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Image Report

# Multiple aneurysms, aortic coarctation, and persistent trigeminal artery. A unique presentation

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A 47-year-old Hispanic man was evaluated at the emergency room due to the sudden onset of severe headache and nuchal rigidity. Unenhanced head computed tomography (CT) revealed subarachnoid hemorrhage (Fisher II) and CT angiography showed multiple aneurysms located in the anterior communicating artery (ACoA), probably responsible for the origin of the bleeding, as well as the M1 segment and bifurcation of the right middle cerebral artery (MCA). Digital subtraction angiography (DSA) and thoracic CT angiography revealed a persistent trigeminal artery (PTA) Saltzman Type 1 and coarctation of the aorta artery (CoA) with significant dilatation of transverse cervical and suprascapular arteries [Figure 1]. During DSA, a complete embolization of the ruptured aneurysm was achieved, and the patient showed full recovery.

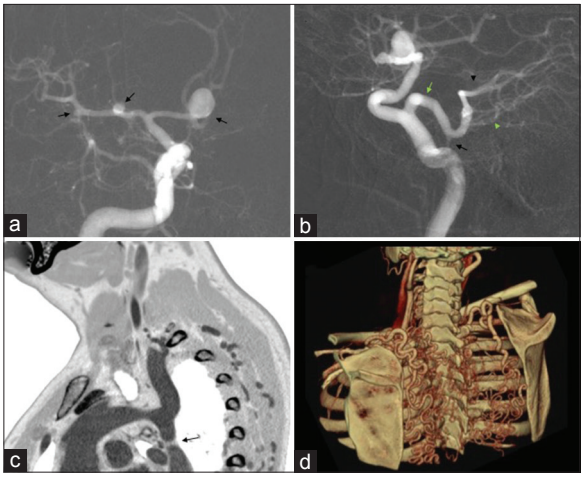


**Figure 1: Digital subtraction angiography shows (a) multiple aneurysms in anterior communicating artery and ACM (black arrows) and (b) a Saltzmann Type I persistent trigeminal artery (green arrow) that supplies the cerebral posterior arteries (black arrowhead) and superior cerebellar arteries (green arrowhead). The basilar artery appears hypoplastic (black arrow). (c) Thoracic computed tomography angiography revealed an aortic coarctation (arrow) and (d) dilatation of transverse cervical and suprascapular arteries**

## DISCUSSION

The association of CoA and intracranial aneurysms (IAs) has been previously reported with a prevalence ranging from 2.5–50%. Recently, a proportion close to 10%[3,4] has been described. The presence of a PTA associated to IAs is reported in 13–16% of cases.[1,2] However, to our knowledge, the association of multiple IAs, CoA, and PTA in a single patient has not been previously described



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in the literature. This unique clinical observation raises the question if the combination of CoA and PTA increases the incidence of aneurysms or enhances the risk of rupture.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Aguiar GB, Conti MLM, Veiga JCE, Jory M, Souza RB. Basilar artery aneurysm at a persistent trigeminal artery junction: A case report and literature review. Interv Neuroradiol 2011;17:343-6.
2. Chen YC, Li MH, Chen SW, Hu DJ, Qiao RH. Incidental findings of persistent primitive trigeminal artery on 3-dimensional time-of-flight magnetic resonance angiography at 3.0 T: An analysis of 25 cases. J Neuroimaging 2011;21:152-8.
3. Connolly HM, Huston J 3rd, Brown RD Jr, Warnes CA, Ammash NM, Tajik AJ, *et al.* Intracranial aneurysms in patients with coarctation of the aorta: A prospective magnetic resonance angiographic study of 100 patients. Mayo Clin Proc 2003;78:1491-9.
4. Curtis SL, Bradley M, Wilde P, Aw J, Chakrabarti S, Hamilton M, *et al.* Results of screening for intracranial aneurysms in patients with coarctation of the aorta. AJNR Am J Neuroradiol 2012;33:1182-6.