Bilateral Medial Medullary Infarction: a case report.

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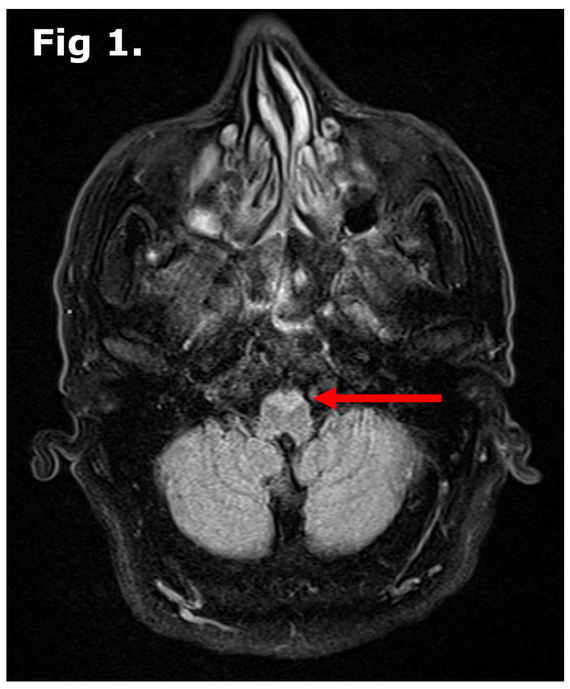
Background

Bilateral medial medullary infarction (b-MMI) is a very rare type of stroke, that usually presents with tetraparesis, bilateral profound sensory loss, dysphagia and dysarthria. Here we report on a patient with atypical clinical presentation and we discuss the etiologic mechanism of the lesions.

Case presentation

- A 68-year-old Moroccan diabetic and hypertensive male patient came to our attention for severe right-sided brachio-crural weakness occurred one month before.
- Neurological examination: patient unable to walk for right-sided brachio-crural paresis, tetrapyramidalism and dysphagia (NIHSS =6).
- Brain MRI: hyperintense areas in the bilateral ventral rostral medulla on T2, FLAIR and diffusion-weighted sequences, more extended on the left side, consistent with bilateral medial medullary infarction (Fig 1).
- Brain MRA: narrowing and irregularities of the left vertebral artery lumen in its distal segment and of the basilar artery lumen in its proximal portion, compatible with atheromatous plaques in a patient with other asymptomatic intracranial stenosis (Fig 2).
- Electrocardiographic and echocardiographic findings were suggestive of hypertensive cardiomyopathy.
- Serologic tests were negative for infective and autoimmune diseases.
- Treatment: clopidogrel and statin; dual antiplatelet therapy was not initially set because of the presence of gastric ulcers.
- 8-month follow-up: gradual improvement of the symptoms with recovery of right brachio-crural paresis and ability to walk using unilateral support (mRS=3).

Fig 1.



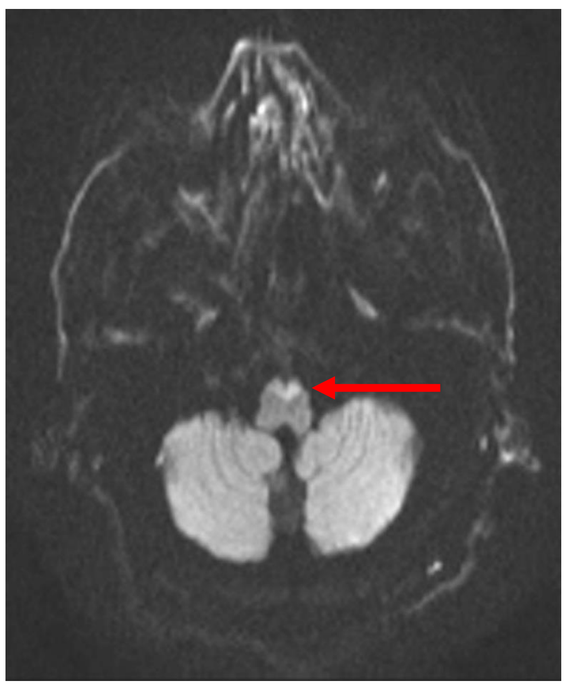
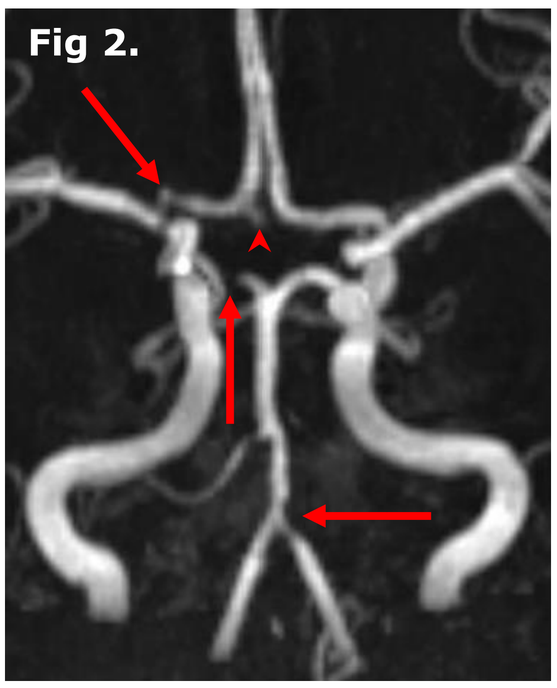
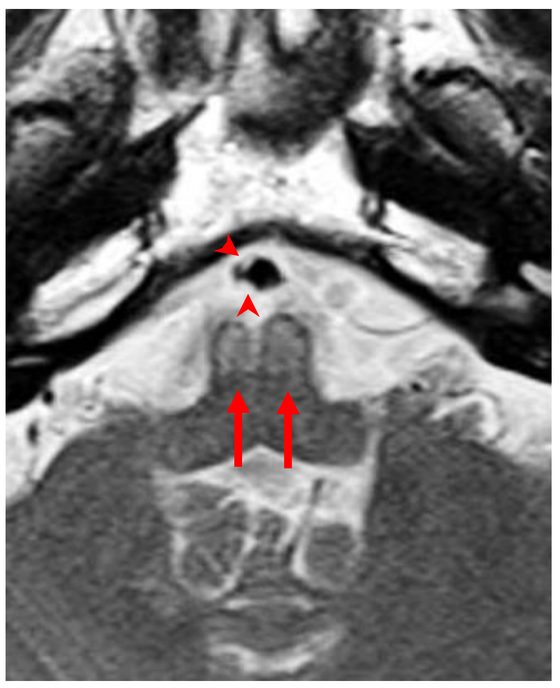


Fig 2.





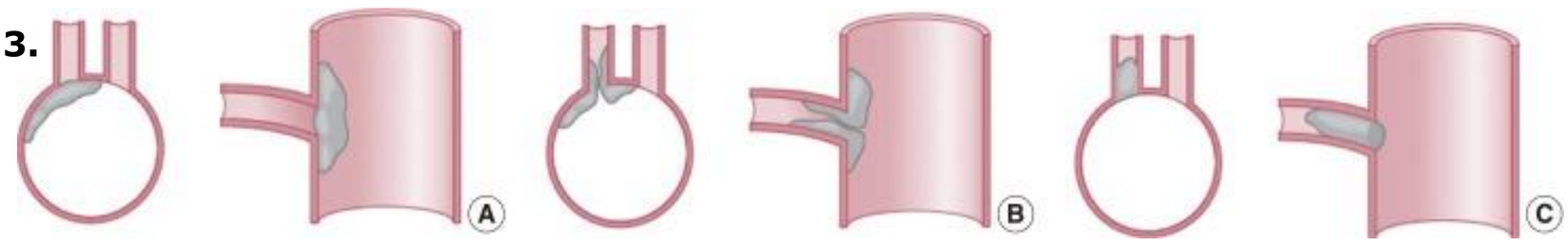
Discussion

The combination of brain MRI and MRA findings and multiple vascular risk-factors in absence of findings indicative of neoplastic or inflammatory diseases suggests the ischemic origin of the lesions.

Medial medulla vascularization is supplied by a large anastomotic net coming from the penetrating branches of anterior spinal, vertebral and basilar arteries, making medial medullary infarction very rare (<1% of all strokes) and clinical presentations extremely heterogeneous.

In our patient, the presence of an isolated bilateral infarct in the medial medulla, widely irregular basilar artery lumen in the contest of multiple intracranial stenosis, multiple vascular risk-factors and the absence of emboligen heart disease or findings of vasculitis, suggests that the mechanism of b-MMI may be the atheromatous branch occlusion due to large vessel disease (Fig 3). This is the most common cause of b-MMI according to literature.

Fig 3.



Aterothrombosis of parent artery that blocks penetrating branches

Parent atheromas that encroach on the orifice of the perforating artery

Microatheroma formed at the orifice of a branch.

Adapted from Caplan, Journal of Stroke 2015; 17:2-6.

Bibliography

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