DERMATOLOGICAL SURGERY

EX-VIVO FLUORESCENCE CONFOCAL MICROSCOPY FOR INTRA-OPERATIVE REAL TIME DIAGNOSES OF CUTANEOUS INFLAMMATORY DISEASES

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Introduction: Ex-vivo fluorescence confocal microscopy (FCM) is an emerging diagnostic tool, which offers real time images with nuclear level resolution of fresh tissue excision while maintaining the integrity of the biopsy. While this tool is already widely used to analyze a wide range of neoplastic and non-neoplastic lesions, it has never been applied to cutaneous inflammatory diseases.

Objective: To identify histopathological key-features for the diagnosis of inflammatory skin diseases on images generated by FMC, in order to anticipate the beginning of the treatment by reducing the waiting time between the biopsy execution and the histopathology diagnosis.

Materials and Methods: 20 cutaneous lesions, suspected for inflammatory diseases and obtained from the Dermatology Unit of Modena, were examined with the ex-vivo FCM. Ex-vivo FCM and histological images were correlated with histopathological diagnoses, in order to evaluate agreement and the expertise level required for correct diagnoses.

Results: The ex-vivo FCM has some technical limitations, depending upon the skill of the operator and the poor image quality. Also the use of fresh tissue may limitate the evaluation of some features, which are actually enhanced by histopathology process artifacts. Despite these limits, both ex-vivo FCM and histological evaluations reached a substantial agreement with histopathological diagnoses for all rates and each operator.

Conclusions: Ex-vivo seems a promising tool in assisting in cutaneous inflammatory lesions diagnosis, with a level of accuracy quite close to that offered by histopathology. Furthermore, the technical addition of higher magnification objective should improve image quality and the ability to identify details.