Primary Central Nervous System Lymphoma – Challenge in Neuroradiology

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Primary central nervous system lymphoma (PCNSL) belongs to the group of extranodal non-Hodgkin’s lymphoma, and the management of the disease is radically different from other central nervous system neoplasms. Owing to its varied appearance on imaging, diagnosis of PCNSL can be challenging. The purpose of this overview is to depict the brain findings of PCNSL during initial diagnosis in immunocompetent individuals. Multimodal imaging integrating advanced sequences can facilitate differentiation of PCNSL from other CNS neoplasms.

Typical and atypical image findings will be discussed with different case presentations. Some unusual presentations of PCNSL are covered.

In immunocompetent patients, cranial MRI with contrast enhancement typically shows intense and homogeneously enhancing single lesions (70%) or multiple lesions (30%) with modest surrounding oedema, usually located in periventricular areas and/or deep grey matter (Haldorsen 2011; Bühring 2001; Küker 2005). PCNSL often has a characteristic appearance on both CT and MR imaging. This is due to its hypercellularity, high nuclear/cytoplasmic ratio, disruption of the blood-brain barrier, and its predilection for the periventricular and superficial regions, often in contact with ventricular or meningeal surfaces (Haldorsen 2011).

Different diagnostic criteria will be discussed with the accent on the role of radiologist in multidisciplinary team.

Overview of the current situation in Estonia according to the work of our colleagues “Primary CNS lymphoma treated at Estonia 2008-2013” is given.

There are approximately 5,3 newly diagnosed cases every year in Estonia. Intensive chemotherapy provides good treatment results with tolerable toxicity. There are diagnostic difficulties due to tumour localization and the treatment toxicity among elderly people. Diagnosis and treatment of CNS lymphoma patient requires a multidisciplinary team with expertise in haematology, neurosurgery, radiology, pathology and radiation oncology.