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Aneurysm of a Persistent Trigeminal Artery

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We present a case of an intracavernous aneurysm arising from the bifurcation of the internal carotid artery and a persistent trigeminal artery in a woman with an abducens paresis.

Case report.—A 52-year-old right-handed woman had right-sided supraorbital headaches occurring twice monthly and had had diplopia of increasing severity for the past 4 years. She had right-sided proptosis and a partial right sixth-nerve palsy with no other visual or central nervous system problems. A contrast-enhanced computed tomographic (CT) scan (GE 9800) of the head and orbits was considered normal apart from slight right-eye proptosis. Cerebral angiography revealed a large aneurysm in the right cavernous region arising from the junction of the internal carotid and a large persistent trigeminal artery (figs. 1A and 1B). The trigeminal artery filled the posterior cerebral and superior cerebellar arteries on the ipsilateral side. Vertebral angiography (fig. 1C) demonstrated filling of both posterior cerebral and both superior cerebral arteries, but did not opacify the aneurysm, demonstrating preferential flow from the internal carotid artery. The neurosurgeon decided to leave the aneurysm alone at this initial presentation since he considered the risk of fatal rupture of an intracavernous aneurysm to be low and believed the risks of carotid ligation or trapping were higher. Definitive treatment will be offered if further progression of cranial nerve palsies occurs.

The persistent trigeminal artery has been reported to occur in 0.1%–0.2% of angiographic cases [1]. Its presence alone has been associated with clinical symptomatology of oculomotor paresis [2] and tic douloureux [3]. A partial sixth-nerve palsy occurred in our patient, presumably because of the mass effect in the cavernous sinus. Aneurysms of the trigeminal artery at either its carotid or its basilar connection have been reported [4–9]. The persistent trigeminal artery has also been associated with aneurysms of other cerebral vessels [4–6], moyamoya disease [10], and cerebral arteriovenous malformations [4, 11]. A persistent trigeminal artery variant has been described [4, 12] from which an aneurysm may also arise [12]. An aneurysm of the trigeminal artery that ruptured to produce a carotid cavernous fistula was reported by Enomoto et al. [13]. An aneurysm of a persistent trigeminal artery is a rare cause of symptoms arising from the cavernous sinus region, but must remain in the differential diagnosis.

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A B C

Fig. 1.—Lateral (**A**) and anteroposterior (**B**) right carotid angiograms. Large cavernous aneurysm arises from bifurcation of internal carotid artery and large, persistent trigeminal artery. Note filling of distal basilar artery as well as ipsilateral posterior cerebral and superior cerebellar arteries, also seen to opacify on vertebral angiogram (**C**); aneurysm does not fill from vertebral artery.

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Eye Artifacts from Mascara in MRI

During the early phases of operation of our magnetic resonance imaging (MRI) unit, distracting eye artifacts were often observed on the images (fig. 1A), and a subtle but definite soiling of the inner surface of the magnet was noted. The offending agent was suspected to be mascara, many brands of which contain iron oxides. A small amount of mascara on a piece of tape placed on a phantom confirmed our suspicions (fig. 1B). Also, a plastic container of mascara was found to be attracted into the magnet. The mascara artifact is not significant with routine cerebral imaging but does degrade orbital detail.

We now ask all outpatients to remove their mascara before coming to the imaging center. In addition, we have mascara-removal materials available for those who are unable to make the trip without eye makeup.

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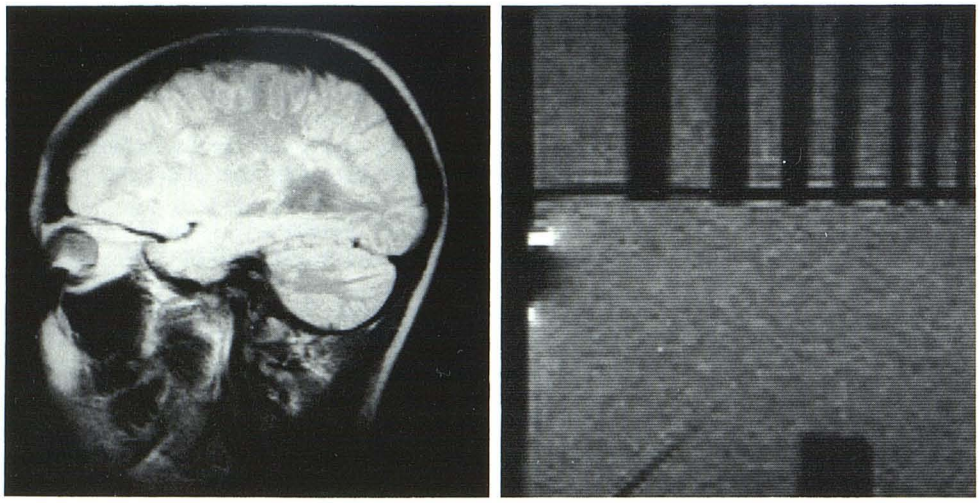

A B

Fig. 1.—**A**, Artifact over anterior orbit on MRI for multiple sclerosis. **B**, Similar artifact on phantom after application of short length of tape coated with mascara.