PATHOLOGICAL ANALYSIS FOR PILOMYXOID VARIANT OF ANAPLASTIC OILGOASTROCYTOMA

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[Background] Pilomyxoid astrocytoma (PmX), a variant of pilocytic astrocytoma, has prominent mucoid matrix and characteristic angiocentric arrangement of monomorphous, bipolar cells, and is typically found in the hypothalamic/chiasmatic region in the very young patients. Here we present the several cases of anaplastic oligoastrocytoma (AOA) which occurred in the adult cerebral hemisphere and representing histological pattern similar to PmX.

[Design] We have analyzed 8 cases of AOA exhibiting angiocentric and microcystic pattern with mucoid background, in comparison with pilocytic astrocytoma and pilomyxoid astrocytomas, by immunostaining for GFAP, Olig-2 and MIB-1 (Ki-67).

[Results] The range of the patients' age was between 20 and 75 y. The sex ratio was almost equal. In HE stain, tumor cells possess relatively small round nuclei and stellate cytoplasm. Dense aggregates of tumor cells with vascular proliferation were scattered as well as microcystic pattern and characteristic angiocentric pattern. These histological appearances was similar to PmX. In mucoid region, GFAP(+) Olig-2(-) stellate tumor cells showed perivascular arrangement, surrounded by GFAP(-) Olig-2(+) small round tumor cells. MIB-1 index were high as 15 – 40 %.

[Conclusions] We have diagnosed these case AOA based on the mixture of GFAP(+) stellate cells and Olig-2(+) small round cells as well as histological appearance. Higher MIB-1 index also support that these tumor should be categorized in malignant glioma such as AOA; a WHO Grade III tumor, therefore, these tumor are clearly distinguished from PmX, Grade II benign glioma. These results suggest a possible new subgroup in AOA.