Background

The surgical management of nasolacrimal duct obstructions includes both external (endoDCR) and endoscopic (endoDCR) dacryocystorhinostomy.

Success rates of extDCR and endoDCR have been shown to be similar.

Air reflux (AR), the retrograde passage of air from the nose through the canaliculi and puncta (Figs. 1 and 2), has been found in 47% of extDCR patients immediately after surgery.

The rate of AR in endoDCR has been reported. However, the rate with endoDCR is not known.

Methods

- IRB approved study of primary endoDCRs over 5 years.
- Inclusion criteria:
  - Primary endoDCR.
- Follow-up for 6+ months.
- Exclusion criteria:
  - Loss to follow-up.
  - Previous bony lacrimal surgery.
- All surgeries were performed under general anesthesia on an outpatient basis by one of two oculoplastic surgeons and one of two ophthalmologists.
- A structured set of questions was administered to all patients.
- The questionnaire assessed residual tearing, air reflux, epistaxis, and nasal congestion.
- If any of the symptoms were present, the frequency and triggers were noted.
- If AR was present, the patient was asked if AR or the preoperative epiphora was preferable.
- Symptom outcomes were analyzed using the 2-tailed Fisher exact test.

Results

- Eighty-two patients undergoing 101 primary endoDCRs over 5 years were included.
- The majority of patients were female and white. Full demographics are reviewed in Table 1.
- With regards to epiphora, of the 101 procedures: 93.1% were intermittent or improved.
- 70.3% had complete resolution of epiphora.
- 22.8% had improved epiphora.
- 6.9% had no change in epiphora.
- Of the 30 occurrences of residual epiphora: 76.7% were intermittent.
- 23.3% occurred “most of the time.”
- When residual epiphora was present postoperatively, symptoms occurred:
  - Only while outdoors in 56.7%.
  - Regardless of environment in 33.3%.
  - Only while indoors in 6.7%.
  - Uncertain when occurred in 3.3%.
- Epistaxis occurred in 7.9% of cases.
- 75.0% of these occurring only rarely.
- 12.5% daily.
- 12.5% weekly.
- Epistaxis was associated with:
  - Nose blowing (50%).
  - No activities (37.5%).
  - Cold weather (12.5%).

<table>
<thead>
<tr>
<th>Air Reflux</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative</td>
<td>46 of 101</td>
<td>45.5</td>
</tr>
<tr>
<td>Frequency</td>
<td>Total</td>
<td>40</td>
</tr>
<tr>
<td>Noise blowing</td>
<td>34</td>
<td>85.0</td>
</tr>
<tr>
<td>Nostril bleeding or coughing</td>
<td>7</td>
<td>17.5</td>
</tr>
<tr>
<td>Coughing</td>
<td>4</td>
<td>10.0</td>
</tr>
<tr>
<td>Congestion/Epistaxis and sneezing</td>
<td>2</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Table 1. Patient demographic data.

- ‘Success’ after DCR has been defined in several ways. Our definition was resolution or improvement of epiphora, as has been commonly used in other studies.
- Our success rate was 93.0%, which is similar to previous studies assessing the success rate of endoDCR and comparable to extDCR.
- The rate of adverse postoperative symptoms other than epiphora for endoDCR has not been studied in a controlled fashion, nor has it been compared to published data from extDCR.
- The rate of AR in our study was 46%, which is comparable to the 47% found by Herbert and Rose following extDCR.
- There was a significant statistical correlation between the resolution of epiphora and AR, as found with extDCR. This is not surprising, since both resolution of epiphora and the presence of AR following DCR require a patent nasolacrimal fistula (Fig. 2).

Conclusions

- A minority of patients with AR had discovered that pressing on their medial canthus prior to nose blowing, coughing, or sneezing suppressed the AR. Even these patients preferred the AR to epiphora.
- Epistaxis was an uncommon sequela, and even when present, it occurred rarely.
- The 7.9% incidence of epiphora is higher than the 4.3% delayed epiphora reported by Ben Simon et al after extDCR, but approaches the 9.8% found in an endoDCR cohort on aspirin by Smith et al.
- Limitations of this study include the recall bias of patients’ self-reporting.
- Based on our analysis, we conclude that the incidence of AR is nearly identical in external and endoscopic DCR.
- Because postoperative AR is reported in nearly half of patients undergoing DCR, it is reasonable to warn patients of this possibility during preoperative counseling.
- However, only 6.5% of patients with AR found it “mildly bothersome.”

- The rate of air reflux is nearly identical in endoDCR versus extDCR.
- Air reflux is found in nearly half of patients who undergo DCR.
- Patients should be informed of the possibility of postoperative AR prior to DCR.
- Few patients find AR bothersome.
- Epistaxis is rare after endoDCR and when present occurs infrequently.
- Nasal congestion is present in about 20% of patients postoperatively, but only 4.5% did not have this symptom postoperatively.

References


No Financial Disclosures