

Olfactory function after total laryngectomy in Swedish patients after rehabilitation with the Nasal Airflow-Inducing Maneuver

Akademisk avhandling

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This thesis is based on the following papers:

- I. Risberg-Berlin B, Ylitalo R, Finizia C
Screening and rehabilitation of olfaction after total laryngectomy in Swedish patients: Results from an intervention study using the Nasal Airflow-Inducing Maneuver
Arch Otolaryngol Head Neck Surg 2006;132;301-306.
- II. Risberg-Berlin B, Ylitalo Möller R, Finizia C.
Effectiveness of olfactory rehabilitation with the Nasal Airflow-Inducing Maneuver after total laryngectomy: One-year follow-up study
Arch Otolaryngol Head Neck Surg, 2007;133;650-654.
- III. Risberg-Berlin B, Rydén A, Ylitalo Möller R, Finizia C.
Effects of total laryngectomy on olfactory function, health-related quality of life, and communication: A 3-year follow-up study
Submitted Arch Otolaryngol Head Neck Surg
- IV. Risberg-Berlin B, Rydén A, Ylitalo Möller R, Finizia C
Development of a clinical instrument improving rehabilitation of olfaction with the Nasal Airflow-Inducing Maneuver in Swedish laryngectomized patients
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Abstract

After a total laryngectomy the upper and lower airways are disconnected resulting in a wide range of adverse effects, e.g. deterioration of nasal functions in breathing, loss or decrease of normal sense of smell and taste, as well as loss of normal voice. Recently, a new method that can restore the sense of smell in laryngectomized patients has been developed, the Nasal Airflow-Inducing Maneuver (NAIM). The overall aims of this thesis were: 1) to describe the olfactory function in laryngectomized patients and to assess the results of repeated interventions with the NAIM; 2) to evaluate the long-term results 6 and 12 months after intervention; 3) to assess olfaction, health-related quality of life (HRQL) and communication 36 months after NAIM intervention; and 4) to use a clinical protocol to follow changes in the NAIM technique over time.

The study population consisted of 24 laryngectomized patients. Olfaction acuity was examined with the Scandinavian Odor Identification Test (SOIT). The patients were categorized as smellers (normosmia or hyposmia) or non-smellers (anosmia) based on the SOIT results. Their self-estimation of smell, taste, health-related quality of life and communication were measured with validated questionnaires. According to SOIT, 18 of 24 patients (75%) had impaired sense of smell before NAIM rehabilitation and 72% improved their sense of smell after 3 NAIM rehabilitation sessions. Further improvement was also seen at the 6 and 12 month follow-up, i.e. 83% and 88% respectively, were categorized as smellers according to SOIT results. Three years after NAIM rehabilitation all patients still alive (n=18) were re-examined and as many as 78% were still smellers. In addition, the patients reported an overall good HRQL and no mental distress. According to a structured protocol it was possible to identify improvements in NAIM key variables associated with improvements of the sense of smell over time.

It was concluded that olfactory impairment is common in laryngectomized patients, that NAIM is an effective method for restoring the sense of smell, and that the improvements endure in long-term. Consequently, olfactory rehabilitation according to the NAIM should be incorporated into routine rehabilitation programs for all laryngectomized patients. Furthermore, a protocol is a useful and reliable tool for evaluating use of the NAIM. Moreover, HRQL questionnaires should be complemented with more diagnose specific questionnaires when evaluating olfaction and communication in laryngectomized patients.

Key words: olfaction, total laryngectomy, Nasal Airflow-Inducing Maneuver, health-related quality of life

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