cytological evaluation during surgical procedure has been made by analyzing 98 cases of stereotactic biopsies performed in the Clinical Military Hospital in Bydgoszcz and the results of those examinations were compared with final histopathological and immunohistochemical results. We considered the materials derived by stereotactic biopsy and causes of possible diagnostic mistakes. We were satisfied that comparison of the results of cytological evaluation of smears with histopathological evaluation of paraffin-embedded sections made the accurate pathomorphological diagnosis possible and determined kind of tumor and its stage of malignancy in 91.4% of cases. Intraoperational cytological evaluation has a significant effect on therapy in majority of our cases. The high percentage (81.3%) of accurate cytological diagnoses has been shown by comparison to results of histological evaluation. Thanks to the possibility of use of various methods of morphological diagnosis, stereotactic biopsy is reliable in brain tumor diagnosis.

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Brachytherapy in inoperable deeply localized brain tumors

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The stereotactic biopsy of intracranial lesions and interstitial irradiation of gliomas and metastatic brain tumors have been introduced to use in Department of Neurosurgery of Military Clinical Hospital in Bydgoszcz since November, 1996 (the last in cooperation with Department of Brachytherapy of Regional Oncology Center in Bydgoszcz). Catheter for isotope implantation is applied using stereotactic method with Reichert-Mundinger stereotactic frame made by MHT. Histopathological estimation of materials obtained by stereotactic biopsy is made on the basis of cytological smears stained with methylene blue and performed during surgical procedure. Brachytherapy is made with iridium 192 isotope. Catheter has been inserted into the center part of tumor and then it is sutured to the skin. Iridium 192 is applied through this tube for 4-5 days, 3 times a day for several minutes. Gliomas at diameter up to 4 cm and isolated brain metastases which localization was dangerous for open surgical procedure or in patients with contraindications against radical procedure under general anesthesia were qualified to brachytherapy. The cases of regrown gliogenous tumors after classical surgery and external irradiation were also being qualified to brachytherapy. Brachytherapy was applied in 75 (76.5%) of 98 stereotactic procedures, from which 21 (21.4%) of tumors were placed in deep brain areas. Histopathological examination decided about using brachytherapy as well dosage and time of irradiation. Those cases have been considered as unsuitable for effective treatment till today, thanks to stereotactic device they can be successfully treated at present. The obtained results are encouraging and these indicate that this technique is safe and considering its effectiveness can be alternative or additional method in open surgery treatment.

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Xanthomatous changes in atypical and anaplastic meningiomas. Light and electron microscopic study.

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Lipidization of the tumor cells represents an uncommon but well-known phenomenon in a variety of primary CNS neoplasms. Metaplastic variants of meningiomas with lipomatous and/or xanthomatous changes have been sporadically reported only in cases with benign histological and clinical tumor behavior.

In this report we present morphological and immunohistochemical studies of surgical specimens in 5 cases of histologically malignant or atypical meningiomas with extensive xanthomatous changes. All tumors revealed admixture of ordinary meningiomatous parts and the areas of lipid-laden, xanthomatous cells. These cells of foamy appearance with centrally situated nuclei could be distinguished morphologically and immunohistochemically from mature adipocytes. Nevertheless, some foamy cells disclosed bizarre or stellate, hyperchromatic nuclei displaced peripherally. Electron microscopic study revealed numerous, small round to oval lipid droplets, accumulated in xanthomatous tumor cells. The fine structural features of meningothelial cells as formation of intercellular junctions and plasmalemmal interdigitations could be detected in lipid-filled cells. Occasionally, a few lipid droplets were also observed in the cytoplasm of typical meningothelial tumor cells. Immunohistochemically, the xanthomatous cells exhibited positive reactions for CD68 antigen and vimentin.

The authors discuss the histogenesis of the xanthomatous cells and the possible clinical behavior implications depending on the tumor cell transformation to xanthomatous changes or mature adipose tissue in the metaplastic variants of meningiomas.

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Progressive multifocal leukoencephalopathy in the course of AIDS

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Progressive multifocal leukoencephalopathy (PML) belongs to the group of most common AIDS-associated opportunistic CNS infections and is considered to be one of the most destructive. Its frequency varies in different neuropathological collections of AIDS cases from 1.0% up to maximally 11%, however, in the majority of them it does not exceed 4-6%.

In our collection containing 172 neuropathologically verified brains of adult patients aged 28-64 years, dead in the course of AIDS in 1987-1997, PML was encountered in 16 cases (9.3%), which is within the range of frequencies stated by other authors. White matter abnormalities in our PML cases ranged widely in extension and intensity of myelin damage from small limited foci of myelin pallor to large confluent fields of demyelination sometimes associated with severe tissue disintegration and its cavitation. Among our 16 PML cases 7 exhibited extensive demyelination of cerebral or cerebellar white matter just at the brain cutting, 3 were grossly normal, 7 presented lesions having evidence of different pathological syndromes (malignant lymphoma, necrotising toxoplasmosis or others). Taking into account the before mentioned differences in the dynamics of demyelinating process and differences in their morphological pattern, we have divided our PML cases into two groups. The first group comprised 7 cases with grossly visible demyelination with macroscopic features typical for the progressive and advanced course of the disease. Among 7 cases of this group in 5 PML presented the only pathological syndrome, in one PML coexisted with severe aspergillosis and in one it coexisted with HIV-specific syndrome with the presence of HIV-multinuclear giant cells within PML lesions and outside of them. Despite abundant accumulation of lymphocytes and macrophages in cases of this group we did not find confirmation of the hypothesis concerning the possible participation of these cells in

the development of productive HIV-infection in brains of AIDS patients, present in one case only.

The second group comprised 9 cases with and without foci of white matter damage of different etiology. PML lesions in cases of this group were rather small, spread mainly in the cerebral white matter involving preferentially cortico-subcortical junction. They exhibited neuropathological features characteristic for early stages of PML development. It seems possible that such early changes having no clinical and radiological exponents could be overlooked at routine neuropathological examinations, especially in cases with additional massive brain pathology.