

BLINDNESS AND TOTAL OPHTHALMOPLÉGIA AFTER AESTHETIC POLYMETHYLMETHACRYLATE INJECTION

Case report

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ABSTRACT - Microspheres of polymethyl-methacrylate (PMMA) are exciting new soft-tissue fillers that are becoming increasingly popular for facial rejuvenation. Some reports of side effects of this procedure are basically in respect to dermal reaction, with late-onset granulomatous lesion with giant cells and vacuoles. We report blindness and total ophthalmoplegia after PMMA injection into glabellar area in a healthy woman and review the literature.

KEY WORDS: polymethyl-methacrylate, facial injection, blindness, ophthalmoplegia.

Amaurose e oftalmoplegia total após injeção facial de polimetilmetacrilato: relato de caso

RESUMO - A injeção de polimetilmetacrilato (PMMA) é prática difundida na medicina estética como medida rejuvenecedora. No entanto, a injeção facial do PMMA carrega sérios riscos, especialmente se realizada na região glabellar. Descrevemos o caso de uma mulher que imediatamente após injeção glabellar de PMMA apresentou amaurose e oftalmoplegia total, revendo ainda a literatura pertinente.

PALAVRAS-CHAVE: polimetilmetacrilato, injeção facial, amaurose, oftalmoplegia.

Microspheres of polymethyl-methacrylate (PMMA) are exciting new soft-tissue fillers that are becoming increasingly popular for facial rejuvenation. It provides wrinkle reduction, contour improvement, and volume augmentation when placed into lines and furrows or when used for lip expansion¹. The duration of action varies from 6 months to permanent, depending on the product. Some reports of side effects of this procedure are basically in respect to dermal reaction, with late-onset granulomatous lesion with giant cells and vacuoles².

We report blindness and total ophthalmoplegia after PMMA injection into glabellar area in a healthy woman.

CASE

A 52-year otherwise healthy woman was submitted to aesthetic PMMA injection into the glabellar area for soft-tissue augmentation. The procedure was performed by a plastic surgeon at his office. She immediately complained of severe right ocular pain and visual loss after the injection. She was promptly referred to a neuroophthalmologic examination due to acute visual loss in the

right eye. Visual acuities were 6/6 in the left eye and no perception of light in the right. Biomicroscopy showed white opacity in the right cornea and iris atrophy. Ophthalmoscopy was impossible due to the cornea opacity (Fig 1). Biomicroscopy and funduscopy were unremarkable in the left eye. Ocular movements examination showed a right III, IV and VI nerve palsy (total ophthalmoplegia). The neurological examination was normal. The patient was submitted to a cranial magnetic resonance imaging and a cerebral digital angiography for ophthalmic artery identification; both were normal. She remains blind and with total right ophthalmoplegia ten months after the procedure.

DISCUSSION

Ocular side effects from injections in the nose, mouth, and face have been reported in procedures like turbinate injections, rhinoplasty, infraorbital nerve block, cosmetic injections, and same dental anesthesia (maxillary and mandibular)³. The injections into the glabellar area seem to have a higher risk for ocular complications because of the rich arterial anastomosis in this region. Multiple

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Fig 1. Beyond of dermal reaction at Polymethylmethacrylate site injection observe a right ptosis, divergent strabismus and opacity of cornea and iris (This picture was taken 12 hours after the PMMA injection).

branches of the ophthalmic artery project outside the orbit into the nose and onto the forehead and face, and retrograde flow produced by forceful injection in the peripheral extraorbital branches of the ophthalmic artery to the face and scalp had probably been responsible for ocular accidents following injections in this site.

In our case, we believe that microspheres of PMMA were injected into one of the peripheral branches of the ophthalmic artery or some anastomosing artery. The microspheres traveled retrograde to ophthalmic artery and were anterograde propelled by the patient blood flow to retinal central artery and anterior and long posterior ciliary arteries leading to blindness, corneal and iris ischemia, and total ophthalmoplegia. A similar description was reported by Dreizen et al, although the injected material has been autologous fat⁴. In another report, Egido et al, describe middle cerebral artery embolism aside unilateral visual loss after fat injection into the glabellar area⁵. The authors

postulate that fat material was injected into distal branch of the ophthalmic artery, reaching choroidal and retinal circulation and send emboli into the upper division of the middle cerebral artery.

To the best of our knowledge this is the first report of blindness after injection of microspheres of polymethyl-methacrylate and demonstrates the risk of injections into glabellar area. Physicians who administer aesthetic injections into areas supplied by distal branches of the ophthalmic artery should be aware of this serious and irreversible complication.

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