

Diagnostic of premalignant and early malignant laryngeal lesions with narrow band imaging (NBI)

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Treatment and prognosis of leukoplakia significantly differ with the different pathological types and an effective examination measure is the key to make informed treatment decision. New diagnostic techniques with real-time applicability try to better detect or delineate primary squamocellular carcinoma. Narrow band imaging (NBI) is often called “optical biopsy”, because it enables the characterization of mucosal changes and making endoscopic findings more predictive without requiring tissue sampling. In detection of surface mucosal changes characteristic for neoplastic lesions - epithelial abnormalities and vascular changes can be better observed in NBI. According to the vascular pattern of NBI described by Ni, which is based on the dynamic changes of the capillary pattern on the surface of vocal cord mucosa and vocal cord leukoplakia were classified into the following types: type I-III lesions are benign, type IV lesions are precancerous, and type Va-c lesions are malignant. In University Clinical Hospital Sestre milosrdnice, we conducted a study to show the sensitivity, specificity and accuracy of NBI in predicting the pathohistological analysis in patients with vocal cord leukoplakia. During a one-year period, from 39 operated patients with leukoplakia we found 23 patients with SCC, 6 high grade dysplasia, 8 low grade dysplasia, 2 keratosis. In these cases, NBI sensitivity was 82.14%, NBI specificity 72.73%, positive predictive value 79.31% (95% CI 60.28% to 92.01%) and negative predictive value 76.19% (95% CI 52.83% to 91.78%). The accuracy of NBI in our patients was 78%. In conclusion, NBI is an advanced endoscopic imaging technique that allows early detection of small superficial mucosal lesions that are undetectable using the conventional white-light endoscopy.

Key words: Leukoplakia, vocal cord dysplasia, narrow band imaging (NBI), Ni classification