PYOGENIC GRANULOMA FOLLOWING SMART PLUG INSERTION

GRANULOMA PIÓGENO EN TAPONES LAGRIMALES SMART PLUG

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ABSTRACT

Case report: We report the case of a 65-year-old woman with dry eye syndrome who was referred because of a red mass in the internal left canthus. Three years previously two Smart Plugs had been introduced into both lacrimal punctums of that eye. We diagnosed a pyogenic granuloma and removed it. Two weeks later a new granuloma developed so both the granuloma and the punctal plug were removed. The patient became asymptomatic following this latter procedure.

Discussion: A pyogenic granuloma in a Smart Plug punctum is described. This rare complication is generally associated with the use of silicone punctal plugs, being possibly caused by the chronic irritation of the accumulated detritus and necessitating removal of the plug (Arch Soc Esp Oftalmol 2007; 82: 653-656).

Key words: Dry eye, punctal plugs, Smart Plug, pyogenic granuloma, punctal occlusion.

RESUMEN

Caso clínico: Mujer de 65 años, diagnosticada de ojo seco, acude por aparición de tumoración en canto interno con sensación de cuerpo extraño. Tres años antes se le habían implantado tapones lagrimales SmartPlug en ambos puntos lagrimales inferiores. Se apreció un granuloma en el punto lagrimal inferior izquierdo que se extirpó. Dos semanas después presentó una recidiva lo que obligó a extraer el implante quedándose desde entonces asintomática.

Discusión: Estamos ante un granuloma piógeno en un implante punctal SMART PLUG, complicación descrita clásicamente con los implantes de silicona, debido posiblemente a la irritación crónica de los detritus acumulados. Esta complicación obliga a extraer los tapones.

Palabras clave: Ojo seco, tapones lagrimales, Smart Plug, granuloma piógeno, parche punctal.

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INTRODUCTION

Dry eye is a pathology whose etiology is varied and complex. Its symptoms (dryness, reddening, grittiness or foreign body sensation) are derived from an imbalance between the amount or quality of tear production.

Several treatments have been suggested to address this pathology, the most popular one being the use of artificial tears. In those cases where patients are refractory to artificial tears, one possible approach is punctal occlusion, which increases the time of tear stability (1). The drain may be plugged irreversibly by means of cautery, laser treatment or conjunctival graft (2) or else reversibly with a device known as punctal plug.

The use of punctal plugs has proven to be an effective alternative to treat dry eye. There are several types of plugs in the market, such as silicon plugs or the SMART-PLUG (Mednnium Inc, 15350 Barranca Parkway, Irvenie CA, USA). For years, silicon plugs were the most popular choice. Among the complications described for the said plugs are the spontaneous extrusion of plugs or the formation of pyogenic granulomas (3,4); in both cases, surgical extraction is advised.

SMART-PLUGs are implants designed to facilitate insertion (not requiring dilation of the lachrymal point) and prevent ocular irritation due to friction with the plug’s tip. This is an acrylic material that alters its physical properties, going from solid and rigid to a soft gel in response to increased temperature. Its diameter goes from 0.4 to 1 mm. Thus, insertion is easier and the gel adjusts by expansion to the shape of the canaliculus. The hydrophobic thermally sensitive acrylic material is fully biocompatible, and thus does not cause toxicity.

CASE REPORT

A 65-year-old female arrives in the ophthalmology outpatient unit reporting foreign body sensation and a red-purplish tumor along the left internal canthus. Exploration reveals the presence of a granuloma emerging through the lower lachrymal point.

The patient had been monitored for the past four years at the ophthalmology outpatient unit due to a dry eye condition discovered during the different examinations performed at different times. The Schirmer test yielded values below 5 mm, BUT between 1 and 2 seconds and the virtual absence of the tear meniscus.

The patient was prescribed several treatments with different kinds of lubricants, although no significant improvement was observed. Since her chronic ailments prevailed, SMART-PLUG punctal plugs were implanted in the lower canalicus of both eyes, and the lubricating treatment was prolonged (0.5% carmelose), experiencing a slight improvement that subsided six months later.

Since ailments worsened, she was administered 5 mg of oral pilocarpine every 8 hours (Salagen®), noticing a temporary relief. Later on, one year after placing the implant, pilocarpine was suspended due to the drug’s inefficacy and a new SMART-PLUG was implanted in the left eye’s upper canalicus without noticing any improvement. She was also administered autologous serum eyedrops at first and then topical cyclosporine. Since no clinical benefit was observed, both eyedrops were suspended and treatment was prescribed to include only artificial tears.

Three years after receiving the first implant, the patient checked in the emergency room suffering from a granuloma in the left eye’s lower canalicus, which was immediately removed. Two weeks later, she arrived in the outpatient unit reporting a relapsed granuloma (fig. 1).

The punctal implant was extracted (fig. 2) by means of a transcutaneous canaliculotomy; subsequently, the caniculus was debrided and cleaned. No probe or canicular device was implanted. The infection disappeared after surgery, and to date no relapse has been observed in the granuloma.

Fig. 1: Pyogenic granuloma.
DISCUSSION

This is thus a case of pyogenic granuloma in a SMART-PLUG punctal implant. Pyogenic granulomas are complications described for punctal implants, usually in silicon implants. To date, few cases in the literature have reported the emergence of this complication in SMART PLUG punctal implants (5), since these are made of biocompatible acrylic material.

The fact that it appeared in the left eye may be the result of occluding both lachrymal points, which in turn would lead to the accumulation of debris that may be responsible for a chronic irritation that, in time, favors the formation of granulomas.

In spite of the apparent safety of plug implant procedures, one should keep in mind that in some cases implants can behave as foreign bodies and result in local reactions as a consequence of chronic irritation. One should be aware of this possibility in the case of implants in both caniculi of the same eye. Such complications lead to surgery aimed at extracting the said plugs and, as in the present case, the granuloma.

REFERENCES