

# Periocular mass lesions secondary to dermatologic fillers: Report of 3 cases

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## ABSTRACT • RÉSUMÉ

**Objective:** To describe findings in patients who received dermal fillers and later developed peri-ocular mass lesions.

**Design:** Retrospective case series.

**Participants:** Patients who presented with peri-ocular masses secondary to dermal filler use.

**Methods:** Retrospective chart review.

**Results:** Three patients with remote filler injection (hyaluronic acid and polyalkylimide), not volunteered on initial history, presented with peri-orbital swelling and/or inflammation that was suspicious in each case for more serious pathology.

**Conclusions:** It is important for the injecting physician, the ophthalmologist, and the patient to recognize this complication to permit appropriate investigation and management.

**Objet :** Description des résultats chez des patients qui avaient reçu des remplissages dermiques et, par la suite, développé des lésions périoculaires massives.

**Nature :** Rétrospective d'une série de cas.

**Participants :** Des patients qui avaient des masses périoculaires secondaires à l'utilisation un remplissage dermique.

**Méthode :** Revue rétrospective des dossiers.

**Résultats :** Trois patients reçurent une injection distante de remplissage (acide hyaluronique et polyalkylimide). Ils avaient refusé la première fois et s'étaient présentés avec une enflure périorbitaire et/ou un soupçon d'inflammation pathologique plus grave dans chaque cas.

**Conclusion :** Il est important d'inciter le médecin, l'ophtalmologiste et le patient à reconnaître cette complication pour permettre l'investigation pertinente.

Subcutaneous injection of fillers to reduce wrinkles or fill depressions has become increasingly popular among dermatologists, ophthalmologists, plastic surgeons, and even general practitioners. Although newer agents are generally considered to be safe, a variety of complications may occur including hypersensitivity reactions, infection, delayed-onset swelling, and granulomatous foreign body reaction.<sup>1-3</sup>

We report 3 cases of delayed-onset soft-tissue swelling, both with and without granulomatous foreign body reaction. The diagnosis was confirmed histopathologically in patients with a remote history of filler use that presented as periocular masses to the ophthalmologist that initially raised concern for more serious pathology.

no history of autoimmune or allergic disease. Eye examination was unremarkable. On clinical examination, an indurated subcutaneous nodule measuring 3 × 1 cm was found, which was suspicious for lymphoma.

Contrast-enhanced computed tomography (CT) scan confirmed an abnormal mass in the left maxillary soft tissues, replacing the normal subcutaneous fat (Fig. 1A). The mass measured 8 mm in maximal thickness, extending from the zygomatic arch superiorly to the lower lid medially. It had ill-defined margins with no nodular or cystic components and no calcification. The radiologist also suspected lymphoma.

Biopsy was performed. Clinically, the surgical biopsy specimen consisted of an oily material contained diffusely within the soft tissue, making it difficult to remove without debulking the normal orbicularis. Histological examination of the biopsy specimen showed giant cell granulomas surrounding pools of lightly eosinophilic material that stained weakly with Alcian blue and negative with periodic acid–Schiff (PAS) (Fig. 1B). Some necrosis was present. No birefringent foreign material was identified, and stains for organisms were negative. Final diagnosis was foreign body giant cell reaction secondary to an unidentifiable exogenous material.

## CASE REPORTS

### Case 1

An 86-year-old male presented to his ophthalmologist with a growing subcutaneous nodule in the left lower lid and upper cheek for the past 2 months. He was otherwise healthy except for atrial fibrillation and hypertension, with

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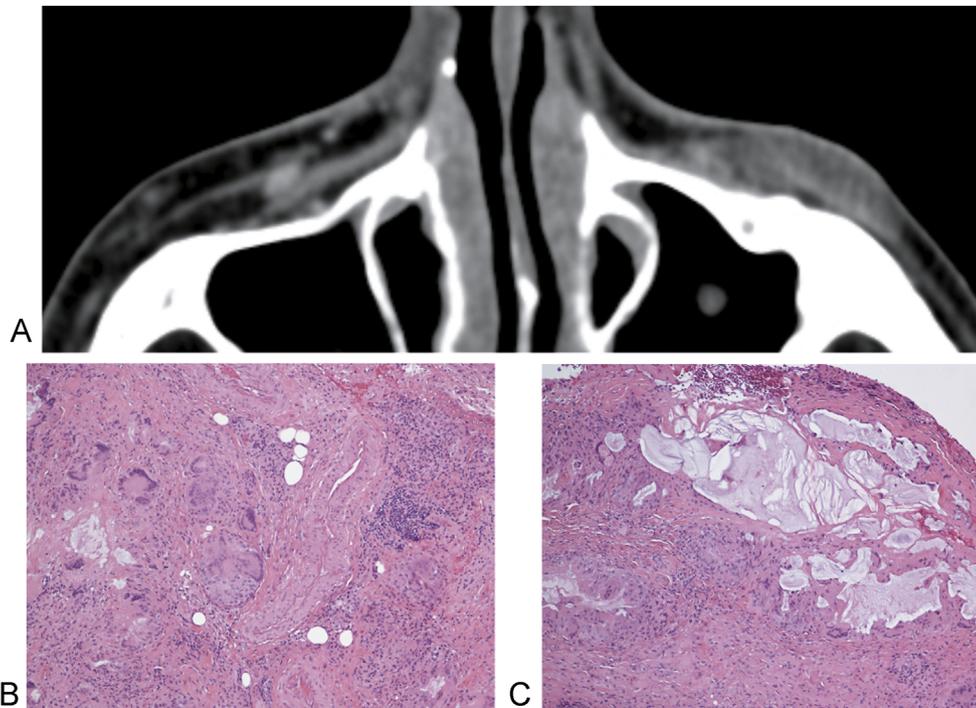


Fig. 1—(A) Contrast-enhanced computed tomography scan of Case 1 showing an abnormal mass in the left maxillary soft tissues, replacing the normal subcutaneous fat. (B, C) Hematoxylin and eosin photomicrographs (original magnification  $\times 100$ ) showing granulomatous inflammation with epithelioid histiocytes and multinucleated giant cells surrounding discrete pockets of exogenous material.

Although the patient did not volunteer a history of filler injection at the initial clinical visit, on follow-up questioning it was found that he had an injection of a polyalkylimide filler (Bio-Alcamid; Polymekon, Brindisi, Italy) several months prior into the nasolabial fold.

### Case 2

A 46-year-old female presented to the ophthalmologist with progressive swelling along the medial right lower orbital rim, with onset 1 month prior. Medical history was significant for prophylactic bilateral mastectomy 7 months previously as she was positive for the *BRCA1* gene. Clinical examination confirmed the presence of an indurated mass along the medial right lower orbital rim extending down into the cheek, but the remainder of the eye examination was unremarkable, with no limitation of extraocular movement and no proptosis. Given the *BRCA1* positivity, the mass was concerning for a related process.

A helical contrast-enhanced orbital CT scan identified a soft-tissue swelling in the right cheek, extending from the skin to the bone of the maxilla, measuring up to 1 cm in thickness and 2.4 cm in transverse dimension (Fig. 2A). Extension supramedially along the side of the nose was noted, with a raised bump in the cutaneous margins. There was no underlying bony destruction. Findings were believed to be nonspecific, possibly inflammatory or hemorrhagic, although a subcutaneous metastasis could not be fully excluded.

Subsequent biopsy demonstrated granulomatous inflammation to a basophilic homogenous foreign

material, reminiscent of hyaluronic acid (HA) filler (Fig. 2B, 2C).

In follow-up, the patient did recall that HA filler (Juvéderm XC; Allergan Inc, Irvine, Calif.) was injected into the nasolabial region approximately 24 months previously.

### Case 3

A 48-year-old female nurses' aide presented to the ophthalmologist with right lower eyelid thickening that had progressed over the past 2 years (Fig. 3D). It was nontender and worse both in the morning and at the end of the day. Her history was significant for bilateral upper and lower lid blepharoplasties 5 years previously, and she was otherwise healthy.

On clinical examination, no masses were palpable, but there was mild, diffuse edema of the right lower lid with no pitting or suggestion of fat prolapse. There was no lymphadenopathy, and the remaining orbital and ocular examinations were normal.

CT scan showed an infiltrate within the fat of the right cheek extending into the superficial inferior orbit (Fig. 3A). She was tried on a brief course of oral tapering prednisone, without relief. A biopsy was performed, which showed dermal filler without inflammation that was positive for Alcian blue, which was believed to be consistent with HA (Fig. 3B, 3C). On further questioning, she also confirmed bilateral filler use in the nasolabial folds 6 years previously, although it was difficult to ascertain which filler material was used.

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