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LETTER TO THE EDITOR

Posterior ciliary arterial system occlusion after treatment for epistaxis

Occlusion du système vasculaire ciliaire postérieur après traitement pour épistaxis

Introduction

Embolization of a distal branch of the maxillary artery is a common treatment for refractory epistaxis after failure of non-invasive techniques [1].

We report a case of iatrogenic cilioretinal artery occlusion and choroidal ischemia after embolization of the sphenopalatine artery.

Case Presentation

A 58-year-old man was referred for a severe visual loss in the left eye at awakening from general anesthesia. He had undergone a selective embolization of the left sphenopalatine artery with 300—500 μm EmboGold® Microspheres for an idiopathic refractory posterior epistaxis. The procedure was performed via the left femoral artery through the left external carotid and the left maxillary artery. The personal medical history revealed only a well-balanced type 2 diabetes mellitus. Physical examination revealed a left relative afferent pupillary defect. There was no limitation of extraocular eye movements. Best-corrected visual acuity was 20/20 in the right eye and 20/400 in the left eye. The intraocular pressure was bilaterally normal. Slit-lamp examination of both anterior segments was unremarkable. Fundus examination showed rare microaneurysms indicating moderate diabetic retinopathy in both eyes, and a pale edema in the inter-papillo-macular area, sign of cilioretinal artery occlusion in the left eye (Fig. 1). There was no embolism in intraretinal circulation. Fluorescein angiography revealed delayed cilioretinal artery perfusion (Fig. 2) and extensive areas of choroidal hypoperfusion (Fig. 3).

Discussion

Epistaxis has a high prevalence in the adult population is mostly primary or ''idiopathic'' without any underlying disease, and can be serious and life threatening [1]. Most cases of epistaxis arise from the anterior septal area and can be managed by conservative treatment. However, in approximately 5% of cases, the origin of the epistaxis is more posterior on the nasal cavity, and it may require

Figure 1. Color picture of fundus of the left eye showing cilioretinal artery occlusion.

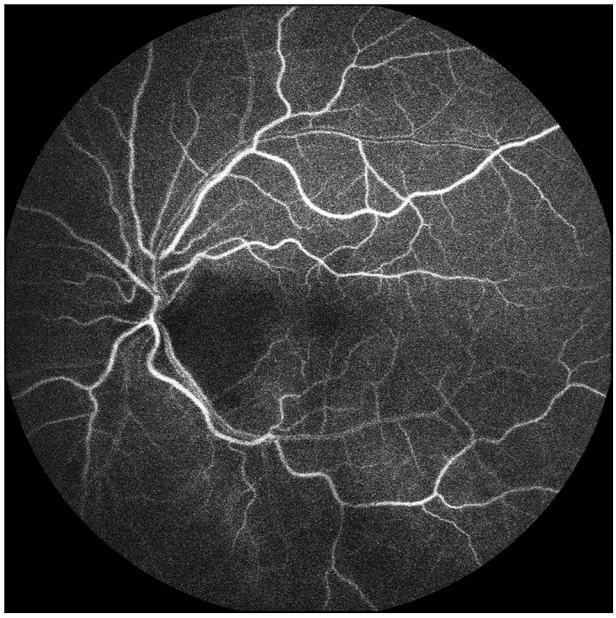

Figure 2. Fluorescein fundus angiogram of the left eye in the arteriovenous phase, showing delayed cilioretinal artery perfusion.

Figure 3. Fluorescein fundus angiogram of the left eye in the venous phase, showing extensive areas of choroidal hypoperfusion.

surgical treatment or arterial embolization [2,3]. In a varied way, the blood supply of the nasal cavity is from both the internal carotid artery via the anterior and posterior ethmoidal arteries, and the external carotid artery via distal branches of the internal maxillary artery including the sphenopalatine artery [3]. The sphenopalatine artery is the artery usually responsible for refractory epistaxis, and can be occluded surgically through an endonasal approach or be embolized [1]. Arterial embolization is the treatment of choice for severe refractory epistaxis but is less widely used than surgery and there remains debate on the agent and the size of the embolic, and the number of vessels to embolize [1,3]. Its success rate is high but there is a wide range of potential complications including cerebrovascular accident and monocular blindness in between 0 and 2% of cases [1—4]. Indeed, a variable number of anastomoses exist between branches of the internal and external carotid arteries carrying a risk of neurological accidents when embolic material inadvertently enters the internal carotid artery or its first collateral branch, the ophthalmic artery, in case of increased pressure and retrograde flow during embolization [1,2]. The ophthalmic artery is a particular source of numerous, hazardous and dangerous anastomoses with branches of the external carotid artery. For example, anterior and posterior ethmoidal arteries have anastomotic connections with the sphenopalatine artery in the ethmoidal sinus [4,5]. The ophthalmic artery also gives rise to lateral and medial posterior ciliary arteries that supply the choroid. At variable distance from the eye, the posterior ciliary arteries divide in short posterior ciliary and long posterior ciliary arteries [6]. The short posterior ciliary arteries pierce the sclera near the optic nerve and supply the choroid up to the equator [5,6]. The long posterior ciliary arteries pierce the anterior sclera on sides and supply the preequatorial choroid [5,6].

Finally, cilioretinal arteries arise either directly from the choroid or from one of the short posterior ciliary arteries, providing additional or alternative blood supply to the retina [7]. This case shows that posterior ciliary arterial system occlusion combining cilioretinal artery occlusion and choroidal hypoperfusion can occur as a complication of epistaxis treatment.

Conclusion

Intractable posterior epistaxis is a good indication for embolization of the sphenopalatine artery. Full knowledge and recognition of the anastomotic connections between external carotid artery and internal carotid artery system are critical in preventing major persistent complications like monocular blindness. Ophthalmologists and otorhinolaryngologists need to be aware of the risk of this rare but possible complication.

Disclosure of interest

The authors declare that they have no competing interest.

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