Does the middle turbinate resection affect the success rate of endonasal dacryocystorhinostomy?

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Introduction

The most common causes of failures in endonasal dacryocystorhinostomy (EDCR) are obstructions at rhinostomy. Some authors recommend using several procedures such as the silicone intubation of the lacrimal system, middle turbinate resection, and/or anterior ethmoidectomy to avoid the complications.

Purpose

To evaluate if the partial resection of the head of the middle turbinate increases a patency of the rhinostomy in the primary endonasal dacryocystorhinostomies (EDCR).

Methods

The partial middle turbinate resection is performed during EDCRs in patients with the anteriorly enlarged middle turbinate to prevent rhinostomy closure. The data were retrospectively collected in 630 primary EDCRs performed in the patients over 16 years old in the period 1994-2009. Only the patients with subsacal nasolacrimal duct obstructions were involved in the study (228 cases); the patients with canicular obstructions and secondary surgical procedures (silicone intubation, ethmoidectomy, septoplasty) were excluded. The success rates of patients with the partial middle turbinate resection (group I) and without resection (group II) were compared one year after the surgery.

Lateral nasal wall - endonasal view: 1 - middle turbinate, 2 - lacrimal sac projection, 3 - maxillary line.

Relationship of turbinates to the nasolacrimal duct. A - Anterior part or the middle concha doesn't extend anteriorly over the lacrimal sac projection. Partial concha resection is not necessary.

Relationship of turbinates to nasolacrimal duct. B - Anterior part or the middle concha extends anteriorly, partial concha resection is recommended to prevent rhinostomy closure and scarring.

Removal of anterior portion of middle turbinate.

Endonasal view (right side): 1 - middle turbinate, 2 - lacrimal sac projection 3 - maxillary line

Endonasal view (right side) after EDCR with partial middle concha resection (fluorescein flows from rhinostomy)

Primary EDCRs - results of partial middle concha resection

EDCR/turbinate resection	mean age /years/	success rate
group I with turbinate resection (96 cases)	16-83 (51.5)	94/96 (97.9%)*
group II without turbinate resection (132 cases)	16-80 (55.8)	120/132 (90.9%)
total (228 cases)	16-83 (57.9)	214/228 (93.9%)

* significance set at $p < 0.05$ vs. group II

Results

The overall success rate was 214/228 (93.9%) in EDCRs **with/without partial turbinate resections**. In group with partial turbinate resection the success rate was 94/96 (97.9%), in group without resection 120/132 (90.9%). The differences between the results in groups I and II were statistically significant ($p < 0.05$).

Conclusion

The partial middle turbinate resection **significantly improves** the success rate in the primary EDCRs.