Artefill/Artecoll is a permanent filler containing polymethylmethacrylate (PMMA) microspheres suspended in a solution of 3.5% bovine collagen and 0.3% lidocaine. The collagen component acts as a carrier and composes more than 75 percent of the implant; it is degraded within one to three months of injection and replaced by human fibroblasts and collagen. Approximately half of the implanted volume eventually is replaced, leading to a persistent aesthetic result. Due to the bovine collagen component, patients should have skin testing before injection. Injections should be placed at the dermal-subcutaneous junction. Risks include hypersensitivity reactions, nodules, and delayed granuloma formation, which can occur one to two years after injection.

Case Presentation
A 45-year-old healthy Caucasian woman presented with a one-year history of ‘facial acne.’ The patient reported that lesions started on the cheeks as painful nodules that were warm to touch. Of note, the patient had injections with an unknown filler six months earlier performed by a ‘clinical nurse.’ Prior treatment included a prednisone taper, doxycycline, and cephalexin, all without improvement. Evaluation by a plastic surgeon included full-face CO₂ ablative resurfacing in an attempt to improve cosmesis, which also yielded no improvement. Exam revealed indurated, erythematous discrete and confluent plaques forming sinus tracts and depressed atrophic, pitted scars on both cheeks. The plaques were firm and warm to touch (Figure 1). Differential diagnosis included pyoderma faciale, cystic acne, and foreign body granuloma. Punch biopsy from the left cheek showed granulomatous inflammation in the deep dermis in association with uniform, circular, non-polarizable material consistent with a dermatologic filler (Figures 2 and 3). Changes resembled an Artecoll granuloma.

The pathogenesis for delayed granuloma formation is unknown, and occurs more frequently in PMMA manufactured outside of the US. The incidence of late foreign body granuloma reactions on the face after PMMA injections occur at a rate of 1:800.2 Pathology shows granulomatous inflammation in the deep dermis in association with uniform, circular, non-polarizable material consistent with a dermatologic filler (Figures 2 and 3). Changes resembled an Artecoll granuloma.

Currently there is no standard treatment modality for PMMA filler complications; however, some patients have noted improvement after intralesional kenalog injections.

One of the winning presentations given by dermatology residents at the Cosmetic Surgery Forum in December 2013.

BY SHILPI KHETARPAL, MD, KENNETH TOMECKI, MD, AND STEVEN D. BILLINGS, MD
or excision. There have been several reports with improvement using allopurinol. Allopurinol is a xanthine oxidase inhibitor that acts as a catalyst in the formation of superoxide. Allopurinol and its metabolite oxypurinol act as free radical scavengers. Free radicals play an important role in the pathogenesis of granulomatous diseases and reduction of their amounts could attribute to the mechanism of action leading to reduced granuloma formation in our patient. Our patient was started on 200mg of allopurinol daily then titrated up to 400mg daily after four weeks. She continued on this dose for 24 weeks and continues to have improvement three months after stopping allopurinol.

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