Case Report

Focal Dissection of Internal Carotid Artery Presenting as Horner's Syndrome- A Case Report

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Introduction

One of the most common cause of stroke in young adults is internal carotid artery dissection.[1] Patient with carotid artery dissection often present with a partial Horner's syndrome and have a high prevalence of fibromuscular dysplasia.[2] Patients with dissection-related carotid artery occlusion have a significantly increased risk of suffering a disabling stroke.[2] It is important to diagnose dissection as anticoagulation can prevent carotid thrombosis and embolism.[3]

Aim

To report internal carotid artery dissection presenting as Horner's syndrome

Case Report

A 46 year old male presented with burning sensation on the right side of face with a complaint of decrease in vision in the right eye for 2 weeks. There was no history of decreased sweating in one half of the face. There was no weakness or decreased sensation in face or any limbs. There was no history of trauma. He was a known case of diabetes and hypercholesterolemia. On examination, his best corrected visual acuity (by Snellen chart) was 6/6, N6 OU, on Hirschbergg test he was found to be orthopedic, on the cover test there was no phoria. There was no head posturing or face turn. Extra ocular movements were full in both eyes. Lid examination revealed mild ptosis in the right eye. Palpebral fissure height in OD was 10 mm and OS 12 mm (as shown in Figures 1 and 2). The pupillary evaluation showed an anisocoria of 2 mm with a right eye pupil smaller than the left eye pupil. Anisocoria was more in dim light than bright illumination (Figures 3 and 4) Both pupils were briskly reacting to light with no relative afferent pupillary defect in either eyes. There was a mild decrease in the corneal sensation in the right eye. Rest of the anterior segment examination and intra ocular pressure as tested by applanation tonometry was within normal limits in both the eyes. Fundus examination was within normal limits in both the eyes. A right side Horner's syndrome diagnosis was considered as the patient had the classic triad of the right eye mild ptosis, miosis and mild apparent enophthalmos though he did not have anhidrosis.

Management

In view of sudden onset incomplete painful Horner's syndrome an magnetic resonance imaging (MRI) of brain and orbit along with magnetic resonance angiogram (MRA) was advised. MRA showed a focal dissection of the distal cervical internal carotid artery (Figure 5). The patient was referred to an interventional radiologist who started the patient on oral antiplatelet agents. At 2 weeks of follow-up, the patient was asymptomatic and when a repeat MRA was done the focal dissection had resolved. At 1-month follow-up, patient was still asymptomatic for any neurological complications.

Discussion

The various ophthalmological manifestations of internal carotid artery dissection described in the literature (in order of the frequency) are painful Horner syndrome, transient monocular visual loss, ischemic optic neuropathy, ophthalmic artery occlusion, central retinal artery occlusion, ischemic ocular syndrome and oculomotor nerve palsies.[4] Two third of patients with ICA dissection have ophthalmologic symptoms or signs, which are the presenting features of the dissection in more than half of such cases.[4] Horner's syndrome is secondary

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Figure 1: Right eye palpebral fissure height -10 mm.

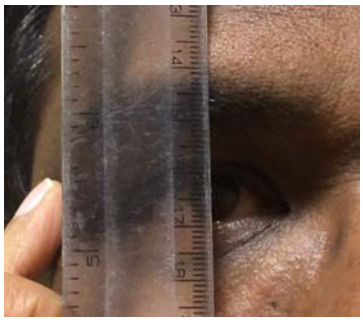

Figure 2: Left eye palpebral fissure height–12 mm.

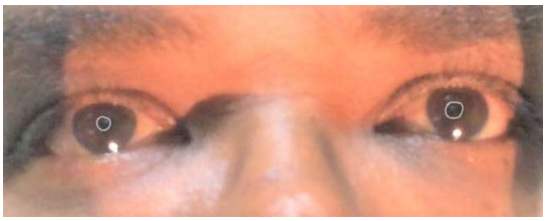

Figure 3: Pupil size in bright illumination.

to the damage to the sympathetic pathway distal to the superior cervical ganglion. Pain is presumed to be the result of ischemia (through the vasa nervorum) or compression (by the enlarged occluded carotid) of the pericarotid sympathetic fibers.[1] It is a referred pain to the orbital area originating from the internal carotid artery area. Pain has been reported in up to 90% of cases with ICA dissections. Such pain involves the head in 70% of cases, the neck in 20%, and/or the face in 10%.[4] According to this 1998 study looking at the complete spectrum of ophthalmic manifestation of the ICA dissection, ophthalmologic symptoms or signs preceded a non-reversible ocular or cerebral infarction in one-third of patients, with the majority having a stroke within the first 2 weeks after the onset of ophthalmologic symptoms or signs.[4] This suggests that any potential preventive treatment should be initiated as early as possible after the onset of the first symptoms. Treatment initiation up to 1-month after the onset of symptoms has shown to be beneficial.[5] The ophthalmic signs and symptoms are not specific for ICA dissection and are also seen with carotid diseases like atheroma.[6] But, such

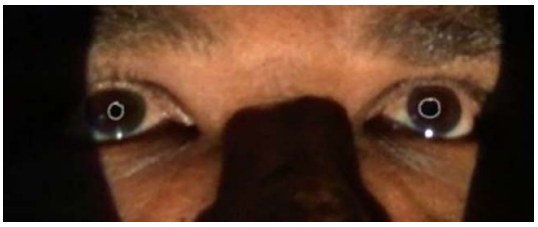

Figure 4: Pupil size in dim illumination.

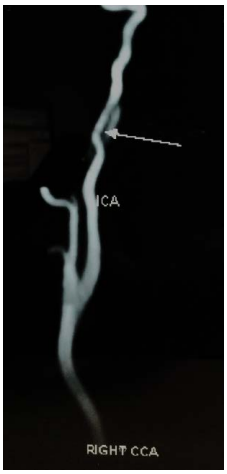

Figure 5: MRA showing focal dissection of the distal part of the ICA.

symptoms occurring in a young patient with associated pain should alert an ophthalmologist for early imaging and referral.

Conclusion

Sudden onset painful Horner's syndrome needs an urgent radiological evaluation to avert a stroke.

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