

Take-home message

- Cerebral lymphoma rarely spreads outside the central nervous system.
- Cerebral lymphoma is a serious disease, but usually very sensitive to treatments, and potentially curable.
- This type of intracranial tumor is rare.



In Olea Sphere®?

Did You Know? Central Nervous System Primary Lymphoma

Primary cerebral lymphomas are mostly non-Hodgkin's lymphomas of type B to large cells. It is a malignant tumor that develops in the brain from **B** lymphocytes from the lymphatic system. Its location does not extend to other organs.

Cerebral lymphoma manifests itself by one or more mass effects. The tumor masses are frequently located centrally: gray nuclei of the central base, periventricular region and corpus callosum. These mass effects are generally well delineated, but they may have an infiltrative character.

In the majority of cases, the cause of the disease is unknown. Cerebral lymphoma, which is most frequently encountered in immunosuppressed patients (AIDS and transplant patients), is presently seen increased in immunocompetent persons.

The disease can occur at any age, with a peak frequency of around 65 years. Central nervous system primary lymphoma represents only 2% of non-hodgkiniens lymphoma and 5% of primary brain tumours.

Anatomical plane of infiltrating brain lymphoma



Symptoms

- Impaired speech and vision.
- Nausea and vomiting.
- Headaches.
- Cognitive impairment (loss of memory, mental confusion).

Possible treatments (in case of localized cancer)

- Radiotherapy remains the referent treatment and provides an excellent response, practically in all cases.
- A specific chemotherapy: using drugs based on methotrexate and cytarabine at high doses that will be able to reach the brain, which is usually not the case.
- Corticosteroids to destroy cancer cells and reduce cerebral edema.

Plugin Perfusion, Diffusion

The Brain Tumor Streamlined application allows a morphological analysis thanks to semi-automatic segmentation and a multiparametric analysis including:

- «Perfusion» plugin giving access to hemodynamics of cerebral parenchyma (picture 1). Cerebral blood volume (rCBV) in this region of interest (ROI) is normal (rCBVmax=0,7) because there is neo-angiogenesis. The specificity of the perfusion curve shows tumoral infiltration.

There is a disruption of the blood-brain barrier. In addition of the dynamic study, the calculated map K2 allows easy detection of contrast agent extravasation areas towards the intersitial area.

- «Diffusion» plugin emphasizing the limitation of diffusion with a decrease of Apparent Diffusion Coefficient (ADC) at the lesion position.

- Major interest of the multi-modal imaging to establish a differential diagnosis
- The spectroscopy (MRS) allow to characterize the cellular necrosis



ROI 1: Primitive cerebral lymphoma ROI 2: Healthy tissue

Sources: http://www.eseaulocorg/lymphome-cerebral-primitif http://sante-guerincotrelamille.com/v2/services-sante/article-santeaspiid_gueri=8499 http://www.fancelymphomeespoid/r/contenu/comprendre/comprendre/-le-lymphome-leslymphome-sculo-cerebrau-primitifs https://ymphome.orekatr/comprendre/lymphome-cerebral-primitifs https://ymphome-cerebralth du-SNC = http://www.lymphoma.acl/r/le-ymphome.s/les-del/ymphome.s/les-del/ymphomes/les-del/ymphomes/les-del/ymphomes/les-del/ymphomes/les-l