Case report

Occlusion of the central retinal artery complicating a thrombosed abdominal aortic aneurysm: an exceptional complication

ABSTRACT

We report the case a patient who presented a sudden decrease in visual acuity of the right eye secondary to an occlusion of the central retinal artery. In addition, the patient complained of intense abdominal pain for which a CT scan was performed and it revealed a thrombosed aneurysm of the abdominal aorta so the diagnosis retained is occlusion of the central retinal artery complicating a thrombosed aneurysm of the abdominal aorta .Occlusion of the central retinal artery (CRAO) is a very rare vascular pathology . It is often secondary to cardiovascular pathology but it can also be a complication of a distant vascular anomaly, hence the interest of an exhaustive etiological diagnosis and the elimination of vascular emergencies such as thrombosed aneurysms of an artery whatever its location such as abdominal or thoracic aorta , especially in the presence of warning signs. The scientific interest of our case is that the occlusion of the central artery of the retina is rare and exceptionally can complicate a thrombosed aneurysm of the abdominal aorta which is a vital emergency

Keywords: Occlusion of the central retinal artery , thrombosed aneurysm*, aortic aneurysm*

1. INTRODUCTION

Occlusion of the central retinal artery (CRAO) is a very rare vascular pathology (1). It is often secondary to cardiovascular pathology. The most frequent etiology is atheroma of the carotid artery(2), but it can also be a complication of a distant vascular anomaly such as thrombosed abdominal aortic aneurysms, sending emboli that can lead to the occlusion of the ocular vessels(3), hence the interest of a broad diagnostic work-up. We report the case of a patient with an occlusion of the central retinal artery complicating a thrombosed abdominal aortic aneurysm.

2. CASE REPORT

We report the case of a 50-year-old patient, hypertensive, who presented to the emergency department with sudden decreased vision in the left eye. The best-corrected visual acuity was limited to luminous perception in the left eye and 10/10 in the right eye . Slit lamp examination found a relative afferent pupillary deficit in the left eye .The fundus of the left eye found a diffuse retinal edema with a cherry-red aspect of the macula evoking an occlusion of the central retinal artery (Figure 1). A cardiovascular check-up was normal (heart echo and echodoppler of the neck vessels). An abdominal CT scan was requested by the gastrologist to explore the abdominal pain, which revealed a thrombosed abdominal aortic aneurysm(Figure 2). The diagnosis of occlusion of the central artery of the retina complicating a thrombosed abdominal aortic aneurysm was retained. The thrombosed abdominal aortic aneurysm was responsible for emboli leading to the occlusion of the central artery of the retina. The patient was given on antiplatelet medication and was operated on by vascular surgery for the thrombosed abdominal aortic aneurysms with the placement of a stent graft.

3. DISCUSSION

Central retinal artery occlusion (CRAO) is a rare vascular pathology, with an estimated frequency of 1 in 10,000 (4). CRAO most often affects subjects in their sixties. The accident is bilateral in only 1 to 2% of cases. The patients describe a sudden decrease in visual acuity. Examination of the eye reveals a white, painless eye. The visual acuity is collapsed,

most often limited to a luminous perception. The pupil is in mydriasis areflective(4). At the fundus, in the first moments, the retina can still have a normal aspect, but there is a diffuse narrowing of the arterial caliber. It is only in the following hours that a whitish retinal ischemic edema appears, translating the ischemic suffering of the internal layers of the retina. The foveola, which is only vascularized by the choroid, keeps its normal coloring and appears redder in contrast with the rest of the ischemic retina ("cherry-red spot of the macula")(4).

The fluorescein angiography is not essential for diagnosis and should not delay the initiation of treatment. It shows an extreme delay in perfusion of the branches of the central retinal artery and a prolongation of the retinal arteriovenous filling time(4). The causes can be classified in several major classes according to the mechanism involved: embolisms; thrombosis or coagulation disorders (5).The most frequent emboligenic pathologies are: carotid atheroma, carotid maneuvers or a postoperative context (carotid endarterectomy); emboligenic cardiopathies.much more rarely, lipidic embolisms consecutive to a bone fracture or tumor embolisms (myxoma of the atrium).The second mechanism is thrombosis ,it can be secondary to Horton's disease and systemic diseases, such as systemic lupus erythematosus, Wegener's disease, Takayashu's disease, Kawasaki's disease and Churg-Strauss syndrome. Lastly, they can be linked to coagulation disorders (resistance to activated protein C, deficiency of protein C, protein S or antithrombin); antiphospholipid syndrome; hyperhomocysteinemia)(5). The etiologies mentioned above are the most frequent, hence the interest of an exhaustive etiological diagnosis and the elimination of vascular emergencies such as thrombosed aneurysms of an artery whatever its location such as abdominal or thoracic aorta , especially in the presence of warning signs (6;7) . The thrombosed aortic aneurysm is responsible for emboli leading to the occlusion of vessels as Central retinal artery (8). The thrombosed abdominal aortic aneurysm was responsible for emboli leading to the occlusion of the central artery of the retina .The spontaneous evolution is almost always unfavorable in the absence of a rapid repermeabilization, the papilla becomes pale, atrophic and the retinal arteries become sparse, filiform, and the internal layers of the retina atrophy(9). The treatment of OACR remains disappointing. The objective of all the proposed treatments is to obtain a arterial repermeabilization as soon as possible before the appearance of definitive ischemic retinal lesions : hypotonizing treatment; vasodilator treatment and anticoagulant treatment(9).all these treatments are not effective and only the fibrinolytic treatment by intravenous or intra-arterial catheterization of the ophthalmic artery which is really effective(10), but it must be initiated very early and the etiological treatment is necessary for preventing the Central retinal artery occlusion (CRAO) of the other eye ant to save the life of the patient because the etiology can be an emergence pathology vascular as in our case .

4. CONCLUSION

Central retinal artery occlusion (CRAO) is one of the rare true emergencies in ophthalmology. Indeed, not only is visual function threatened in the very short term, but it can also be a sign of an underlying systemic pathology. This is why the etiological assessment must be exhaustive and eliminate a vascular emergency such as an aneurysm or stenosis of the abdominal aorta, especially in front of warning signs as in our case.

5.Figures

Figure1: The fundus of the left eye found a diffuse retinal edema with a cherry-red aspect at the macula evoking an occlusion of the central retinal artery.

Figure 2: An abdominal CT scan revealed a thrombosed abdominal aortic aneurysm (Arrow).

CONSENT

The patient has given their informed consent for the case report to be published.

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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