Treatment of lacrimal stenoses obstructions with interventional radiology: immediate and 5-year follow-up results

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Abstract

Purpose. This study was undertaken to evaluate the effectiveness of the Song stent in patients with nasolacrimal duct obstruction.

Materials and methods. Between 2003 and 2007, we treated 76 consecutive nasolacrimal obstructions in 73 patients (mean age 56 years; range 19–81) with implantation of polyurethane stents. Indications were epiphora in 46 patients, dacryocystitis in 18 and recurrent conjunctivitis in three. Average follow-up was 1 year (3 months to 5 years).

Results. Technical success was achieved in 73 procedures (96%). Complications included pain in three cases, eyelid inflammation in four cases and severe bleeding in one case. Postprocedural mucocele was observed in five patients. Mean time without symptoms was 31 weeks. There were 24 cases of stent obstruction: 15 were treated with high-pressure 5% N-acetyl-cysteine and saline flush, achieving resolution in two cases; in three cases, attempts to recanalise the obstruction with a guidewire failed. The occluded stents were removed in 22 patients: seven remained asymptomatic, 15 had recurrence of epiphora, nine received a new stent after dacryocystography and six underwent dacryocystorhinostomy.

Conclusions. Advantages of the procedure include the lack of anatomical alterations to the lacrimal ducts and a low short-term complication rate, whereas limitations include restricted duration of stent patency. The pathophysiological causes of stent obstruction should be clarified in order to relate them to stent morphology.

Riassunto

Obiettivo. Valutare l’efficacia dello stent di Song in pazienti con ostruzione del dotto naso lacrimale.

Materiali e metodi. Settantasei ostruzioni naso-lacrimali trattate con stenti in poliuretano in sala angiografica. Età media 56 anni (19–81), 46 pazienti con epifora, 18 dacrìocistiti, 3 con congiuntiviti ricorrenti. Tempo medio di follow up 1 anno (3 mesi–5 anni).


Introduction

Epiphora refers to inadequate lacrimal-duct drainage and is seen in 3% of ophthalmology consultations [1, 2], with an incidence of 30%–40% among the population older than 50 years of age [3]. Among the many causes of lacrimal-duct obstruction, the most frequent are idiopathic inflammation and traumas to the nasolacrimal system [1]. The main risk factors include white race (especially Mediterranean), advanced age, female gender (4 to 5 women for every one man) and poor hygiene in low socioeconomic settings [3].

Diagnosis is based on clinical assessment and diagnostic imaging with dacryocystography, computed tomography (CT)-dacryocystography and magnetic resonance (MR)-dacryocystography, which provide information on the nature and site of the obstruction [3]. Treatment options include dacryocystorhinostomy (DCR) and stent placement. The first is a surgical procedure performed under general anaesthesia, with an 89%–95% rate of technical success [4–8]. The most frequent complications are bleeding, which requires good control of blood pressure to reduce severity, and reocclusion of the fistulous tract [9].

The second technique is relatively recent and consists of the nonsurgical interventional placement of a stent in the natural duct. The purpose of this study was to evaluate the patency of the Song polyurethane nasolacrimal stent (Song Nasolacrimal Duct Stent Set, Cook, QLD, Australia) implanted in patients with lacrimal-duct stenoses obstructions and to assess its long-term effectiveness over a 5-year follow-up.

Materials and methods

From 2003 to March 2007, we implanted 76 polyurethane Song nasolacrimal stents in 73 consecutive patients (16 men and 57 women; mean age 56 years; age range 19–81) with recurrent epiphora and/or dacryocystitis due to nasolacrimal duct obstruction. Obstructions were idiopathic in 65 patients, posttraumatic in six, and secondary to radiotherapy in two. Clinical manifestations were epiphora in 46 (63%) patients, dacryocystitis in 18 (24.6%) who were treated after resolution of the acute phase, and recurrent conjunctivitis in three (4.1%). Munk’s classification of epiphora into six grades of severity was used to evaluate treatment effectiveness (Table 1) [10]. In our department, the procedure is