Short communication

Endoscopic dacryocystorhinostomy: Role of the ophthalmologist

A. Nogueira a,*, P. Zaragoza b, N. Toledano a, I. Genol a, G. Plaza c,d

a Servicio de Oftalmología, Hospital Universitario de Fuenlabrada, Universidad Rey Juan Carlos, Madrid, Spain
b Servicio de Oftalmología, Hospital La Zarzuela, Madrid, Spain
c Servicio de Otorrinolaringología, Hospital Universitario de Fuenlabrada, Universidad Rey Juan Carlos, Madrid, Spain
d Servicio de Otorrinolaringología, Hospital La Zarzuela, Madrid, Spain

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A B S T R A C T

Objective: To evaluate the results of endoscopic dacryocystorhinostomy (DCR) with or without support of the ophthalmologist.

Materials and methods: A retrospective study of 100 cases of endoscopic DCR surgery conducted by an otolaryngologist between June 2008 and December 2009. Of the 100 cases, 50 were operated with surgical support of the ophthalmologist, who inserted Bowman probes in the upper and lower canaliculi, while in the other 50 cases it was the ophthalmologist who performed this, without the support of the ophthalmologist. The evaluation of the results after 2 years included the subjective perception, the lacrimal patency after lacrimal syringing, and lacrimal functional test after modified Jones test.

Results: Of the 100 DCR reviewed, more than 50% required complementary treatment by the otolaryngologist, mainly septoplasty. As for the resolution of epiphora, without support of the ophthalmologist, 75% of the patients reported an overall subjective improvement, but this reached 92% in the surgical group with support of the ophthalmologist, which was a statistically significant difference.

Conclusions: Endoscopic DCR is effective in the treatment of epiphora, but its results improve when the ophthalmologist inserts the probes in the lacrimal canaliculi during the surgical procedure.

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Dacriocistorrinostomía endonasal: participación del oftalmólogo

R E S U M E N

Objetivo: Evaluar los resultados de la dacriocistorrinostomía (DCR) endoscópica con o sin apoyo del oftalmólogo.

Material y métodos: Estudio retrospectivo de 100 casos operados de DCR endoscópica por un otorrinolaringólogo entre junio de 2008 y diciembre de 2009. De las 100, 50 fueron...
Vía lagrimal
Septoplastia

intervenidas con apoyo quirúrgico de un oftalmólogo, que canalizaba los canaliculos superiores e inferior con sondas de Bowman, mientras que en los otros 50 casos fue el propio otorrinolaringólogo quién realizó esta canalización, sin apoyo del oftalmólogo. La evaluación de los resultados a 2 años incluyó la percepción subjetiva, la permeabilidad de la vía lagrimal tras lavado y la permeabilidad funcional de la vía lagrimal tras test de Jones modificado.

Resultados: De las 100 DCR revisadas, en más del 50% se realizó algún tratamiento complementario por el otorrinolaringólogo, sobre todo septoplastias. En cuanto a la resolución de la epifora, cuando no hubo oftalmólogo presente en el quirófano, los pacientes referían mejoría subjetiva total en 75%; sin embargo, en el grupo cuya canalización quirúrgica era realizada por el oftalmólogo, los resultados satisfactorios llegaban al 92% de forma subjetiva, diferencia estadísticamente significativa.

Conclusiones: La DCR endoscópica es efectiva en el tratamiento de la epifora, pero sus resultados mejoran cuando el oftalmólogo colabora en el procedimiento quirúrgico, canalizando la vía lagrimal.

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Introduction

By means of dacryocystorhinostomy (DCR) it is possible to resolve lacrimal/nasal duct obstruction. DCR can be performed successfully with different techniques such as external DCR, endoscopic DCR or transcanalicular DCR with diode laser.\(^1\)

The involvement of the Otorhinolaryngology specialist together with the ophthalmologist facilitates the resolution of this condition. A comparative study is presented of 2 consecutive series of 50 cases of endoscopic DCR with different results based on the participation or absence of the ophthalmologist during the surgical procedure.

Materials and methods

Retrospective review of 100 cases of endoscopic DCR surgery between June 2008 and December 2009. Fifty of said cases were intervened in each hospital (Fuenlabrada University Hospital and La Zarzuela Hospital), in all cases by the same Otorhinolaryngology (ORL) specialist.

The study included patients who underwent uni-or bilateral endoscopic DCR without previous surgery. All the included patients were seen in the ORL practice and were previously referred from the Ophthalmology Service with lacrimal pathway obstruction diagnostic verified by means of lacrimal pathway cleansing and/or dacryocystograph demonstrating lacrimal pathway obstruction distal to the sac, as well as patency of lacrimal canaliculus.

Surgery was performed under general anesthesia with prior topical vasoconstriction, with endonasal approach utilizing rigid endoscopy with 0° Optics. The surgical procedure followed the usual technique described by other authors by means of U-shaped mucosa flap and osteotomy with chisel and drill.\(^2,3\)

The surgery was completed with other endonasal techniques with individualized indication comprising septoplasty, turbinoplasty, uncinciformectomy or anterior ethmoidectomy (Fig. 1).

The difference between both DCR groups is that in one of the hospitals the ophthalmologist is the specialist who routinely performs surgery of upper and lower canaliculus with Bowman probes (with prior dilatation) to pass subsequently a bicanalicular silicone probe with ends knotted inside the fossa, which remain in place between 2 and 3 months. In the other hospital, the said canalization and intubation are performed by the otorhinolaryngologist without the support of the ophthalmologist.

The follow-up was made in Otorhinolaryngology and Ophthalmology practices, generally at day 7, month 1, 3, 12 and 24. In said visits the ophthalmologist cleansed the lacrimal pathway whereas the otorhinolaryngologist carried out a modified Jones test instilling fluorescein in the conjunctiva.

The assessment of results 2 years after surgery is triple: firstly, the subjective perception of patients regarding the epiphora resolution, classifying the patients in 3 groups: complete improvement (without epiphora or lacrimal pathway inflammation episodes), partial improvement (diminished tearing and lower information without complete disappearance) or no improvement. Secondly, lacrimal pathway patency after active cleansing thereof; and thirdly, functional patency of the lacrimal pathway after the modified Jones test, instilling conjunctival fluorescein and observing its exit to the nasal fossa through the osteotomy.

In order to compare the qualitative variables, Chi square contingency tables and analysis or Fisher’s exact test were utilized. For comparing quantitative with dichotomous qualitative variables the T for student was calculated, previously verifying variance homogeneity. A value of \(p < 0.05\) was taken to be statistically significant. SPSS 15.0 statistical software was used. This research was carried out following the ethical recommendations of the Helsinki declaration.

Results

The overall amount of 100 DCR corresponds to 84 patients as in 8 cases surgery was bilateral. No statistical differences between both groups were found in gender distribution (65% and 69% females) or in age (53.4 and 55.1 years).
Out of the 100 DCR, septoplasty was performed in 32 cases (generally resection of small septal crests with endoscopic approach), in 12 middle turbinate turbinoplasty and innate anterior ethmoidectomy. This means that over 50% of patients required supplementary treatment in addition to the standard DCR procedure performed by the otorhinolaryngologist.

Out of 84 patients, 4 did not complete the two-year follow-up and were excluded from the analysis, leaving 48 DCR cases in each hospital.

In what concerns complications, excessive arbitrary fat exposure produced slight palpebral hematoma in 3 surgeries and in 6 cases epistaxis required retamponade after surgery.

In what concerns epiphora resolution results 2 years after surgery for the 2 series in both hospitals (summarized in Table 1), it is noteworthy that in the absence of an ophthalmologist in the surgery patients referred complete subjective improvement in 75% of cases, which was objectively reduced by cleansing (71%) or the Jones test (62%). However, in the group in which the surgical canalization was performed by the ophthalmologist, the results were significantly better, reaching 92% subjective perception and 85% objective. Said differences are statistically significant.

### Table 1 - Results of endoscopic dacryocystorhinostomy with or without ophthalmologist support in surgery.

<table>
<thead>
<tr>
<th>DCR endonasal</th>
<th>Without ophthalmologist (No. = 48)</th>
<th>With ophthalmologist (No. = 48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete subjective improvement</td>
<td>36 (75%)</td>
<td>44 (92%)</td>
</tr>
<tr>
<td>Patent lacrimal cleansing</td>
<td>34 (71%)</td>
<td>41 (85%)</td>
</tr>
<tr>
<td>Patent modified Jones test</td>
<td>30 (62%)</td>
<td>39 (81%)</td>
</tr>
</tbody>
</table>

All variables are statistically significant; *p* < 0.05.

### Discussion

Endoscopic DCR is a safe and effective surgical technique. It improves lacrimal obstruction symptoms (epiphora, local inflammation) (in percentages) ranging between 75 and 95% according to the series. These results are similar to the external DCR technique. In comparison with the latter, it diminishes surgical trauma and reduces surgery duration.

However, endoscopic DCR frequently involves leaving in the hands of ORL specialists patients who had been diagnosed with a lacrimal condition and should be assessed before, during and after surgery by an ophthalmologist.

The results of the study demonstrate that cooperation between both specialists facilitates the resolution of nasal conditions (septum deviations, sinusitis, etc.) in over half of patients and on the other hand (and more importantly) improving functional DCR results. Although other published series have also obtained good results after endoscopic DCR with lower numbers of associated septum or nasal procedures, the authors believe that the participation of the otorhinolaryngologist is essential and should carry out said procedures to further improve results.

In addition, the said improvement is due to the fact that the participation of the ophthalmologist in the surgical procedure allows an improved diagnostic of patency and functionality of the entire lacrimal system and better canalization thereof, thus reducing the eventual creation of false pathways about which, on the other hand, the otorhinolaryngologist is not aware and can produce exaggerated scarring of lacrimal points or nasal fossa synechiae which can cause surgery failure (Fig. 2).

Finally and as in other series, the results presented herein confirm the need of presenting lacrimal pathway surgery results in subjective manner (including improvements in the quality of life of patients) as well as in objective manner, periodically repeating lacrimal pathway cleansing as well as Jones test in the practice. In fact, in this series the authors have observed patients whose subjective improvement cannot be
confirmed objectively, which should lead us to ponder the said results in greater depth.1,3

Conflict of interests

No conflict of interests has been declared by the authors.

REFERENCES


