Abstract

Optical imaging methods incorporating observation of the mucosal surface of organs with narrowband filtered light are diagnostic tools with a significant development in recent years and have become an integral and inseparable part of the diagnostic process of benign and malignant pathologies of the mucosal surface of various anatomical systems of the human body. Malignant and premalignant lesions of the upper aero-digestive tract (UADT) are no exception. The present work demonstrates the benefits of evaluation of changes in microvascular architecture by narrowband imaging. Its major advantage is a more accurate diagnosis of premalignant and malignant mucosal pathologies in the head and neck region based on the identification of significant changes in superficial vascularity. There is a very strong correlation of these vascular changes with the final histopathological analysis. The present data have shown that videoendoscopic examination with narrowband imaging significantly improves the distinction between benign and malignant mucosal lesions even in the UADT pathologies with a similar tendency to neoangiogenesis (squamous cell papilloma vs. squamous cell carcinoma). It also refines the determination of surface extension of tumoral changes and helps to localize and accurately diagnose tumors of very small dimensions, e.g. in patients with regional metastatic spread in the carcinomas of an unknown primary (CUP). Primarily, therefore, this technology is very useful as an excellent screening method for selecting patients with early precancerous and cancerous mucosal changes. However, the results have also shown that this technology can largely replace a widely used follow-up endoscopy under general anesthesia in patients receiving primary or adjuvant non-surgical treatment modalities, i.e. radiotherapy and concomitant chemoradiotherapy. Optical diagnostic methods with narrowband imaging are currently the most progressive technological tool in the diagnosis of head and neck cancer.