Ampullary Pyogenic Granuloma as a Complication of Lacrimal Plug Migration

Huan-Chen Hsu, MD

We present a patient with ampullary pyogenic granuloma caused by spontaneous migration of a silicone lacrimal plug. A 43-year-old woman with severely dry eyes was treated with non-absorbable silicone punctal plugs insertion in both superior and inferior puncta. Irritation and purulent discharge gradually developed 3 weeks after implantation. A pink, fleshly ampullary lesion over the left superior punctum was noted later. The migrated silicone plug was found close to the common canaliculus during surgery. Histopathologic examination confirmed the diagnosis of pyogenic granuloma. A migrated lacrimal plug resulting in pyogenic granuloma is a rare complication. The treatment of choice is removal of the migrated plug as early as possible. Patients with lacrimal plugs insertions should be informed of possible complications and should be followed up regularly for early detection of plug-related problems. (*Chang Gung Med J 2002;25:415-8*)

Key words: pyogenic granuloma, punctal plugs, migration.

Occlusion of the puncta or the canaliculi to preserve endogenously available tears and exogenously applied surface agents improves the objective signs and subjective symptoms of dry eyes.⁽¹⁾ Collagen inserts or silicone plugs that allow the puncta or the canaliculi to be occluded in a temporary or reversible manner are commercially available. Several complications with permanent punctal plugs have been reported, including extrusion and migration.⁽²⁻⁶⁾ We report a case with ampullary pyogenic granuloma formation caused by spontaneous migration of a non-absorbable silicone lacrimal plug.

CASE REPORT

A 43-year-old woman with severely dry eyes was treated with silicone punctal plugs insertion in both superior and inferior puncta. Tearing, mucopurulent discharge and irritation of the left eye gradually developed 3 weeks after implantation. The left inferior punctal plug was removed, but the left superior plug could not be found. The patient suffered from irritation and foreign body sensation continuously for about one year. Finally, she was referred to our hospital for further evaluation and treatment. Examination revealed a pink, fleshy ampullary lesion of approximately 3mm in diameter over the left superior punctum (Fig. 1). The plug could not be seen or palpated. There was mild keratitis noted in the upper cornea of the left eye. Irrigation resulted in mucopurulent reflux from the left superior punctum. Cultures of the mucopurulent materials revealed no growth of bacteria. Canalicular probing through the left inferior punctum revealed no evidence of obstruction. The surgical exploration was performed to assess for evidence of a retained, migrated punctal plug within the lacrimal passage system. A small incision was made through the punctum and proximal portion of the canaliculus, and purulent material was expressed. The migrated

From the Department of Ophthalmology, Chang Gung Memorial Hospital, Kaohsiung; Chang Gung University, Taoyuan. Received: Jan. 18, 2001; Accepted: Nov. 2, 2001

Address for reprints: Dr. Huan-Chen Hsu, Department of Ophthalmology, Chang Gung Memorial Hospital. 123, Ta-Pei Road, Niaosung, Kaohsiung, Taiwan, R.O.C. Tel: 886-7-7317123 ext. 8372; Fax: 886-7-7318762; E-mail: oph4211@adm.cgmh.org.tw



Fig. 1 Pyogenic granuloma of the superior punctum of the left eye.



Fig. 2 A retained migrated permanent lacrimal plug was recovered.



Fig. 3 Histologic section shows granulation tissue that consists of inflammatory cells infiltration and capillary proliferation (Hematoxilin-Eosin, 100;).

silicone punctal plug was found close to the common canaliculus (Fig. 2). The inflamed mass was then surgically removed. The lesion was irrigated with gentamicin sulfate (20 mg/2 ml). Topical 0.3% gentamicin sulfate ointment was applied postoperatively. Histopathologic examination results confirmed the diagnosis of pyogenic granuloma (Fig. 3). Cultures of the specimens materials were negative. The irritation and mucopurulent discharge disappeared postoperatively. Scarring of the canaliculus resulted in occlusion, and then the dry-eye symptoms decreased.

DISCUSSION

Permanent punctal plugs are commonly used to treat dry eyes. Punctal plugs may be used in addition to the frequent use of artificial tears in the patients with persistent dry eyes symptoms. The major complications associated with punctal plugs insertion are extrusion and secondary corneal erosion. Reported complications associated with silicone punctal plugs include local irritation, epiphora, extrusion, migration, plug subluxation, pyogenic granuloma, canaliculitis, and dacryocystitis.⁽²⁻⁶⁾ Inadequate insertion of the plugs may result in displacement of the plug into the common canaliculus or later migration. Spontaneous plug migration can also occur. The mechanism for the migration remains unclear. Dilated canaliculus, relatively smaller plugs, and eye rubbing may contribute to the plugs migration.⁽⁴⁾ The migrated plug found in our case was a relatively small silicone plug that was especially designed to occlude the horizontal canaliculus. The small plugs possibly pose a greater risk for migration.

Silicone is usually well tolerated and is a relatively inert material. A retained plug in the canaliculus or lacrimal sac prevents tear flow and may cause local inflammation and secondary infection. Silicone punctal plugs migration resulting in dacryocystitis and canaliculitis have been reported.⁽⁴⁾ A migrated intracanalicular silicone plug resulting in pyogenic granuloma is a rare complication.^(3,6) The shape of the silicone plugs and the surface irregularities may play roles in the formation of pyogenic granuloma. The cultures of the mucopurulent materials pre-operatively as well as intraoperatively were all negative in this case. However, the possibility of localized infection cannot be completely ruled out. The diagnosis of ampullary pyogenic granuloma in this case was based on clinical appearance and histopathologic examination.

The treatment of choice is removal of the migrated plugs as early as possible. Probing and irrigation in suspected patients with migrated punctal plugs should be performed cautiously. Forceful probing and irrigation of the lacrimal system may cause deeper migration and further problems and difficulties for removal of the retained plugs. Detailed history taking may be necessary in such cases to avoid further complications. The patients with silicone punctal plugs should be informed of possible complications and should be followed up regularly for early detection of plug-related problems.

REFERENCES

- 1. Murube J, Murube E. Treatment of dry eye by blocking the lacrimal canaliculi. Surv Ophthalmol 1996;40:463-80.
- 2. Levenson JE, Hofbaver J. Problems with punctal plugs. Arch Ophthalmol 1989;107:493-4.
- 3. Rapoza PA, Ruddat MS. Pyogenic granuloma as a complication of silicone punctal plugs. Am J Ophthalmol 1992;113:454-5.
- Rumelt S, Remulla H, Rubin PAD. Silicone punctal plug migration resulting in dacryocystitis and canaliculitis. Cornea 1997;16:377-9.
- 5. Soparkar CNS, Patrinely JR, Hunts J, Linberg JV, Kersten RC, Anderson R. The perils of permanent punctal plugs. Am J Ophthalmol 1997;123:120-1.
- Akova YA, Demirhan B, Cakmakci S, Aydin P. Pyogenic granuloma: a rare complication of silicone punctal plugs. Ophthalmic Surg Lasers 1999;30:584-5.

淚孔塞子異位併發壺腹狀化濃性肉芽腫

許桓誠

本文報告一例因為矽化物材質之淚孔塞子,自發性異位而併發壺腹狀化濃性肉芽腫之病例。一位43歲女性因爲嚴重的乾眼症,而接受在雙眼上下淚孔植入非溶解性矽化物材質之淚 孔塞子的治療。三週後開始出現刺激感與膿性分泌物。在左上淚孔附近發現一個紅腫壺腹狀 病灶。經由手術在總淚小管處發現已經異位的淚孔塞子。病理切片證實爲化濃性肉芽腫。淚 孔塞子異位併發壺腹狀化濃性肉芽腫是比較罕見的併發症。治療方法爲儘速移除已經異位的 淚孔塞子。接受淚孔塞子植入的病患應被告知可能的併發症,並且定期追蹤檢查。(長庚醫誌 2002;25:415-8)

關鍵字:化濃性肉芽腫,淚孔塞子,異位。