

Hypertrophic Inferior Turbinates and Treatment with Erbium YAG Laser - a Pilot Study with RCT Design

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SUMMARY

Hypertrophic inferior turbinates (hypertrophic nasal concha) is a common sign in subjective nasal obstruction in adults. It affects the most important and narrow part of the upper airway. A co-symptom is often a runny nose. The cause of the hypertrophy can be allergic rhinitis, hyper-reactivity, hormonal causes, rhinitis medicamentosa or unknown. The treatment alternative today is long-term daily use of local nasal corticosteroids or surgery with inferior turbinate reduction (submucosa resection) with cold knife, cauterization or microdebrider, or thermal ablation with radiofrequency, coblation or ablative laser (mainly CO₂ or diode lasers). All surgical procedures offered today are invasive with the risk of bleeding and infection, and are painful and leave unwanted scar tissue and/or various degree of dysfunctional membrane. All local nasal corticosteroids can, in the long term, cause nose bleedings, nasal septum perforations, dry nose symptoms, and affect the natural human corticosteroid hormone axis. Therefore it is of high value to find a harmless but effective treatment with long-term effect.

The Erbium YAG laser treatment is scientifically established for the shrinkage and tightening of skin and also in vaginal and oral mucosa in various conditions. It can also be a rapid, non-invasive, pain-free and very safe alternative method for treatment of nasal obstruction with hypertrophic inferior turbinates. In non-ablative, thermal mode it is considered as a non-invasive treatment and will leave no obvious scar in the tissue.

The study patients, approximately 20 persons, were recruited from the clinic's database and local advertisements. All were subjectively suffering from an obstructed or blocked nose and were checked with routine ENT examination, including a written standard health form, and were informed about the study, and with inclusion criteria and no exclusion criteria, were offered to be a part of the study and sign an informed consent.

The study patients were randomized by the study nurse to either placebo (only guided laser without effect) or active laser treatment. For three consecutive weeks, the patients came to the clinic once a week for a clinical check-up, treatment (active or placebo), and completion of a written report rating their nasal congestion, nasal-related symptoms (including the VAS-rating and modified NOSE-rating) and Nasal Peak Inspiratory Flow Meter (N-PIF) measuring nasal flow capacity. One week after the final treatment, the patients came for the final visit and check-up, including written forms and nasal flow capacity.

This is the first study based on scientific golden-standard RCT design that investigates the effects of repetitive Erbium YAG laser in thermal mode on hypertrophic inferior turbinates and its palette of associated symptoms.

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