendromdur. GSVS başlangıcı, genellikle seksüel ilişkinin tetiklediği ani başlangıçlı gök gürültüsü baş ağrısı doğasıdadır. GSVS tanısında; seksüel akitivite ile ilişkili baş ağrısı primer baş ağrısı sınıflamasında olduğundan bütün olası sebepler dışlanmalıdır. Burada seksüel ilişki sırasında tekrarlayan gök gürültüsü baş ağrısı olan ; fakat nöbet, iskemik olay, serebral hemoraji gibi komplikasyonların eşlik etmediği erkek hasta ele alınmıştır. Hastanın MR anjiografisinde saptanan serebral daralma, kontrol MR anjiografisinde saptanmamıştır.

Anahtar Kelimeler: Geçici serebral vazokonstriksiyon sendromu, gökgürültüsü baş ağrısı, seksüel aktivite

INTRODUCTION

Reversible cerebral vasoconstriction syndrome (RCVS) is characterised by severe headaches, with or without other acute neurological symptoms and diffuse segmental constriction of cerebral arteries

that resolves spontaneously within 3 months.^(1,10) The peak incidence of RCVS age is 42 years and females are more frequently affected than males.^(3,7,12) The onset of RCVS is an acute thunderclap headache that peaks in < 1 minute. The

typical headache is diffuse and bilateral. Headaches can occur with vomiting, nausea, photophobia and phonophobia.^(2,11) It was reported that 79% of patients report > 1 triggers before a headache including sexual intercourse, defecation, physical exertion, urination without effort, coughing, sneezing, bathing or showering, and sudden head movement; but sexual intercourse is the most frequent trigger (29%).⁽⁷⁾ Multiple thunderclap headaches (mean: 4.5, range: 2-18) recur during 1-26 days.⁽⁷⁾ Although the course of RCVS is benign; seizures and focal neurological deficits can occur after the onset of headaches.⁽⁵⁾ Early complications (those that occur within the first week of onset) include cortical subarachnoid hemorrhage (22%), intracerebral hemorrhage (6%), seizures (3%), and reversible posterior leukoencephalopathy (9%). Ischemic events (20%) occur primarily during the second week post onset.⁽⁷⁾ Herein we report a male patient that had 2 thunderclap headache attacks triggered by sexual intercourse, but no complications such as seizure, ischemic events, and cerebral hemorrhage.

CASE PRESENTATION

A 44 years- old male presented with recurrent thunderclap headaches. His first attack occurred during orgasm. The patient reported the pain was like an exploding bomb. Photophobia accompanied the headache and it lasted after 3 hours. The associated visual analogue scale (VAS) pain score was 8. Three (3) days apart, headache recurred during the erection

phase of sexual activity and caused pain that was similar to that experienced during the previous attack. The second headache lasted 1-2 hours and had a VAS pain score of 7. The patient presented to our clinic 6 days after the first headache attack. The patient had a negative history of disease and medical treatment. He did not report using any drug. Physical and neurological examination findings were normal. Complete blood count, serum electrolyte concentrations, liver and renal function test results were normal. Emergent brain CT and cranial MRI findings were normal. MR angiography performed 11 days after clinical onset showed vasoconstriction in the right middle cerebral and right vertebral arteries (Figure 1), but there were no signs of paresis, vertigo, seizure, or sensorial symptoms. Lumbar puncture was immediately scheduled, but the patient didn't consent to the procedure until 1.5 months later.

Cerebrospinal fluid (CSF) glucose was normal, and it did not contain erythrocytes or white blood cells. CSF protein was 561 mg/dL (150-450). Tests for angitis were normal. The patient was advised to take analgesics if the headache recurs. The patient was scheduled for follow-up 1 month later, but did not return to our clinic until 1 year later, at which time physical and neurological findings were normal. He reported that there was no recurrence of headache and MR angiography was negative for vasoconstriction (Figures 2 and 3).

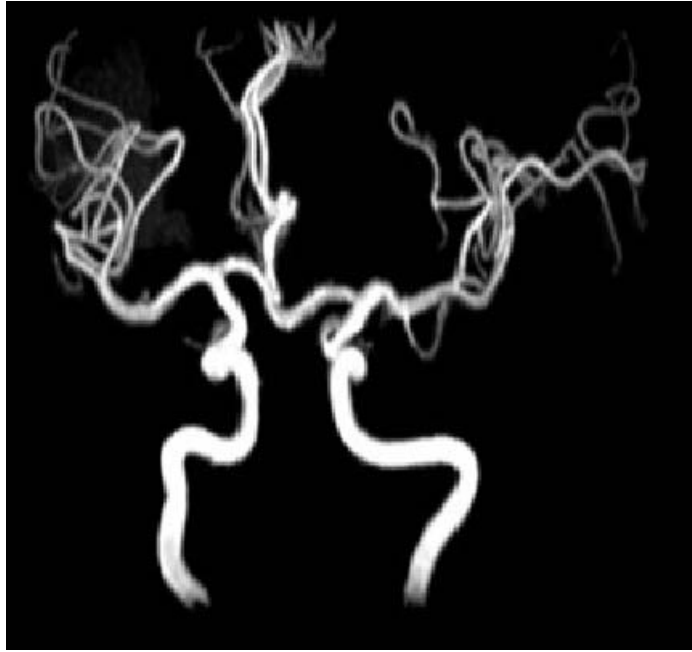


Figure 3: Normal Magnetic resonance angiogram

DISCUSSION

Sexual activity-related headache is a sudden and severe headache that occurs during sexual activity; it can be orgasmic or pre-orgasmic. To make the diagnosis of RCVS all other possible causes of headache must first be excluded, as sexual activity-related headache is a primary headache.⁽¹⁰⁾ The presented patient had cerebral vasoconstriction, based on MR angiography findings. Recurrent thunderclap headache attacks, onset with a trigger (sexual intercourse), and reversibility of cerebral vasospasm were indicative of RCVS in the presented patient. The presented patient had 2 headache attacks triggered by sexual intercourse 3 days apart. Detection of this rare syndrome is important, because vasospasm can cause neurological deficit and seizures. In patients with thunderclap headache emergent brain CT must be performed for excluding subarachnoid hemorrhage or other overt intracranial lesions. In patients with negative CT findings and in those with multiple thunderclap headache attacks within a short period; cranial MRI, including

venography and angiography, must be performed.

Calabrese et al. suggest using conventional angiography for identifying cerebral vasoconstriction.⁽¹⁾ Conventional angiography can trigger cerebral vasospasm in the onset. Ducros et al. reported that $\leq 9\%$ of patients experience transient neurological deficit after catheter angiography.⁽⁷⁾ However the sensitivity of indirect methods of angiography is 70% lower than that catheter angiography.^(7,8) In addition, if performed early MR angiography findings might be normal. Maximum vasoconstriction of the branches of the middle cerebral arteries (shown via MR angiography) occurs a mean 16 days after clinical onset.⁽³⁾ In the presented patient vasoconstriction in the right middle cerebral and right vertebral arteries was observed 11 days after the first thunderclap headache.

RCVS can occur spontaneously or as a result of various factors. Secondary causes are associated with pregnancy and the postpartum period, exposure to vasoactive substances (most commonly cannabis, selective serotonin reuptake inhibitors, and

nasal decongestants), catecholamine secreting tumors, extra- or intracranial large artery disorders or procedures, exposure to blood products, hypercalcemia, and porphyria.^(1,4,7) Secondary causes of RCVS must be determined based on anamnesis and neuroimaging. All secondary causes of RCVS were excluded in the presented patient. There isn't a specific treatment for RCVS, because there have been no randomized controlled trials. Based on expert opinion and case series, discontinuation of potential triggering drugs is advised.⁽⁹⁾ All RCVS patients require symptomatic management, which is primarily based on the identification and elimination of any triggers or exacerbating factors.⁽⁶⁾ The presented patient was not given any treatment because there were no complications.

In conclusion, RCVS is rare disease and patients must be closely monitored for life-threatening complications. The presented case shows that thunderclap headache after sexual intercourse might be the result of RCVS. Angiography must be performed to determine the cause of thunderclap headache. In the presented case cerebral vascular vasospasm was observed via MR angiography, without MR angiography RCVS might be detected as sexual orgasmic headache.

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