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TUMOR OF THE BRAIN IN THE CHLIDREN

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Introduction: Most current research on human brain tumors is focused on the molecular and cellular analysis of the bulk tumor mass. However, there is overwhelming evidence in some malignancies that the tumor clone is heterogeneous with respect to proliferation and differentiation. In human leukemia, the tumor clone is organized as a hierarchy that originates from rare leukemic stem cells that possess extensive proliferative and self-renewal potential, and are responsible for maintaining the tumor clone. We report here the identification and purification of a cancer stem cell from human brain tumors of different phenotypes that possesses a marked capacity for proliferation, self-renewal, and differentiation. The increased self-renewal capacity of the brain tumor stem cell (BTSC) was highest from the most aggressive clinical samples of medulloblastoma compared with low-grade gliomas. The BTSC was exclusively isolated with the cell fraction expressing the neural stem cell surface marker CD133. These CD133+ cells could differentiate in culture into tumor cells that phenotypically resembled the tumor from the patient. The identification of a BTSC provides a powerful tool to investigate the tumorigenic process in the central nervous system and to develop therapies targeted to the BTSC.

Material and methods: The segmentation of brain tumors in magnetic resonance images (MRI) is a challenging and difficult task because of the variety of their possible shapes, locations, image intensities. In this Review paper, it is intended to summarize and compare the methods of automatic detection of brain tumor through Magnetic Resonance Image (MRI) used in different stages of Computer Aided Detection System (CAD). Brain Image classification techniques are studied. Existing methods are classically divided into region based and contour based methods. These are usually dedicated to full enhanced tumors or specific types of tumors. The amount of resources required to describe large set of data is simplified and selected in for tissue segmentation.

Results: Experience has shown EEG to be somewhat reliable in localizing lesions involving superficial portions of the cerebral hemispheres, though it is of limited value in deep-seated lesions, especially posterior fossa tumors. The role of EEG in detecting focal cerebral disturbances has undergone a significant change since the development of CT scan and MRI. Today EEG is used primarily to complement these studies by evaluating functional changes in the patient's condition; it demonstrates aspects of brain physiology that are not reflected in structural neuroimaging. Functional neuroimaging techniques, such as positron emission tomography (PET), single-photon emission computed tomography (SPECT), and functional MRI (fMRI), can exhibit physiologic changes but not with the temporal resolution of EEG. Furthermore, EEG provides the only continuous measure of cerebral function over time.

Conclusion: the brain tumor is located in a place that makes it accessible for an operation.In some cases, tumors are small and easy to separate from surrounding brain tissue, which makes complete surgical removal possible. In other cases, tumors can't be separated from surrounding tissue or they're located near sensitive areas in your brain, making surgery risky. In these situations your doctor may try to remove as much of the tumor as is safe.Even removing a portion of the brain tumor may help reduce your signs and symptoms. In some cases only a small biopsy is taken to confirm the diagnosis.Surgery to remove a brain tumor carries risks, such as infection and bleeding. Other risks may depend on the part of your brain where your tumor is located.