



## Case report

## Orbital, eyelid, and nasopharyngeal silicone oil granuloma presenting as ptosis &amp; pseudo-xanthelasma



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## ARTICLE INFO

## Keywords:

Silicone oil  
Xanthelasma  
Orbit  
Foreign body granuloma  
Baerveldt  
Glaucoma drainage implant

## ABSTRACT

**Purpose:** To highlight the presentation and management of a patient with eyelid, orbital and nasopharyngeal silicone oil migration through a glaucoma drainage implant presenting as pseudo-xanthelasma and ptosis.

**Observations:** A 68-year male presented with unilateral ptosis and presumed xanthelasma. He had a history of glaucoma drainage implant surgery, pseudophakia, and multiple retinal detachment repairs with silicone oil. During ptosis repair it was discovered that his presumed xanthelasma was in fact an eyelid silicone granuloma. Additional work up revealed silicone infiltration of the eyelids, orbits, and nasopharynx, resulting from emulsified silicone oil leakage through his glaucoma valve implant.

**Conclusions and Importance:** Silicone oil may emulsify with time, with potential egress via a glaucoma filtration device. Clinicians should be alert for eyelid, orbital and sinonasal findings that may indicate occult migration.

## 1. Introduction

Silicone oil has been used in ophthalmology for many decades as a retinal tamponading agent. It has been previously reported that silicone oil may migrate out of the eye and into the surrounding subcutaneous tissues. Here we report the first case of silicone oil migration through a Baerveldt implant with subsequent granuloma formation in the eyelid, orbit and nasopharynx.

## 2. Case report

A 68-year-old male with history of bilateral pigment dispersion syndrome, pigmentary glaucoma, and myopia with lattice degeneration, presented to the oculoplastic service with a chief complaint of worsening right upper eyelid ptosis, accompanied by an enlarging superficial yellow lesion in the medial upper eyelid.

Two years previously, he underwent insertion of a Baerveldt implant with subsequent rhegmatogenous retinal detachment. This was repaired via pars plana vitrectomy (PPV) with endolaser photocoagulation and silicone oil insertion. The silicone was later removed and he subsequently underwent cataract extraction with intraocular lens placement. One year later, emulsified silicone was found adjacent to the Baerveldt tube in the anterior chamber, along with elevated intraocular pressure. The remaining emulsified oil was therefore removed via pars plana vitrectomy.

Oculoplastic evaluation revealed visually significant ptosis, dermatochalasis and medial fat prolapse associated with a medial subcutaneous yellow lesion, which was similar in appearance to xanthelasma (Fig. 1a and b). External levator advancement with fat debulking and excision of the eyelid lesion was recommended.

Intraoperatively, multiple spherical, encapsulated, translucent foreign bodies were identified within the anterior orbital fat (Fig. 2). These foreign bodies and surrounding scar tissue extended diffusely throughout the upper eyelid with extension into the orbicularis and subcutaneous planes, corresponding with the region of presumed xanthelasma. The material also extended into the anterior orbit, requiring exploration and foreign body excision.

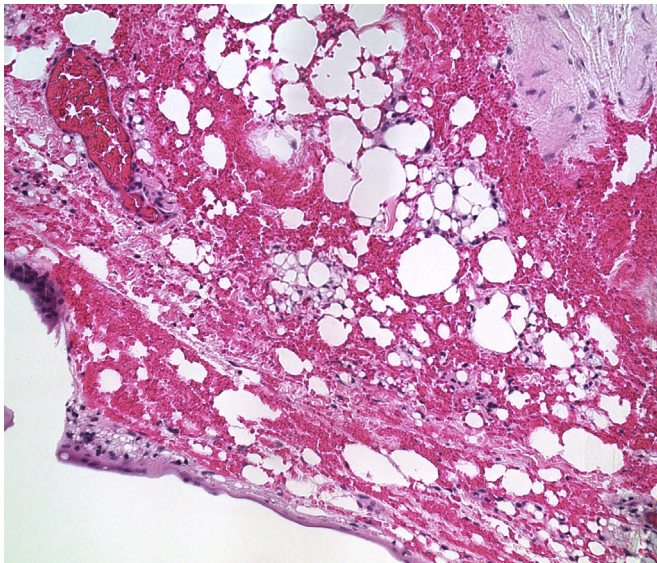
The patient's clinical appearance normalized (Fig. 1c), but post-operative MRI revealed additional round hypointense foci extending into the posterior orbit along the levator palpebrae superioris as well as chronic rhinosinusitis and bilateral polypoid mucosal thickening around the middle meatus of the nasopharynx, presumably representing additional retained silicone (Fig. 3). The patient underwent functional endoscopic sinus surgery and polypectomy, and was found to have bilateral extensive nasal polyposis emanating from the middle meatus (Fig. 4). When the nasal polyps were excised, spherical inclusions clinically and histologically consistent with silicone were identified.

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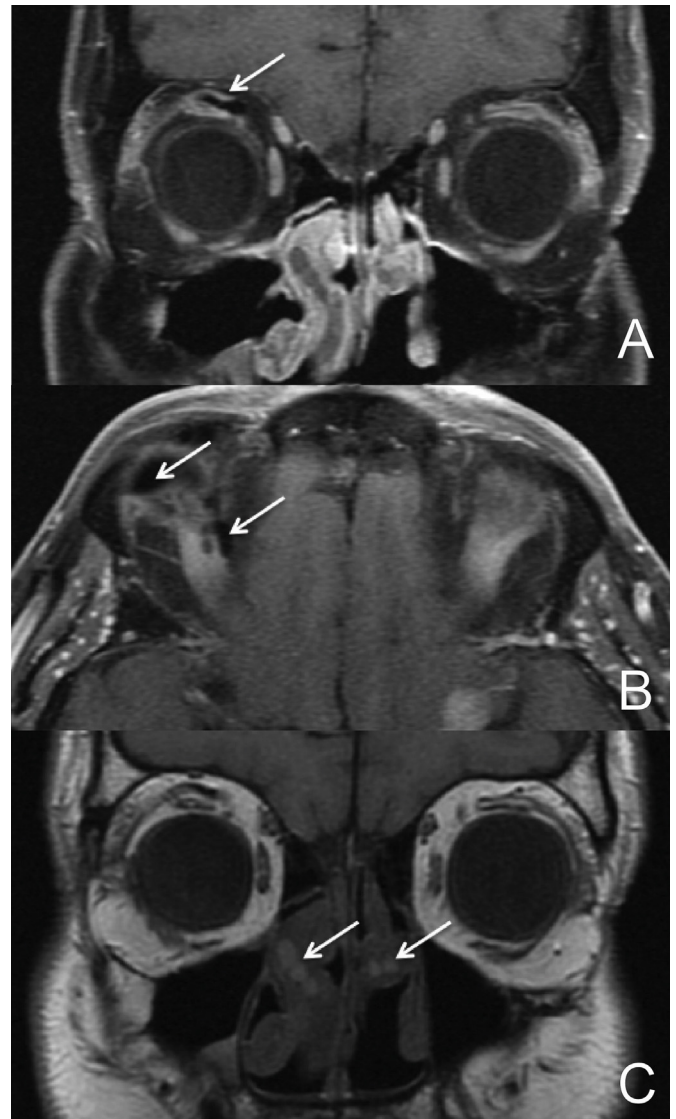
**Fig. 1. External photograph.** Preoperative photographs demonstrating right ptosis, and a medial right upper eyelid subcutaneous yellow mass (a and b). Postoperative photograph demonstrating complete resolution of the ptosis following surgical debulking (c). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)



**Fig. 2. Histopathology.** Sample from the excised skin and muscle of the right upper eyelid, stained with haematoxylin and eosin, displaying several large foreign body granulomas surrounded by vacuolated macrophages consistent with silicone oil.

### 3. Discussion

Silicone oil has been used since the 1960's to treat retinal detachment. The oil has a lower specific gravity than aqueous and vitreous and is thus useful for tamponading free-floating retina to the underlying retinal pigment epithelium when the patient is positioned correctly.<sup>1</sup> Complications of vitrectomy with silicone oil insertion are manifold, and include cataract, elevated intraocular pressure and retinal toxicity.<sup>2</sup> Additionally, several prior reports have detailed the possibility of subconjunctival migration of silicone oil, presumably through sclerotomy



**Fig. 3. Magnetic resonance imaging.** MRI demonstrating hypointensity above the right levator palpebrae superioris in a T1, post-contrast, coronal image with fat saturation (a), hypointensities in the right orbit along the levator palpebrae superioris in a T1, post-contrast, axial image with fat saturation (b), and mild hyperintensities in the right middle meatus in a T1, non-contrast, coronal image (c), consistent with silicone infiltration.

wounds, leading to eyelid swelling, ptosis, and silicone granuloma.<sup>2–6</sup> In one case, subarachnoid migration of silicone through an optic pit was observed.<sup>7</sup> Intracranial migration of silicone without optic pits has also been reported in the literature.<sup>16</sup>

Two previous case reports have detailed orbital migration of silicone through glaucoma drainage implants. Hyung and Min<sup>8</sup> reported subconjunctival migration of silicone oil through a Molteno implant in an aphakic patient, and Nazemi et al.<sup>9</sup> reported orbital and subconjunctival oil migration through an Ahmed valve implant, eventually necessitating orbital exploration. We report here the first case of extensive eyelid, orbital and nasopharyngeal migration of silicone oil through a Baerveldt implant. This device does not have the Venturi flow restrictor found in the Ahmed device, aimed at decreasing postoperative hypotony by limiting aqueous outflow. The Baerveldt is, by contrast, a non-valved device that requires intraoperative flow restriction via external tube ligation by a dissolving ligature or insertion of a suture inside the tube lumen for prevention of early postoperative hypotony due to excessive aqueous humor filtration.<sup>10</sup> The lack of a valve

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