

Concurrent ophthalmic artery occlusion and optic nerve infarction after cosmetic facial filler injection

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A 51-year-old healthy woman who received facial hyaluronic acid filler injections in the glabellar region presented with no light perception (NLP) in her left eye the following week. The patient noted immediate loss of vision after several injections. At initial presentation, she had skin necrosis on the bridge of her nose and forehead. The intraocular pressure was 17 mmHg and a positive relative afferent pupillary defect was observed, with an otherwise unremarkable anterior segment. Fundoscopic examination revealed whitening of the retina, pale edematous disc, marked attenuation, and boxcarring of the retinal vessels, without a cherry-red spot. These findings were consistent with ophthalmic artery occlusion [Fig. 1a]. Optical coherence tomography (OCT) showed profound loss of inner and outer retinal layers [Fig.1b].

Diffusion-weighted magnetic resonance imaging (MRI, b value = 1000), at initial presentation, showed an asymmetric

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Figure 1: Ultra-wide-field fundus photography and optical coherence tomography (OCT) findings at initial presentation (a and b) and at 6-month follow up (c and d). (a) Fundus photography showing retinal whitening, disc edema, and attenuation of retinal vessels without cherry-red spot. (b) Horizontal B-scan OCT of the macular area showing profound loss of all retinal layers. (c) Fundus photography showing widespread retinal atrophic changes with fibrosis, gliosis over disc, and ghost vessels. (d) Horizontal B-scan OCT of the macular area showing atrophic changes

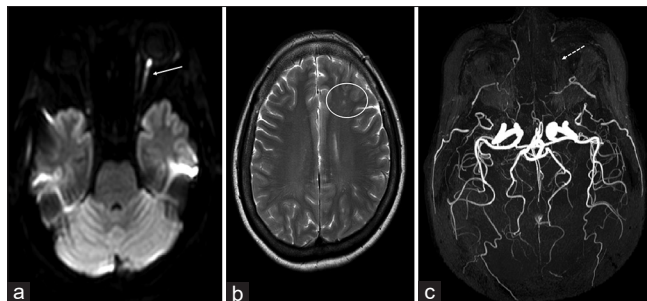


Figure 2: Magnetic resonance imaging (MRI) images at initial presentation. (a) Diffusion-weighted MRI showing abnormally high signal intensity along the left optic nerve (arrow), consistent with optic nerve infarction. (b) Axial view of T2-FLAIR sequence MRI showing multifocal cerebral infarctions (circled). (c) MR angiography showing blockage of the left ophthalmic artery, supraorbital artery, and supratrochlear artery (dashed arrow)

high signal intensity along the left optic nerve (arrow), suggesting reduced diffusivity [Fig. 2a]. Therefore, optic nerve infarction was suspected. An axial view of a T2-FLAIR MRI sequence showed multifocal cerebral infarctions (circled) [Fig. 2b]. Upon MR angiography, the left ophthalmic artery was not delineable immediately after branching from the internal carotid artery. The left supraorbital artery and supratrochlear artery, which are normally delineable, were not visible (dashed arrow) [Fig. 2c]. Hyaluronidase was not administered because it would have been ineffective a week after loss of vision.

At the 6-month follow-up, she still had NLP and fundoscopic examination revealed widespread atrophy and fibrosis of the

retinal pigment epithelium and overlying retina and gliosis over the disc and ghost vessels [Fig. 1c]. OCT indicated atrophic changes in all retinal layers [Fig. 1d].

Discussion

The glabellar region is particularly susceptible to filler injection injury because small vessels, branching from the supratrochlear and supraorbital arteries, are located superficially and their collateral circulation is limited. Complications such as ophthalmic artery occlusion, cerebral infarction, and optic nerve infarction have been reported after facial filler injection in the glabellar region.^[1-3] To mitigate the risk of these complications, slow, superficial aspiration with a small needle before injection has been suggested.^[4]

We present a rare case with concurrent ophthalmic artery occlusion, cerebral infarction, and optic nerve infarction. During the assessment of a patient with complications associated with facial filler injection, physicians should consider these findings and MRI as an evaluation tool.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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