

e-3. Intracranial Granuloma

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Thirteen cases of intracranial granulomas have been experienced in our clinic in which 11 cases of cerebral paragonimiasis were included. The classification is shown as follows;

Paragonimiasis	11
Tuberculoma	1
Mucormycosis	1

Cerebral paragonimiasis is predominantly found in children and young adults. There were 9 males and 2 females in this group, in which 7 cases were under twenty-year old. The most frequent initial neurological symptom was found to be a Jacksonian fit which was seen in 8 cases. Homonymous hemianopia was also found in 8 cases.

The biological test (interdermal test) was performed in 8 cases and all cases revealed positive results. The most outstanding diagnostic feature on the plain skull films was an intracranial calcification, which was characterized by round or congregated multiple increased densities ranging from 1 to 3 cm in diameter. Such calcifications were found in 8 cases in the present series. In only 3 patients paragonimus westermani ova were demonstrated in sputa. Neurosurgical interventions were done on nine patients. Including nonoperative cases, the localization of intracranial lesions varied in the following order; 6 cases in occipital, 4 in temporal (in 2 cases they extended further to occipital area), 1 in posterior parietal and 1 in frontal region. An instance involved in pineal region was confirmed postmortem examination. Paragonimus ova were seen in all operated specimens. In only a case fluke bodies were demonstrated in granulomatous lesions.

Paragonimiasis (pulmonary distomiasis) is caused by paragonimus Westermani. Occurrence of paragonimiasis is limited to persons who eat fresh water crayfish or crabs raw since they are second intermediate hosts for paragonimus Westermani. While this parasite invades lungs in majority of cases, central nervous system involvement is also reported infrequently, especially in the Far East where pulmonary paragonimiasis is widely distributed.

Tuberculoma: A 36 year-old man, who complained of headache and vomiting, was admitted. Bilateral papilledema and increased intracranial pressure (680 mmH₂O in lumbar puncture) were demonstrated with right abducens palsys. Positive ventriculography and carotid angiography gave the information suspecting a space-occupying lesion in the atrial region of the right lateral ventricle. The tumor was extirpated and histological examination revealed the typical structures

of tuberculoma. The patient died from subsequent tuberculous meningitis.

Mucormycosis: This case was a 53 year-old woman without definite diabetes mellitus. A year and three months prior to admission she had recognized right hemicrania and ipsilateral ocular pain. She had undergone the operation twice under the diagnosis of glaucoma prior to admission. Plain films suggested only slight inflammation of right ethmoid sinus. Intracranial pressure was found to be 200 mmH₂O by lumbar puncture. Right carotid angiogram demonstrated a mass lesion within the right middle fossa. Microsections of extirpated granulomatous tissues revealed the sporadic necrotic lesions with polynuclear cell infiltrations surrounding them, and massive proliferation of broad nonseptate branching hyphae. The patient ran a rapid fulminating fatal course at 56th day post-operatively.

e-4. Intracranial Hemangiopericytomas: Clinical and Pathologic Observations

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Although the hemangiopericytoma was first noted by Stout and Murray in 1942 in the soft tissue, the independent intracranial variety was not reported until the work of Beggs and Garret in 1954. There have been few subsequent descriptions of such intracranial lesions, except for the 25 cases reported by Kernohan and Uihlein in 1962 from the Mayo Clinic. There is reason to believe, however, that some of the tumors previously reported as angioblastic meningioma, malignant meningioma, supra-tentorial hemangioblastoma and sclerosing hemangioma of the central nervous system were really intracranial hemangiopericytomas. Since 1962, 13 more patients with this tumor have been seen at our Clinic, bringing the total to 38. All 38 patients underwent craniotomy and subsequently autopsy was performed in four cases for verification.

Grossly, the tumor varied in size and its consistency and appearance was similar to that of the meningioma. Most of the tumors were attached to the leptomeninges and dura. Some were believed to be in the substance of the brain, without meningeal attachment. Microscopic characteristics of the tumor were similar to those of hemangiopericytomas found elsewhere in the body. The basic histologic pattern of the tumor was characterized by the presence of many capillaries lined by flattened endothelium and many medium-sized cells, with scanty amount of cytoplasm, filling the spaces between the capillaries. These cells contained rounded, elongated, or lobulated nuclei pointed in various directions. Each nucleus had a prominent nuclear membrane and small nucleoli. Characteristically, the cells were collapsed and required reticulin stain for demonstration. In some areas, large anastomosing blood vessels, also lined by flattened endo-