LETTER TO THE EDITOR

Ophthalmic artery occlusion as a complication of infectious endocarditis

Oclusion de l’artère ophtalmique compliquant une endocardite infectieuse

Introduction

Ophthalmic artery occlusion is a rare but serious stroke commonly due to embolization that causes infarction of the retinal tissue. The ocular prognosis is generally bad. This acute ocular condition may be associated with systemic disorders leading to serious complications and death.

Case report

A 62-year-old man, with no medical history, was admitted in intensive care unit for renal and hepatic failures secondary to acute infectious mitral endocarditis.

Transesophageal echocardiography detected oscillating intracardiac masses suggesting vegetations on the mitral and aortic valves in size of 1.0 cm and serious mitral, aortic and tricuspid regurgitations (Fig. 1). Blood cultures were positive to streptococci and biology revealed thrombophilic disorders. Abdominal CT, performed because of abdominal pain, detected splenic infarction.

After 20 days of antibiotic therapy, the patient was referred because of pain, sudden and complete loss of vision in the left eye three weeks prior to examination. Ophthalmic examination revealed in the left eye no light perception, ophthalmpoplegia (Fig. 2) and non-reactive mydriasis. Ruberosis iridis was not noted. Fundoscopy showed remarkable edema of the entire left retina and whitened retinal vessels. A cherry-red spot was not noted (Fig. 3). The opposite eye examination was normal (Fig. 4). Fluorescein angiography revealed impairment of retinal vascular and choroidal flows (Fig. 5). Carotid auscultation revealed no bruit and brain scan was normal. Because three weeks had passed since the onset of symptoms, no treatment was given. The patient died because of heart failure resulting from valvular insufficiency.

Comments

Acute retinal artery occlusion is a fairly uncommon condition that may cause severe vision loss. It is a true ophthalmic emergency, in that every minute that elapses increases the chances of irreversible retinal damage [1]. It is often associated with critical cerebrovascular and cardiovascular disease that may require systemic treatment [2].

Embolism is the most common cause [3]. Retinal emboli may consist of a variety of materials including platelet aggregates, cholesterol, calcium, fat, parasites, air and even prosthetic heart valves. The platelet-fibrin and cholesterol emboli typically arise from atheromatous plaques at the carotid bifurcation or the internal carotid artery, whereas the origin of calcific and septic emboli is cardiac valvular [4].

Cardiologic check is necessary to search for the source of emboli. Cardiac abnormalities were detected by echocardiography in a series of 11 young patients with central retinal artery occlusion and branch retinal artery occlusion included mitral valve thickening, left ventricular hypertrophy, thrombus with bicuspid aortic valve and mitral valve prolapse [5].

Less often, a retinal artery occlusion may be caused by a thrombus, vasculitis, traumatism, sickle cell disease, clotting disorders, oral contraceptives or damage from radiation treatments.

The site of the pathologic process determines whether the obstruction will be a central retinal artery obstruction (CRAO), a branch retinal artery obstruction, a cilioretinal artery obstruction, an ophthalmic artery obstruction or a cotton-wool spot.

In 1859, Van Graefe first described central retinal artery occlusion as an embolic event to the central retinal artery in a patient with endocarditis [6].

The embolus is often interpreted as a warning sign of cardiovascular disease elsewhere the finding of a retinal arterial obstruction merits a complete systemic workup to look for etiologic factors.

The sudden loss of vision may be the first and the only symptom of the disease [7—9]. Ophthalmologists should be aware that thorough investigations of every young patients with retinal vascular disease are necessary to rule out underlying severe systemic disorders [8].
have to ask about any medical problems that could predispose to embolus formation (atrial fibrillation, endocarditis, coagulopathies, atherosclerotic disease, hypercoagulable state).

Approximately 5% of patients with what appears to be a CRAO have in reality an acute ophthalmic artery obstruction. This event is responsible for an interruption of both retinal and posterior ciliary circulations. The visual prognosis, in this entity, is usually worse.

Funduscopy generally reveals intense retinal opacification, resulting from inner and outer retinal ischemia, that may extend beyond the posterior pole. A cherry-red spot is absent, because of choroidal compromise and probable retinal pigment epithelial or choroidal opacification, or both, in about 40% of eyes. In the remainder, some degree of a cherry-red spot can be seen. It is presumed that the choroidal hypoperfusion may have improved or been insufficient to produce an acute infarction of the retinal pigment epithelium and outer retina in these instances. A cherry-red spot may be initially absent, but then appear over a several-day period as choroidal perfusion improves.

The causes of acute ophthalmic artery obstruction are generally similar to those of central retinal artery occlusion. It may result from systemic cardiovascular diseases. Endocarditis should be considered as a possible etiology in virtually all patients who present signs or symptoms of systemic arterial embolization [10]. It can occur even after appropriate therapy is well underway [10].

As is in our case, infective endocarditis can lead to ophthalmic artery emboli. To our knowledge, this is the first case of ophthalmic artery occlusion secondary to infective endocarditis. Systemic embolization is an important complication and occurs in 22 to 50% of cases of infective endocarditis. Valvular vegetations can release emboli and lead to episodes of amaurosis fugax or retinal artery occlusion [7]. It is being seen more frequently due to the prolongation of life afforded by antibiotics and cardiac valve replacement surgery [10].

Ocular treatment is generally ineffective for ophthalmic artery occlusion, and the visual prognosis is usually grim.
Conclusion

Ophthalmic artery occlusion is a rare complication of bacterial endocarditis. Early detection and appropriate treatment of this disease can be lifesaving. Thus, every patient applying for an embolic phenomenon should be assessed by taking infective endocarditis into consideration.

Disclosure of interest

The authors declare that they have no conflict of interest concerning this article.

References


C. Wathek*, O. Kharrat, A. Maalej, M.F. Nafaa, R. Rannen, S. Gabsi
Department of Ophthalmology Military Hospital of Tunis, Montfleury, 1008 Tunis, Tunisia

*Corresponding author. 6, rue Kebili-lebardo, Tunis, Tunisia.

E-mail address: wcheima@yahoo.fr (C. Wathek)

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