Ultrasound examination of the pupil suggestive for carotid dissection

Figure 1 Ultrasonographical evaluation of the pupils

Ultrasound B-mode image of the pupillary diameter (A, B); normal pupillary reflex to light in right and left eyes (C, D); cilio-spinal reflex in right (E, no reaction) and left eyes (F, normal mydriatic reaction, Δ dilation: 16%).

A 51-year-old man presented to our emergency department with persistent right cervical pain. Neurologic examination was unremarkable, and no anisocoria was reported. Using a linear ultrasound probe, the pupillary diameters were measured at rest, under direct/consensual light stimulus, and after elicitation of the ipsilateral cilio-spinal reflex (CR), evoked by applying a painful stimulation (pinching) at the base of the neck on the trapezius muscle.^{1,2}

Figure 2 MRI of carotid dissection

FAT/SAT MRI and magnetic resonance angiography with distal dissection of the right internal carotid artery (A, B).

Although pupillary response to light was comparable on both sides (figure 1, A–D), mydriatic dilation after CR elicitation was completely absent on the right side (figure 1, E and F). FAT/SAT MRI showed a distal dissection of the right internal carotid artery (figure 2). Ultrasound examination helped to detect subtle pupillary dysfunction, not easily apparent to the clinician's eye.

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