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Ex vivo confocal microscopy imaging to identify tumor tissue on freshly removed brain sample.

Forest F, Cinotti E, Yvarel V, Habougit C, Vassal F, Nuti C, Perrot JL, Labeille B, Péoc'h M., J Neurooncol. 2015 Jun 2.

ABSTRACT

Confocal microscopy is a technique able to realize "optic sections" of a tissue with increasing applications. We wondered if we could apply an ex vivo confocal microscope designed for dermatological purpose in a routine use for the most frequent brain tumors. The aim of this work was to identify tumor tissue and its histopathological hallmarks, and to assess grading criteria used in neuropathological practice without tissue loss on freshly removed brain tissue. Seven infiltrating gliomas, nine meningiomas and three metastases of carcinomas were included. We compared imaging results obtained with the confocal microscope to frozen sections, smears and tissue sections of formalin-fixed tissue. Our results show that ex vivo confocal microscopy imaging can be applied to brain tumors in order to quickly identify tumor tissue without tissue loss. It can differentiate tumors and can assess most of grading criteria. Confocal microscopy could represent a new tool to identify tumor tissue on freshly removed sample and could help in selecting areas for biobanking of tumor tissue.