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High Resolution 3T MR Scalp Vessel Wall Imaging in Giant Cell Arteritis: A Useful Tool

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Statement of Authorship

BK, OI, DT and MTH wrote and edited the manuscript.

Case Summary

A 68-year-old female with recent onset bilateral sequential no light perception vision secondary to presumed giant cell arteritis with markedly elevated CRP/ESR (CRP 51.2 mg/L (normal <1 mg/L) and ESR >130 mm/hr (normal <30 mm/hr)). The patient received IV methylprednisolone. Neither temporal artery could be palpated. Only the preauricular portion of the right temporal artery had a faint pulse and a biopsy in this area was deemed unsafe due to the risk of facial nerve injury (1). On ultrasound the arteries were nonaudible. High resolution scalp vessel wall magnetic resonance (MR) imaging at 3T was subsequently performed and demonstrated enhancement and thickening of the wall in the proximal segment of the right superficial temporal artery which was congruent with a diagnosis of giant cell arteritis. Immediate treatment with prednisone led to improvement of her constitutional symptoms, however, she had no significant recovery of vision. High resolution scalp vessel wall MR imaging is a recently developed technique that has been applied to the diagnosis of giant cell arteritis (2,3). Wall thickening and enhancement of the scalp arteries are key imaging features for the diagnosis of giant cell arteritis (2). Usage of 3D techniques rather than 2D techniques have also been shown to increase sensitivity (3). Scalp vessel wall MR imaging can be helpful in cases precluded from temporal artery biopsy for confirmation of diagnosis.

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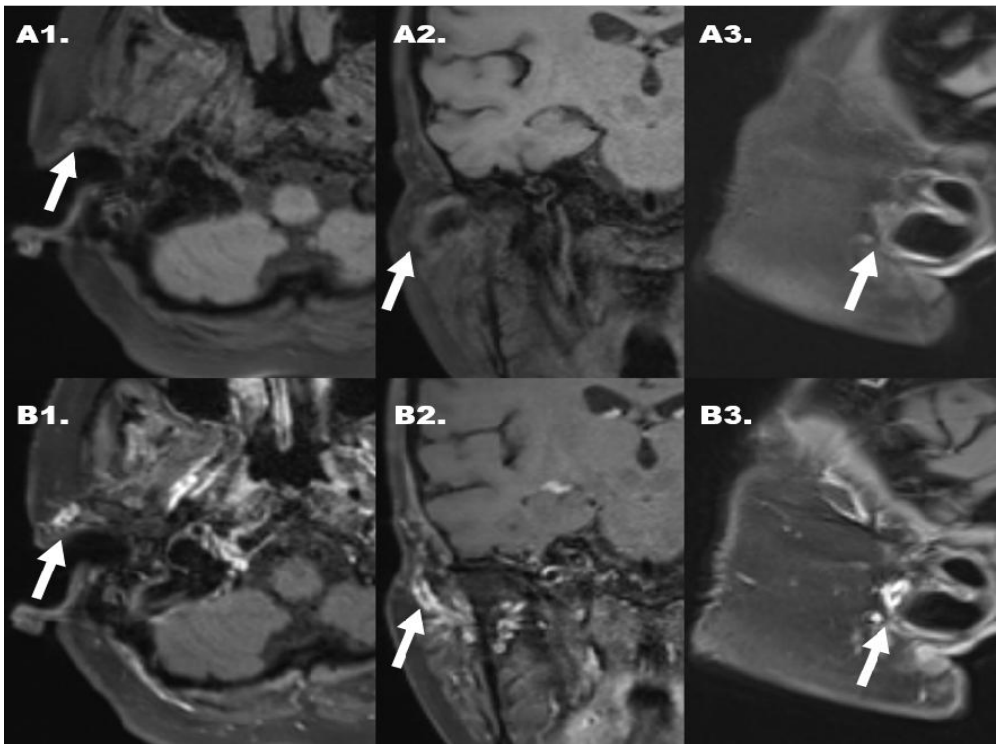

Figure 1: Pre (A1-A3) and post (B1-B3) contrast high resolution MR 3D T1 FS Black Blood Images of the scalp vessels (in axial, coronal and sagittal planes) demonstrate enhancement and thickening of the wall in the proximal segment of the right superficial temporal artery (arrow) in the region of palpable pulse.

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