**Myospherulosis as a complication of functional endoscopic sinus surgery: a double case report**

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**Abstract.** Myospherulosis as a complication of functional endoscopic sinus surgery: a double case report. Introduction: Paraffinomas (also known as ‘sclerosing lipogranulomas’ or ‘myospherulosis’) are a widely acknowledged complication of cosmetic paraffin injections but they are rare following functional endoscopic sinus surgery. Case presentations: Our first case features a 45-year-old woman presenting with a peri-ocular swelling two weeks after functional endoscopic sinus surgery. The procedure was complicated by a fractured lamina papyracea. A nasal packing with antibiotic ointment was left in situ. Initially, the inflammation was controlled successfully with corticosteroids but the swelling persisted to this day. Our second case is a 45-year-old man who suffered from a recurrent swelling of the right eyelid after endoscopic sinus surgery. Multiple treatments with oral antibiotics and corticosteroids brought about no improvement. Debulking surgery was performed and a PDS film was placed between the peri-orbita and the bony orbital floor but the swelling recurred. The patient finally consulted a plastic surgeon as a last resort, but the reconstructive procedure only exacerbated the clinical picture. In both cases a biopsy was performed which established the foreign body reaction typical of a paraffinoma. At present, both patients still suffer from this condition. Conclusion: The complete resection of a paraffinoma is seldom possible because of diffuse infiltration and recurrence is very likely. We therefore conclude that paraffin-based ointments should not be used with nasal packing after sinus surgery, especially when there has been a lesion involving the orbital wall.

**Introduction**

We present two separate cases of functional endoscopic sinus surgery (FESS) that were both complicated by the formation of a paraffinoma in the orbit. A paraffinoma (the terms ‘sclerosing lipogranuloma’ or ‘myospherulosis’) consists of a granulomatous foreign body reaction with soft tissue that develops after the injection of the non-absorbable components in paraffin, which is often used as an ingredient in ointment preparations.

This is a widely acknowledged complication of paraffin injections in dermatology and cosmetic surgery. These lesions have also been described in the orbit, eyelids and lachrymal system after oculoplastic procedures, paranasal sinus surgery and rhinoplasty involving the use of paraffin-based ointments. An orbital paraffinoma after endoscopic sinus surgery is an infrequent but severe complication. Clinically, it presents as a firm and painless swelling of the upper and/or lower eyelid. The onset of clinical signs can vary from weeks to several years after the inoculation of paraffin.

**Cases**

**Case 1**

A 45-year-old woman presented with a right-sided peri-ocular swelling that appeared two weeks after functional endoscopic sinus surgery for chronic rhinosinusitis. The procedure was complicated by a fractured lamina papyracea (without manifest orbital fat exposition) and substantial peri-operative bleeding. A nasal packing drenched in antibiotic ointment (Fucidin® 2%) was left in place at the end of the procedure to prevent further bleeding and synechiae. In the immediate postoperative period, a right-sided peri-ocular swelling and ecchymosis were observed and both disappeared during the days that followed.

Two weeks after discharge, a firm, painless, peri-ocular swelling appeared on the right side
to this day. After eight years of follow-up the patient still has a localised swelling that can only be controlled with corticosteroids, which she refuses because of the side-effects.

**Case 2**

A 45-year-old man underwent sinus surgery of the maxillary and ethmoidal sinuses bilaterally, in combination with a septoplasty and a conchotomy of the lower turbinates because of chronic nasal obstruction and nasal decongestant abuse. After the procedure a dissolvable nasal dressing (Sinu-Knit®) with a combined corticosteroid and antibiotic ointment (Terra-Cortril®: hydrocortisone + oxytetracycline) was placed in the middle nasal passages. In the immediate postoperative period, a swelling appeared on the medial side of the right lower eyelid. During the months that followed, the right eyelid swelled repeatedly and multiple treatments with oral antibiotics and corticosteroids were initiated, without improvement. Surgery was therefore performed and a PDS film was placed between the peri-orbita and the bony orbital floor. Unfortunately, the patient continued to suffer from the recurrent but painless swelling of the right eye. Further ophthalmologic examination revealed normal vision and normal extra-ocular movements. Endoscopic examination of the nose and paranasal sinuses showed a discrete mucosal prolapse at the level of the right maxillary sinus.

Further investigation consisted of an ultrasound, an MRI and a biopsy. The ultrasound showed a
conclude that, even in the absence of any significant trauma to the orbital wall, it should be considered as a complication when there is postoperative periocular swelling. Nasal packing impregnated with paraffin-based ointment is often used after endoscopic sinus surgery to control bleeding and prevent synechiae. This may cause the inoculation of ointment in the orbit when the lamina papyracea has been injured. A postoperative intra-orbital haematoma may then spread ointment droplets through small defects in the lamina papyracea into the eyelids and cause a local foreign body reaction.

In the first case, there are sound reasons to argue that the damage sustained by the lamina papyracea and the subsequent haematoma were the chief causes of paraffin inoculation in the orbit. The volume of the paraffinoma was more pronounced anterolaterally to the eye while the 'porte d’entrée' was medial to the eye, suggesting that the spreading haematoma did indeed function as a vector.

In the second case, however, no specific culprit can be identified. We can only assume that minor damage to the orbital wall that is undetectable by the human eye caused this complication. Several authors have reported on the possible role of an idiosyncratic host response in the development of those foreign body reactions, possibly through the lack of enzymes which metabolise mineral oils.

Both of the therapeutic strategies we adopted proved unsuccessful. The first case was treated rather conservatively, by contrast with the aggressive removal in the second case. Revision surgery complicated by poor cosmetic results has been reported and our experiences only confirm this grim outcome since both patients still suffer from this condition to this day.

Histologically, myospherulosis is characterised by giant cell foreign body granulomas with large paraffin-containing vacuoles formed after deparaffination and multinucleated giant foreign body cells, epitheloid histiocytes and variable lymphocytes infiltration.

Discussion

Myospherulosis is a rare complication, but a comparison of the two cases presented allows us to conclude that paraffin-based ointments should not be used with nasal packing after paranasal sinus surgery, especially in the presence of an intra-operative lesion of the orbital wall. The use of nasal packs should probably be avoided for several reasons and we definitely suggest abandoning the

**Figure 4**

MRI showing inflammatory tissue swelling and granulation tissue at the right orbital floor.
use of ointments after endoscopic sinus surgery.\textsuperscript{12} Peri-orbital myospherulosis should be suspected in all cases of intra-operative peri-orbital injury with a peri-orbital haematoma, when paraffin ointment has been used, and when peri-ocular swelling persists or recurs. The diagnosis is confirmed by the characteristic histological picture of a granulomatous foreign body reaction to non-absorbable components of paraffin.\textsuperscript{1} The complete surgical excision of a paraffinoma is effective, but this is seldom possible due to diffuse microscopic infiltration and even migration. We suggest leaving these lesions untreated because of the potential mutilating effects, and avoiding the use under any circumstances of ointments containing paraffin.

References


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