

## REVIEW ARTICLE

# Coblation vs Microdebrider-assisted Inferior Turbinoplasty

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## ABSTRACT

**Aim:** The aim of this study is to compare the effectiveness of coblation and microdebrider-assisted turbinoplasty in reducing nasal obstruction due to inferior turbinate hypertrophy (ITH).

**Background:** A comprehensive search of articles in English language was performed in PubMed using the keywords coblation turbinoplasty, coblation inferior turbinate reduction, microdebrider turbinoplasty, microdebrider assisted inferior turbinate reduction.

**Review results:** Primary search yielded 41 results with only two fulfilling the inclusion and exclusion criteria. In both studies, patients were assessed objectively as well as subjectively. Improvement in nasal obstruction was similar in both coblation and microdebrider groups up to 6 months of follow-up in both studies. However, in the study by Lee and Lee (2006) at 12 months postoperative follow-up, microdebrider-assisted turbinoplasty patients showed a better improvement in nasal obstruction both objectively on acoustic rhinometry and subjectively as compared with the coblation group ( $p < 0.05$ ).

**Conclusion:** Despite getting better results with microdebrider-assisted turbinoplasty in one of the study, it can be safely concluded that longer postsurgical follow-up period with bigger sample size is required to adequately comment on the extra benefit offered by either coblation or microdebrider.

**Clinical significance:** As and when further research is planned on comparing benefits of different powered instruments for turbinate reduction, it will be wise to prolong the follow-up period with increased sample size.

**Keywords:** Coblation, Descriptive review, Inferior turbinate, Microdebrider, Turbinoplasty.

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**Conflict of interest:** None

## BACKGROUND

Inferior turbinate hypertrophy (ITH) may be caused due to a plethora of nasal conditions. Turbinate reduction or

turbinoplasty is a common procedure done to relieve nasal obstruction due to ITH. Routine surgical resection techniques involve removal of turbinate bone with removal of submucosal tissue and variable degree of turbinate mucosa. The downfalls of too much removal of turbinate mucosa are increased risk of dryness in throat, nasal crusting, nasal bleeding, and extremely patent nasal cavities.<sup>1</sup> To overcome these complications, in the last decade, powered instruments have increasingly been used for inferior turbinate reduction. In the last decade, the use of coblation and microdebrider has yielded satisfactory results with reduced incidence of side effects.<sup>2,3</sup> In this article, we aim to review the literature comparing the effectiveness of coblation and microdebrider-assisted turbinoplasty in reducing nasal obstruction due to ITH.

## REVIEW RESULTS

A comprehensive search of articles in English language was performed in PubMed using the keywords coblation turbinoplasty, coblation inferior turbinate reduction, microdebrider turbinoplasty, microdebrider assisted inferior turbinate reduction. Inclusion criteria in our review were studies on human subjects and studies specifically comparing coblation with microdebrider-assisted turbinoplasty. Exclusion criteria included turbinoplasty done along with other nasal procedures and patients under the age of 12 years.

Primary search yielded 41 results with only two fulfilling the inclusion and exclusion criteria.

Both studies (Lee & Lee, and Hegazy et al)<sup>4,5</sup> selected patients with nasal obstruction due to bilateral ITH unresponsive to medical therapy. Similarity was also seen in group selection and number of patients included in the study. Objective assessment by Lee and Lee was done by acoustic rhinometry, whereas Hegazy et al did objective assessment by inferior turbinate size scoring according to Friedman grading system.<sup>6</sup> In addition, Hegazy et al also did a subjective assessment using visual analogue scale for nasal symptoms. Postoperative evaluation was done after 3, 6, and 12 months of surgery by Lee and Lee and at 2 days, 1 week, 2, and 6 months of surgery by Hegazy et al.

Improvement in nasal obstruction was similar in both coblation and microdebrider group up to 6 months of follow-up in both studies. However, in the study by Lee and Lee<sup>4</sup> at 12 months postoperative follow-up,

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microdebrider-assisted turbinoplasty patients showed a better improvement in nasal obstruction both objectively on acoustic rhinometry and subjectively as compared with the coblation group ( $p < 0.05$ ).

Surgical time was found to be slightly less in coblation group in both studies, but was statistically insignificant. Postoperative duration of resolution of symptoms of postnasal drip, postoperative bleeding, crusting, nasal stuffiness, and discharge were similar in both groups in both studies.

## DISCUSSION

Both coblation and microdebrider-assisted turbinoplasty produce satisfactory results in terms of symptomatic relief of nasal obstruction due to ITH. However, on long-term follow-up, microdebrider seems to a better option in view of the two studies presently available at our disposal. Still, these limited studies could neither prove nor refute the superiority of either procedure for inferior turbinate reduction. Further studies are required with a longer postsurgical follow-up period with a bigger sample size. Longer follow-up will be helpful in identifying the patients with relapse or recurrence of symptoms.

## CONCLUSION

Despite getting better results with microdebrider-assisted turbinoplasty in one of the study, it can be safely concluded that longer postsurgical follow-up period with bigger sample size is required to adequately comment

on the extra benefit offered by either coblation or microdebrider.

## CLINICAL SIGNIFICANCE

As and when further research is planned on comparing benefits of different powered instruments for turbinate reduction, it will be wise to prolong the follow-up period with increased sample size. Different newer modalities of treatment should be individualized to patients keeping in mind the associated local comorbidities which can alter the final outcome.

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