

Case	(433) An unusual cause of stroke: spontaneous dissection of intracranial internal carotid artery
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CASE PRESENTATION

A 48-year-old man, with no previous history was admitted with left hemiplegia and dysarthria, NIHSS of 16, and stroke code was activated. The patient underwent nonenhanced CT scan (not shown) with no signs of ischemia or vascular hyperdensity, with ASPECTS 10 score.

According to our stroke protocol CTA was performed and stenosis was found on distal right M1 with no contrast enhancement of M2 segment (figure A, blue circle). On MPR reconstructions the petrous segment of the right internal carotid artery (ICA) had a hypodense thick wall, interpreted as carotid dissection (figures B, blue arrow, and magnified in figure C, blue circle).

Following the CTA finding medical therapy was started and urgent digital subtraction angiography (DSA) was performed confirming both dissection and thrombus in distal M1. ICA was successfully stented and thrombectomy performed. On control MRI (not shown) acute ischemic lesion was seen on right frontal lobe.

Six weeks after the acute event on a MRI control complete dissection and obstruction of the right ICA was seen (figure D, volume rendering of 3D-TOF of the Willis circle).

No further affection of the brain parenchyma was noted. There has been no clinical change from then on.

DISCUSSION

Spontaneous ICA dissection (ICAD) is an infrequent cause of ischemic stroke, accounting 2% of all ischemic events but it is responsible for 10-25% of strokes in young and middle-aged adults.

The commonest location for a spontaneous ICA dissection is the cervical segment, distal to the carotid bulb. Dissections of the intracranial portion are associated with greater neurological deficits and have a poorer prognosis.

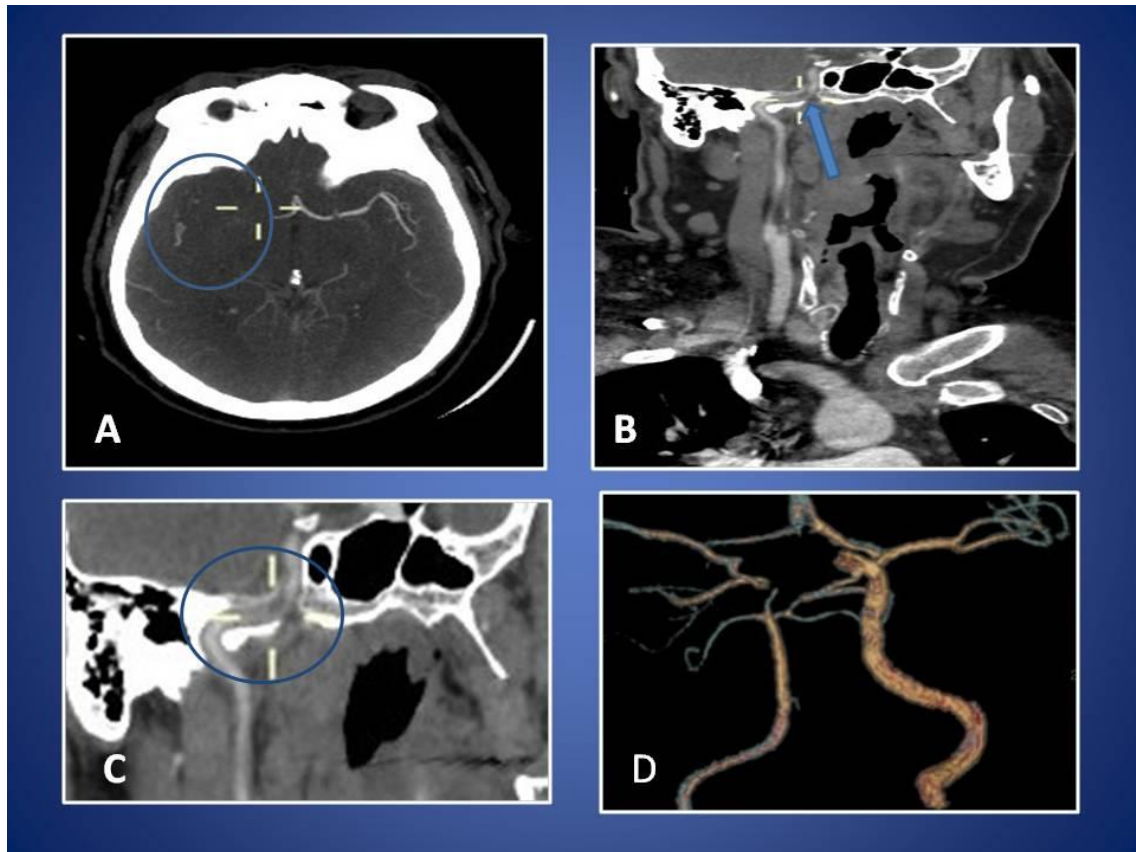
Dissections often occur secondary to trauma, though the severity of the trauma may be quite minor. Trivial mechanisms that have been associated with dissections include nose blowing, coughing and prolonged telephone conversations. CTA is a widely available, rapid imaging choice and has a sensitivity of 80% to 95% in the detection of ICAD but it is limited by the need for iodinated contrast and the challenging distinction of mural hematoma and noncalcified atherosclerotic plaque.

MRI and MRA are also included on some stroke code protocols, showing the mural hematoma as an hyperintense crescent on T1-weighted images and it is very sensitive to

detect ischemia, but studies have demonstrated that its highest sensitivity is 2 days after dissection has occurred. In patients with unstable lesions, progressing neurological deficit, or further strokes, endovascular stenting has been shown to have a technical success rate of 99% and a procedural complication rate of 1.3%.

CONCLUSION

Look out for pathology of the ICA in young patients with stroke



BIBLIOGRAPHY

- Flis CM, Jäger HR, Sidhu PS. Carotid and vertebral artery dissections: Clinical aspects, imaging features and endovascular treatment. *European Radiology*, 2007; 17(3): 82034.