

Purpose: Rhinoplasty is one of the most challenging procedures plastic surgeons are asked to perform. While there are standard maneuvers utilized by most every rhinoplasty surgeons, other techniques are not as uniformly utilized. The approach to the inferior turbinate is one such distinction. While many different techniques exist for treating inferior turbinate hypertrophy, a systematic review of these techniques does not yet exist in our literature.

Methods: A MEDLINE, Pubmed, and Cochrane database search was performed for inferior turbinate surgery which yielded 1,210 studies. This search was then narrowed by analyzing titles containing any of the following keywords: turbinectomy, inferior turbinectomy, partial turbinectomy, submucosal turbinectomy, electrocautery, laser cautery, cryotherapy, cryosurgery, radiofrequency ablation, anterior trimming, radical trimming, hypertrophied inferior turbinates, nasal obstruction, and/or nasal turbinates. Studies with titles not containing these keywords were excluded. Studies in which inferior turbinectomy was performed in conjunction with other nasal procedures, such as septoplasty, or in patients with chronic conditions such as refractory allergic rhinitis and post-nasal drip, were also excluded.

Results: This search yielded 75 relevant studies. In terms of subjective improvement of nasal obstruction, anterior turbinectomy had highest rate of improvement, with 94% of patients reporting a decrease in nasal obstruction. This was followed by partial turbinectomy (90.93%), electrocautery (75%), cryotherapy (68.24%), laser cautery (64%), and total turbinectomy (43.4%). Cryotherapy was found to have the greatest change in nasal airway resistance (0.9 Pa/cm^3) followed by electrocautery (0.775 Pa/cm^3), laser cautery (0.705 Pa/cm^3), and radical trimming (0.536 Pa/cm^3). Surgeons were found to prefer partial turbinectomy over other techniques (61.90%) followed by turbinate outfracture (35.5%). Postoperative bleeding, crusting, and atrophic rhinitis were most commonly reported after total turbinectomy (8.4%, 16.4%, and 4.9% respectively) while synechiae were most prevalent after electrocautery (25%). Postoperative anterior rhinorrhea was most common after laser cautery (48.43%) and postoperative post-nasal drip was most common after electrocautery (33.90%). Postoperative infection was most common after partial turbinectomy (12%).

Conclusion: Many approaches toward treating inferior turbinate hypertrophy in rhinoplasty have been utilized in the literature. A systematic review of the evidence reveals that partial turbinectomy appears to provide largest decrease in nasal obstruction, while total turbinectomy and electrocauterization have higher levels of complications. Accurate pre-operative diagnosis and surgical planning are critical in assessing which procedure will benefit each rhinoplasty patient.