

Sir,
Recurrent isolated sixth nerve palsy secondary to an intracavernous carotid artery aneurysm

We report the first case of a recurrent isolated painless sixth nerve palsy in a 60-year-old lady secondary to a large saccular aneurysm of the intracavernous carotid vasculature. This case demonstrates that recovery of an isolated sixth nerve palsy in a patient with presumed vasculopathic risk factors does not exclude a compressive lesion and may necessitate further investigation.

Case report

A 60-year-old lady was initially referred with a 6-week history of horizontal diplopia, which had resolved spontaneously when seen in clinic. Her only significant past history of note was medically controlled hypertension. Ocular and neurological examinations were normal. Blood tests, other than an elevated cholesterol level of 6.0 mmol, were normal. The presumed diagnosis was a resolved sixth nerve palsy of microvascular origin. After 3 months, she re-presented with a painless right sixth nerve palsy, which again completely recovered spontaneously. After 18 months, she experienced a further episode of a painless, isolated right sixth nerve palsy (Figure 1). An MRI scan and subsequent angiography were performed which revealed a large right intracavernous carotid aneurysm (Figure 2). Neurosurgical opinion was to manage the aneurysm conservatively. Her sixth nerve palsy partially recovered before experiencing a further reoccurrence, whereby she subsequently received botulinum toxin injection into her right medial rectus muscle with a good result.

Comment

The majority of sixth nerve palsies in older adults are attributed to presumed microvascular disease or are of unknown cause.^{1,2} Up to 7% of sixth cranial nerve palsies are reportedly related to an intracerebral aneurysm¹⁻⁴ although the majority of these were accompanied by other cranial nerve palsies and additional neurological symptoms and signs. Recurrent isolated sixth nerve palsies of nonmicrovascular origin are rare. They have been associated with immunisation and viral illness in children,⁵ Rathke's pouch cyst³ and are known to occur in patients with skull base tumours.⁶ Hamilton and Lessell⁷ reported five cases of idiopathic recurrent isolated unilateral lateral rectus muscle palsy in adults.

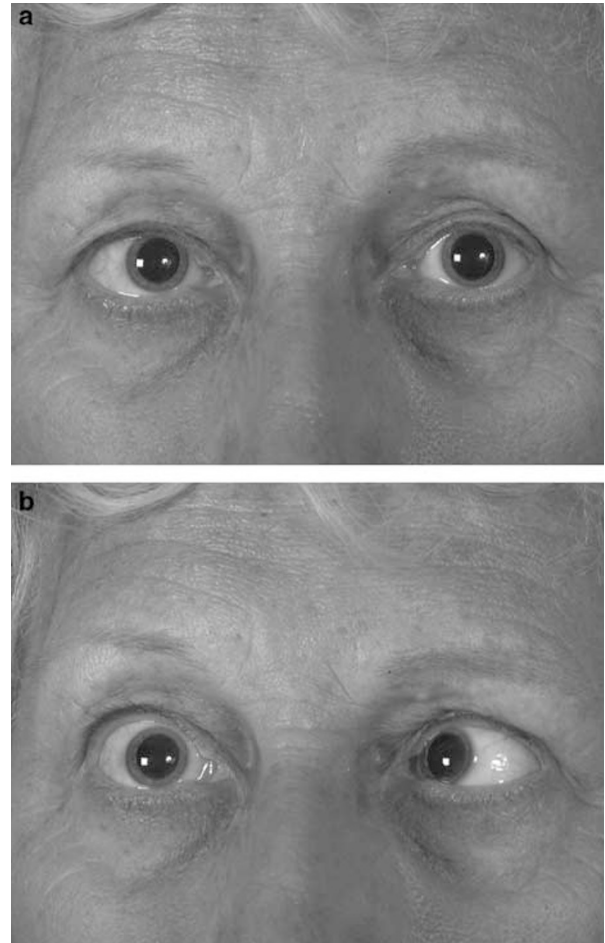


Figure 1 (a and b) Right lateral rectus palsy.

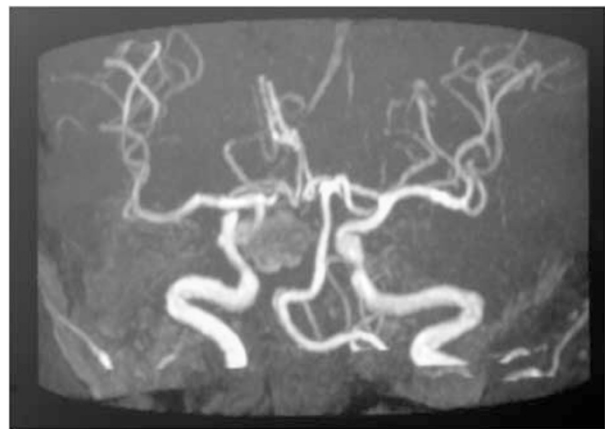


Figure 2 MRI showing large right intracavernous carotid artery aneurysm.

Dolichoectasia of the ipsilateral cavernous carotid artery has been associated with a single episode of⁸ and a persistent⁹ sixth nerve paresis, and was also identified as the cause in a 59-year-old man who experienced

multiple recurrent unilateral sixth nerve paresis.¹⁰ Dolichoectasia is a fusiform dilatation of an artery whereas an aneurysm is a focal dilatation of an artery with a neck. To the best of our knowledge, we report the first case of a recurrent isolated sixth nerve palsy secondary to a saccular aneurysm of the intracavernous carotid vasculature.

Mechanisms by which an aneurysm may cause abducens nerve dysfunction include direct compression due to the close proximity of the nerve to the carotid artery in the cavernous sinus and ischaemia secondary to intraluminal thrombus formation and blockade of the vasa nervosa. Exactly what causes nerve dysfunction followed by spontaneous recovery despite the continued presence of the aneurysm is unknown, but similar mechanisms are described in cases of spontaneous aberrant regeneration of the oculomotor nerve¹¹ in patients with untreated slow growing compressive lesions of the cavernous sinus. As the abducens nerve innervates only one muscle, regeneration may restore normal function.

Although it is feasible that the repeated recurrence was simply a microvascular angiopathy with reportedly 31% of individuals with vasculopathic sixth nerve palsies experiencing recurrent palsies,¹² or secondary to mechanisms involving interruption of the blood supply to the nerve unrelated to compression. We feel that the proximity of such a large lesion, makes it likely that it was the underlying cause.

General neuro-ophthalmic opinion advocates observation of a sixth nerve palsy in patients with vasculopathic risk factors. However, a recent paper suggests that systemic hypertension alone is not a significant independent risk factor for sixth nerve paresis.¹³ This case demonstrates that the recovery of a painless isolated sixth nerve palsy in a patient with presumed vasculopathic risk factors does not exclude a compressive lesion and necessitates further investigation.

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