Head & Neck Oncology

Oral presentation

Characterization of laryngeal carcinoma by confocal endomicroscopy

Muriel Abbaci*[1], Stephane Temam[2], Odile Casiraghi[3], Philippe Vielh[3], Jacques Bosq[3], Pierre Fouret[3] and Corinne Laplace-Builhé[1]

Address: [1]Cell imaging and Flow cytometry, Institut Gustave Roussy, Villejuif, France, [2]Department of Otorhinolaryngology and Head and Neck Surgery, Institut Gustave Roussy, Villejuif, France and [3]Department of Pathology, Institut Gustave Roussy, Villejuif, France

* Corresponding author

This abstract is available from: http://www.headandneckoncology.org/content/1/S1/O14

Aim
Confocal Endomicroscopy (CEM) is a non invasive imaging tool enabling "optical biopsies" of tissues at cellular level. Clinical studies have successfully reported the accuracy of CEM for the characterization of gastrointestinal, dermatologic and ocular diseases. In this study, we assess the potential use of endomicroscopy in combination with fluorophores clinically approved, to characterize premalignant and malignant lesions in human larynx.

Materials and methods
Twenty-seven fresh pharyngo-laryngectomy surgical specimens were obtained. Normal mucosa, premalignant lesions, and tumoral squamous cell carcinoma were analysed. Five different dyes able to stain cell structures or extracellular matrix were evaluated alone or combined. En face images were achieved using both fibered confocal microscopy and conventional confocal microscopy. CEM and confocal images were then compared to the corresponding histological sections.

Results
In normal mucosa samples, a homogeneous and regular nuclear distribution was showed in squamous epithelium with both CEM and confocal imaging. Expected changes in cell density were also seen in basal, intermediate and superficial layers. Imaging of squamous cell carcinoma provided clear information on the heterogeneous distribution of tumour cells surrounded by stroma. Cellular anomalies and disorders of keratinisation such as dyskeratosis and keratin pearls were also discerned by CEM and the images corroborated with histological data.

Conclusion
Our results demonstrated the promising use of fluorescence endomicroscopy for discriminating cancerous and non cancerous region in larynx.