Surgical Ultrasound Reduction of Inferior Turbinate Hypertrophy

Forum Article

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Background

Nasal obstruction is a frequent complaint in ENT clinics which is commonly resulting from inferior turbinate hypertrophy, surgical reduction of inferior turbinate is indicated in refractory cases not responding to conservative management & the optimal surgical technique is controversial. Ultrasound probe is unipolar which is inserted in the submucosal and induce explosion of the cells and tissue separation in various levels. A phenomenon known as cavitations.

Objective

i. Evaluation of the subjective improvement of nasal obstruction undergoing Ultrasound volumetric tissue reduction (UVTR)

ii. Evaluation of the safety and effectiveness of surgical Ultrasound volumetric tissue reduction (UVTR) in management of patients with chronic nasal obstruction resulting from inferior turbinate hypertrophy refractory to medical treatment (Figure 1).

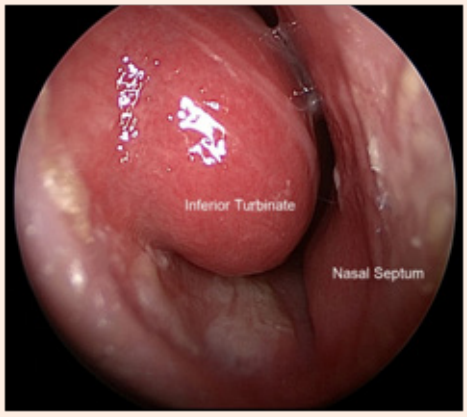

Figure 1: Shows inferior turbinate hypertrophy refractory to medical treatment.

Patients and methods

This descriptive prospective study, (non-controlled clinical trial) was conducted during the period of February 2016 to December 2016 In Al Yarmouk teaching hospital in Baghdad. A total of 43 patients sequentially selected with (range 13-65years).

Under guide of karlstorz rigid endoscope 0 degree 4mm the medial surface of the inferior nasal concha has been touched to site of introduction to ensure about the pain with the sharp end of the probe, the probe was introduced through the nasal turbinate sub mucosal while the device is activated, advance it slowly toward the posterior end of the inferior turbinate using light pressure with help of endoscope then the probe has been withdrawn slowly, pausing briefly every 6-8 mm length for few seconds until the shrinkage has been occurred, before leaving out the probe , circular movement on entry point to ensure good hemostasis for few seconds. 2 or 3 entrance in different sites of inferior turbinate may be applied according to shrinkage that has been occurred [1,2].

All patients underwent surgical Ultrasound reduction of the inferior turbinate under local anesthesia. Data collected from all patients by using a questionnaire formula [3-5]. Assessment of patients was done with help of the visual analog scales, inferior turbinate size grading by endoscope and follow up of the patients was done as the following (1st week, 1st month, 3rd month and 6th month postoperatively (Figure 2-4).

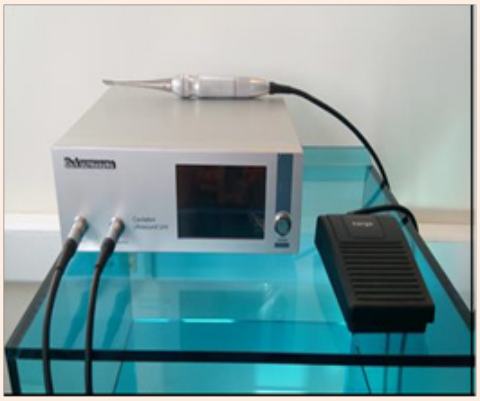

Figure 2: D & A ultrasurg medical device.

Figure 3: D&A ultrasurg medical device hand piece and defferent sergical probs.

Figure 4: Unipolar Ultrasound probe.

Results

A total of 43 patients sequentially selected with a mean age 35.7 years (range 13-65 years). Gender distribution was 22 males (51.1%) (Mean age 19.9 years) & 21females (48.8%) (Mean age 15.8 years) [6-10]. During the surgery there was mild pain (pressure like sensation) in 20 patients (46.5 %) &significant bleeding in 4 patients (9.3%).

The crustation debris has been occurred in all patients in the first week; however no crustation was seen after the 1st month.

There was significant & gradual improvement in nasal obstruction after the 1st month postoperatively, 40 patients (93%) had no obstruction & significant gradual reduction in turbinate size as seen by endoscope, 2 patients had grade II hypertrophy, 1 patient had grade III hypertrophy at the 3rd postoperative month, there were no major complications during or after the procedure. Synechia was not observed in any patient [6].

Conclusion

The results suggest that surgical Ultrasound assisted turbinoplasty is an efficient & well tolerated procedure for the management of chronic nasal obstruction.

References

1. Ercan C, Imre A, Pinar E, Erdoğan N, Umut Sakarya E, et al. (2014) Comparison of Submucosal Resection and Radiofrequency Turbinate Volume Reduction for Inferior Turbinate Hypertrophy: Evaluation by Magnetic Resonance Imaging, Indian J Otolaryngol Head Neck Surg 66(3): 281-286.
2. Peter-John Wormald (2013) Endoscopic sinus surgery: anatomy, three-dimensional reconstruction, and surgical technique, (3rd edn), Powered Inferior Turbinoplasty and Endoscopic Septoplasty, India, p. 19-27.
3. Iordanis K, Jannis C (2009) Endoscopic Management of Inferior Turbinate Hypertrophy. Rhinology and Facial Plastic Surgery, pp. 545-551.
4. Neal c Gehani, Steven MH (2012) Septoplasty, turbinate reduction & correction of nasal obstruction. Bailey's head & neck surgery-otolaryngology.
5. Rhinology & allergy, John AM de Groot, Egbert HH, Peter WH, Ronald LAW Bleys (2015) Functional Reconstructive Nasal Surgery. Webshop, pp. 428.
6. Talaat M, el-Sabawy E, Baky FA, Raheem AA (1987) Submucous diathermy of the inferior turbinates in chronic hypertrophic rhinitis. J Laryngol Otol 101(5): 452-460.
7. Kumar K, Kumar S, Garg S (2014) A Comparative Study of Radiofrequency Assisted Versus Microdebrider Assisted Turbinoplasty in Cases of Inferior Turbinate Hypertrophy. Indian J Otolaryngol Head Neck Surg 66(1): 35-39.
8. Passali D, Lauriello M, Anselmi M (1999) Treatment of hypertrophy of the inferior turbinate: Long-term results in 382 patients randomly assigned to therapy. Ann Otol Rhinol Laryngol 108(6): 569-575.
9. Ciprandi G , Mora F, Cassano M, Gallina AM, Mora R (2009) Visual analog scale (VAS) and nasal obstruction in persistent allergic rhinitis. Otolaryngol Head Neck Surg 114(4): 527-529.
10. Cury R, Gioseffi C, Andrade E, Cury M, Cury SF (2013) The Incidence of Inferior Turbinate Hypertrophy in a Brazilian Population. WebmedCentral RHINOLOGY 4(6): WMC004276.

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