# Spontaneous regression of cerebral arteriovenous malformation- Case report

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## Abstract

Spontaneous regression of cerebral arteriovenous malformation is rare and less than hundred cases have been reported in literature. The authors report a case of 64 year/male who was diagnosed with cerebral arteriovenous malformation which was found to undergo spontaneous regression on repeat imaging. Spontaneous regression of a cerebral arteriovenous malformation is a rare phenomenon.

## Introduction

Spontaneous regression of cerebral arteriovenous malformation (AVM) is a rare and poorly understood condition.[1] Less than hundred cases have been described in literature. The common clinical and angiographic features of spontaneous regression of cerebral AVMs are: intracranial hemorrhage as an initial presentation, small AVMs, and a single draining vein.[2] However spontaneous regression of cerebral AVMs can not be predicted by clinical or angiographic features and it should not be considered as an option in cerebral AVM management, despite its proven occurrence.[3] Occlusion of a single draining vein may lead to total venous outflow obstruction and lesion thrombosis. Hemorrhagic presentation and small nidus may also predispose to this phenomenon. [4]

## Case description

A 64 year/ male presented with complaints of headache to the out patient department . Further investigations showed arterivenous malformation on the left side of brain. The aneurysm showed complete regression on further imaging.

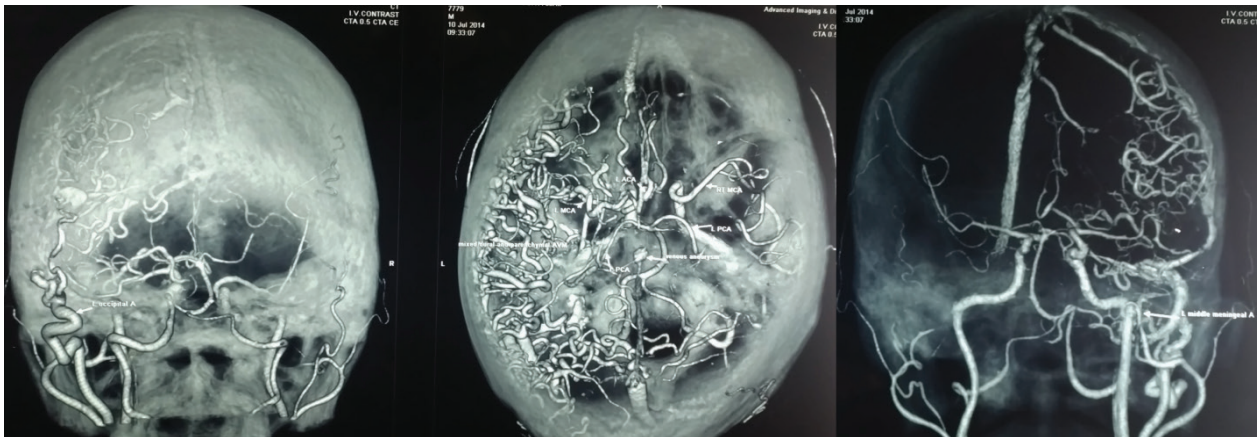

*Figure 1: July 2014*

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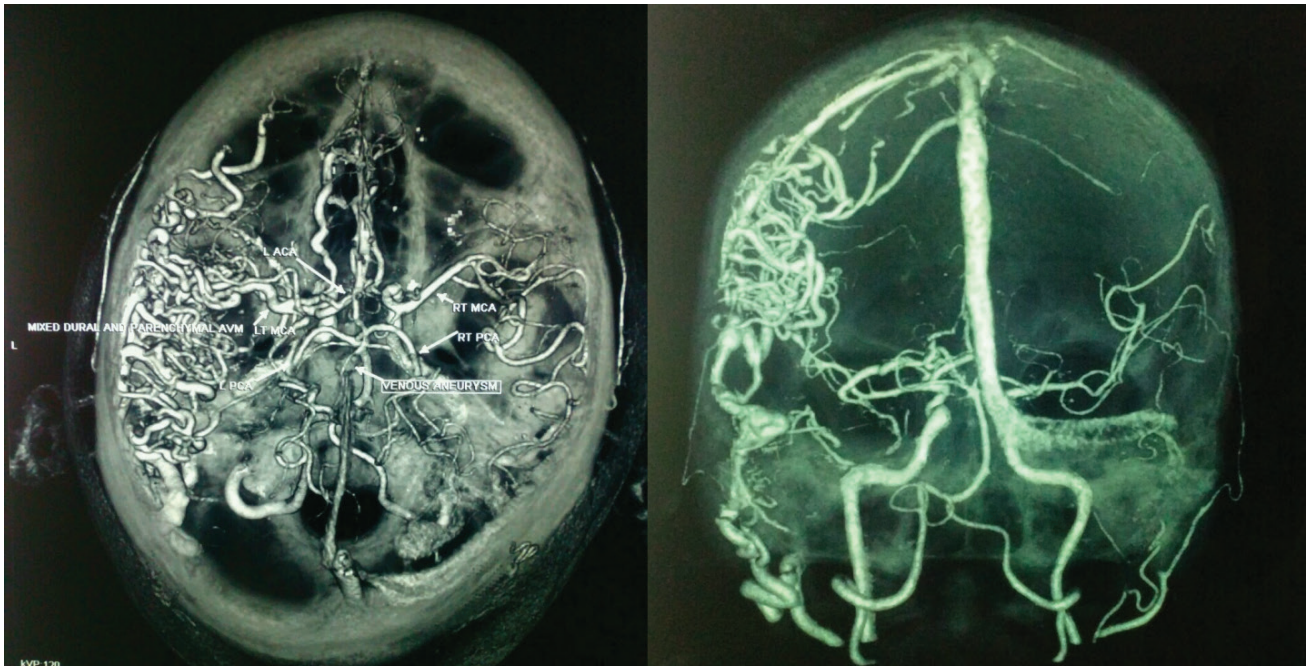


*Figure 2: October 2017*

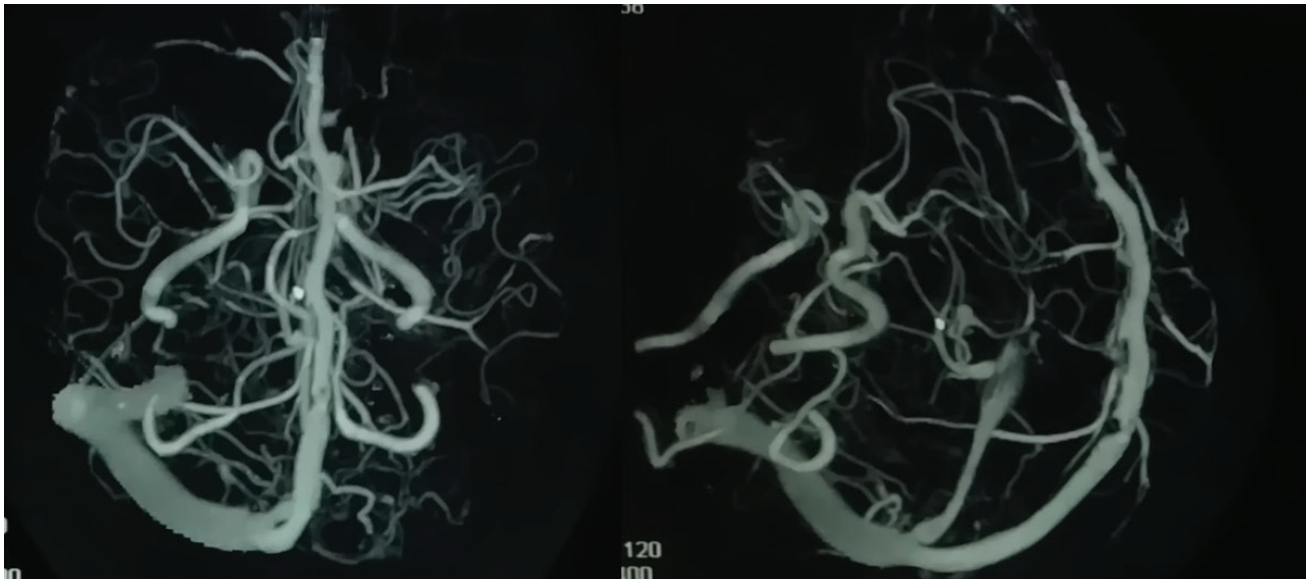


*Figure 3: April 2019*

## Discussion

Schwartz et al described three patients with angiographically proven AVMs which had complete obliteration on follow up. All three patients had single draining vein. Intracranial hemorrhage, was seen in two of three cases. MRI showed thrombosed draining vein in both cases.[1]

Abdulrauf et al. described their experience with six cases (four with no previous treatment intervention and two postoperative residual malformations) that were identified as having occurred during a 20-year period and describe the clinical and lesion features associated with this rare phenomenon. A single draining vein was a feature in each of the 6 cases. Hemorrhage was the presenting symptom in 5 of the 6 cases. The size of the AVM was less than 6 cm in each of the 6 cases.[2]

Dennis et al. described a brain AVM patient who was referred for radiosurgical treatment. Shortly before treatment however, complete spontaneous regression occurred. This patient had experienced a hemorrhage in the months before referral. They reviewed 38 articles in which 67 cases of complete and spontaneous regression of a brain AVM were presented. Male to female ratio was

1.2, with a mean age of 37 years (range 1-81). Regression occurred in 72% without new neurological events. Median size of the nidus was 2 cm (range 1-7). There was a single arterial feeder in 46 % and a single draining vein in 59%. [3]

Lee et al described the clinical and angiographic findings of four cases from their series and 29 cases from the literature. The clinical and angiographic features analyzed were: age at diagnosis, initial presentation, venous drainage pattern, number of draining veins, location of the AVM, number of arterial feeders, clinical events during the interval period to thrombosis, and interval period to spontaneous thrombosis. Common clinical and angiographic features of spontaneous regression of cerebral AVMs are: intracranial hemorrhage as an initial presentation, small AVMs, and a single draining vein. Besides they concluded that spontaneous regression of cerebral AVMs can not be predicted by clinical or angiographic features, and should not be considered as an option in cerebral AVM management, despite its proven occurrence.[4]

**Competing interest:** The authors report no competing interest in publishing this article.

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