

Retinal artery occlusion



Etiology

Postoperative visual loss.

Retinal artery occlusion (RAO) is rarely seen as a [complication](#) in patients undergoing [carotid artery stenting](#) (CAS); hence, its characteristics have not been documented in detail.

A study of An et al. aimed to investigate the [incidence](#) of this complication and the related [risk factors](#), focusing on differences in [ophthalmic artery](#) (OA) supply (whether by the [external carotid artery](#) or [internal carotid artery](#) [ECA or ICA]) prior to [CAS](#) procedures.

They retrospectively examined 342 patients who underwent CAS for severe and/or symptomatic [carotid artery stenosis](#) between January 2009 and December 2017. Cumulative medical records and radiologic data were assessed. RAO was confirmed by photography and fluorescent angiography of the [fundus](#), which were performed by an ophthalmologist. In all patients, distal filter systems of various types were applied as cerebral protection devices (CPDs) during procedures. Univariate and multivariate analyses were conducted to identify the risk factors for RAO after CAS.

Symptomatic RAO was observed in six patients (1.8%), of which five (6.8%) were ECA-dominant group members (n = 74). In a binary logistic regression analysis, OA supply by the ECA (odds ratio [OR], 9.705; 95% confidence interval [CI], 1.519-62.017; p = 0.016) and older age (OR, 1.159; 95% CI, 1.005-1.336; p = 0.041) were identified as significant risk factors in patients with RAO after CAS. ECA-supplied OA was also associated with the severity of ipsilateral ICA stenosis (p = 0.001) and ulcerative plaque (p = 0.021).

In procedures performed using ICA distal filtering CPD systems, RAO as a complication of CAS (performed for severe stenosis) showed a relationship to ECA-supplied OA. For older patients, simultaneous use of ICA-ECA CPDs might help prevent such complications ¹⁾.

Case reports

A 50 year-old man on immunosuppressive agents presented with left eye vision loss, periorbital swelling, pain, and ophthalmoplegia. The patient was clinically found to have a central retinal artery and vein occlusion. A CT scan was performed which demonstrated intraorbital fat stranding, however the patient lacked sinus disease. The etiology of the orbital infection was held in question. The area

was debrided in the operating room, and the specimen demonstrated group A streptococcal species consistent with necrotizing fasciitis. Periorbital necrotizing fasciitis should be suspected in patients with rapidly progressive orbital symptoms without sinus disease as lack of surgical intervention can result in poor outcomes. The unusual aspect to this case is the mechanism of vision loss, as the authors hypothesize that there was vascular infiltration of the infection resulting in the central retinal artery occlusion and central retinal vein occlusion which have not been previously reported secondary to necrotizing fasciitis of the orbit ²⁾.

Elkordy et al. reported a patient with an unruptured [ophthalmic artery aneurysm](#) which treated with endovascular [coiling](#) and was complicated by [blindness](#) due to OphA thromboembolic occlusion after the [procedure](#). The OphA successfully recanalized using local intra-arterial [fibrinolysis](#) with complete regain of [visual acuity](#). The risk of visual loss due to thromboembolic complications cannot be ignored during the endovascular coiling of the OphA aneurysm despite good retrograde flow during OphA occlusion test using a balloon catheter. Rapid intervention is required for recovering visual disturbance in such a situation ³⁾.

References

¹⁾

An SJ, Cho YD, Lee J, Mun JH, Yoo DH, Kang HS, Yang YJ, Han MH. Symptomatic Retinal Artery Occlusion after Angioplasty and Stenting of the Carotid Artery: Incidence and Related Risk Factors. Korean J Radiol. 2019 Nov;20(11):1546-1553. doi: 10.3348/kjr.2019.0030. PubMed PMID: 31606959.

²⁾

Sultan H, Malik A, Li HK, Chévez-Barrios P, Lee AG. Necrotizing Fasciitis of the Periorbital Region Complicated by Combined Central Retinal Artery Occlusion, Central Retinal Vein Occlusion, and Posterior Ciliary Occlusion. Ophthalmic Plast Reconstr Surg. 2017 May/Jun;33(3):e75-e76. doi: 10.1097/IOP.0000000000000770. PubMed PMID: 27556345.

³⁾

Elkordy AM, Sato K, Inoue Y, Mano Y, Matsumoto Y, Takahashi A, Tominaga T. Central Retinal Artery Occlusion after the Endovascular Treatment of Unruptured Ophthalmic Artery Aneurysm: A Case Report and a Literature Review. NMC Case Rep J. 2016 May 19;3(3):71-74. doi: 10.2176/nmccrj.cr.2015-0243. eCollection 2016 Jul. PubMed PMID: 28664002; PubMed Central PMCID: PMC5386170.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=retinal_artery_occlusion

Last update: **2024/06/07 02:49**

