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Acase of Arterio-Venous Malformation Diagnosed by Magnatic Resonance Angiogram (Mra)

KEYWORDS: AVM,MRI, MRA

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ABSTRACT *20 years old male patient came to the hospital suffering from severe headache scanned by Magnetic Resonance Imaging MRI. The Magnetic Resonance angiography MRA showed that there is undifferentiated web of arteries and veins in the right cerebral hemisphere.*

Introduction:
Normally, arteries carry blood containing oxygen from the heart to the brain, and veins carry blood with less oxygen away from the brain and back to the heart. When an Arterio-Venous Malformation (AVM) occurs, a tangle of blood vessels in the brain or on its surface bypasses normal brain tissue and directly diverts blood from the arteries to the veins [1].

Brain AVMs:
occur in less than one percent of the general population. It is estimated that about one in 200–500 people may have an AVM. AVMs are more common in males than females[1].

MRA:
The magnetic resonance angiogram, or MRA, is a noninvasive test that has demonstrated usefulness in defining the anatomy of blood vessels of certain size in the head and neck. MRA serves as a complement to traditional MRI scanning in evaluation of the brain and neck [2].

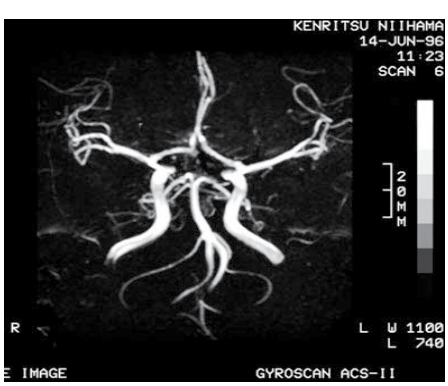

Fig 1Normal MRA [3]
Case report

A 20 years old male patient refered to the MRI department comlanning of sever headach, convulsions, The patient was scanned by 1.5 tesla MRI machine and the image of the patient was shown in Fig 2.

MRA showed that there was a web of massive blood collection in the right cerebral hemisphere

Fig 2 MRA showed undifferentiated web of blood collection in the right cerebral hemisphere –AVM

Discussion
MRI can help identify and characterize AVMs of the CNS, including the brain and spinal cord, without the use of radiation or invasive techniques. MRI is the examination of

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choice in patients with chronic headaches, seizure disorders of unknown etiology, and pulsatile tinnitus (among other conditions). [4]

MRI typically follows CT scanning in the acute setting of neurologic illness when an underlying vascular lesion, such as an AVM, is suggested. MRI scans can demonstrate areas of parenchymal AVM involvement, showing both dilated feeding arteries and enlarged draining veins [4].

MRA and venography can further supplement conventional MRI in demonstrating in a near angiographic fashion the anatomy and microarchitecture of an AVM. MRI is the study of choice in the detection of vascular malformations of the spinal cord and spinal dura [5-6-7].

High-speed functional MRI with multi-slab echo-volumar imaging is an additional diagnostic tool [8 -9] .

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