A Comparison of Short and Long Term Efficacy between Partial Turbinectomy and Microdebrider-Assisted Turbinoplasty

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Abstract

Objectives: To investigate and compare short and long term outcomes of surgical treatment modalities for inferior turbinate hypertrophy, specifically partial turbinectomy, microdebrider-assisted turbinoplasty (MAT), and turbinate outfracture.

Study Design: Retrospective chart review

Methods: A retrospective chart review was performed on 111 patients who underwent inferior turbinectomy between January 2012 and November 2014. Patients were divided into one of four groups according to surgical method.

Results: There was no statistically significant difference in the presence of pain, infection, and postnasal drip between the four groups. Groups 2 and 4 had lower rates of nasal obstruction at weeks 1-2 (p = 0.016). Groups 1-3 had lower rates of rhinorrhea at weeks 1-2 (p = 0.004). Complications were most common at weeks 1-2. Crusting lasted until months 1-2 in all groups, and decreased by months 3-5.

Conclusion: Nasal obstruction, specifically inferior turbinate hypertrophy, is a common clinical entity in patients. Multiple corrective surgical techniques are offered, yet there is no definitive data as to which method is superior. This study analyzed both objective and subjective endpoints to assess clinical effectiveness of three surgical modalities. Rhinorrhea was most common in patients who received partial resection, MAT, and turbinate outfracture. Although this study provides a useful contribution to the literature regarding surgical method efficacy and symptom control, a larger sample size is needed for generalizable conclusions.

Introduction

Normal air turbulence allows contact of air with the mucus membrane. The nasal air resistance, if is too high or too low, can give the perception of nasal obstruction [1]. Inferior turbinate hypertrophy, one of the most common diagnoses made by ENTs, causes nasal obstruction and/or chronic sinusitis. Treatment involves medical or surgical therapy [2,3].

Partial resection involves resection of a portion of the bony and mucosal turbinates, in an effort to increase volume of the nasal passage.

Microdebrider-assisted turbinoplasty involves resection of the mucosal portion overlaying the bony turbinate.

Turbinate outfracture involves displacement of the turbinate laterally using a blunt elevator in order to widen the nasal passageway. This widening is often transient, as the turbinate tends to heal and eventually resume its previous position [1].

Goal: Review patients who underwent inferior turbinectomy at our institution and compare postoperative complications

Hypothesis: Submucosal resection with a microdebrider with or without turbinate outfracture results in lower rates of postoperative crusting, bleeding, and other complications.

Study Design: IRB-approved retrospective cohort study

Inclusion criteria:
1. Age ≥ 18 years old
2. Underwent inferior turbinectomy surgery between 2012-2014
3. No history of previous nasal surgery

Data collected at three different post-operative visits:
1. Presence of pain, crusting, bleeding, rhinorrhea, infection, post-nasal drip, nasal obstruction

Patient divided into four groups based on surgical method:
• Group 1 – microdebrider-assisted turbinoplasty (MAT) +/- turbinate outfracture
• Group 2 - partial resection +/- turbinate outfracture
• Group 3 - partial resection + MAT
• Group 4 - partial resection + MAT + turbinate outfracture

Methods

Results

A total of 105 patients were included in the study.
• Group 1 – 31 patients
• Group 2 – 40 patients
• Group 3 – 14 patients
• Group 4 – 20 patients

Presence of pain, infection, and postnasal drip were not statistically different between groups. No atrophy or synchia were present in any group at any timepoint.

Discussion

Nasal obstruction was overall infrequent, but more commonly seen in the MAT +/- turbinate outfracture (group 1) and partial resection + MAT (group 3) groups at weeks 1-2. Rhinorrhea was more commonly seen in group 4 at weeks 1-2. By months 3-5, there was no statistically significant difference in complication rate between the four groups. From this data, we can conclude that there is no difference in outcome between different types of surgical treatment for inferior turbinate hypertrophy in the long term.

Capi et. al. and Elwany et. al. report subjective improvement of 100% and 98.3% after partial resection [4,5]. Warwick-Brown also reports only 42%, and the highest rate of bleeding (26%) and crusting (71%) [6]. Yanez et. al. report subjective improvement of 91.3% after MAT [7]. Lee et. al. report the highest rate of bleeding (26%) after MAT, while others report much lower rates [7,8,9,10].

Conclusions

From this data, we can conclude that there is no difference in outcome between different types of surgical treatment for inferior turbinate hypertrophy in the long term. There is some difference in complication rate in the short term, although larger sample sizes are needed within each group.

In addition, a prospective randomized clinical trial to test our hypothesis as well as compare quality of life measures between different surgical methods is needed.

References