Carotid Falciform Optic Neuropathy

Several recent reports have implicated vascular ectasia and vessel contact in dysfunction of the visual apparatus. A subset of patients with prechiasmatic visual deterioration have an ectatic internal carotid artery (ICA) that displaces and flattens the optic nerve (ON) rostrally as the ON exits the skull base. Woodall and Alleyne from The Medical College of Georgia at Augusta University, Augusta, Georgia, USA, describe a proposed pathophysiologic mechanism and a straightforward surgical technique for dealing with this problem.

Via an ipsilateral pterional craniotomy, the bony roof of the optic canal is removed. The falciform ligament is opened in parallel to the ON. Adhesions between the ICA and ON are then dissected, and a Teflon pledget is placed between the ICA and ON to complete the decompression.

Patients both in the literature and in this series experienced an improvement in their vision postoperatively.

They propose that 3 mechanisms contribute to this caroticofalciform optic neuropathy: 1) mass effect from ICA ectasia, 2) ON irritation from vessel pulsatility, and 3) indirect compression by the falciform ligament from above. This disease process can be treated safely using standard microsurgical techniques with excellent outcomes [1].

1)
Woodall MN, Alleyne CH Jr. Carotid-Falciform Optic Neuropathy: Microsurgical Treatment. World Neurosurg. 2017 Aug;104:372-375. doi: 10.1016/j.wneu.2017.05.034. Epub 2017 May 16. PubMed PMID: 28526645.