

ABSTRACT

Diagnosis of laryngeal and hypopharyngeal cancer is often in advanced stages of cancer, resulting in elimination of the possibility of treatment with the least mutilating effect for the patient. The huge progamation. ress in diagnostic process of mucosal tumors of the head and neck has been started with the development of new optical endoscopic imaging methods that are able to visualize initiating discrete mucosal changes with pathological vascularization easier and more accurately.

The aim of this dissertation is to evaluate the benefit of Narrow Band Imaging (NBI), especially in the differentiation of benign, precancerous and malignant changes in three groups of patients, it means in preoperative diagnostics in outpatient department (group I), during the endoscopic surgery (group II) and also in follow-up of patients after curative radiotherapy (group III). The vascular changes within the observed lesion or in close contact with the laryngeal/hypopharyngeal lesion were classified according to two classifications (Ni and Arens) and subsequently correlated with the histopathological results.

The dissertation confirmed that NBI plays a key role in early detection of precancerous and malignant changes, in discrimination between benign and malignant vascular patterns with statistical significance. We proved significant difference in sensitivity and specificity between the NBI and conventional white light endoscopy in preoperative and intraoperative diagnostics (group I and II). Even better results we achieved using Arens classification in assessment of vascular changes and correlation with histopathological results, where we proved the agreement 90.6% in group I and 91.1% in group II. Non-controversial benefit of this method, especially magnifying HD endoscopy with NBI is better identification of the extent of the lesion intraoperatively or identification other synchronous lesions not visible in conventional white light endoscopy what we proved in group II. The larger extent of the lesion was found out in 22.1% and new lesions not visible in conventional white light endoscopy in 17.6%.

Transnasal flexible endoscopy with NBI in outpatient settings contributes to early detection of pathological changes also in post-radiation altered mucosa of the larynx and hypopharynx. The right interpretation of NBI findings is highly dependent on the investigator's experience. It is primary a matter of distinguishing between vascular changes that are the consequence of radiotherapy from real tumorous persistence or recurrence. The cause of false positive results is pathological arrangement of capillary loops in irradiated mucosal membrane and this is the reason of low specificity. This study proved the significance of flexible NBI endoscopy also

in patients with primary unsuspecting findings in out-patient flexible NBI endoscopy, when during the subsequent long-term follow-up no suspicious lesions were occurred. It allows to follow-up these patients a long time while „historically“ they underwent an examination under general anesthesia. This approach is particularly positive in elderly polymorbid patients at risk of general anesthesia, in patients with postradiation trismus, where intubation is difficult or with postradiation neck swelling with higher risk of tracheostomy.

We proved that NBI endoscopy is an useful method in early detection of precancerous and malignant laryngeal and hypopharyngeal lesions, allows better visualization of discrete mucosal pathological lesions not observable in conventional white light endoscopy, precise identification of tumorous margins and improves follow-up of patients with a history of cancer treatment.

Therefore NBI should be a „gold standard“ and a routine diagnostic tool for assessment of laryngeal and hypopharyngeal pathology.