INTRAOPERATIVE CYTOLOGY OF C.N.S. TUMOURS

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Nothing can be a greater value to a neurosurgeon than the ability to visualize, immediately, from the gross appearances of a tumor what will be its histological nature. Too great emphasis cannot be laid on this.

Eisenhardt L., Cushing H. *Diagnosis of intracranial Tumors by supravital technique*. Am J Path 1930
The several small and usually rather soft pieces of tissue obtained are eminently suitable for preparation of smears and no for frozen sections.
INTRAOPERATIVE CITOLOGY OF CNS (ADVANTAGES)

- It’s fast.
- It’s cheap.
- It uses smaller amounts of tissue.
- Yields beautiful cellular detail.
- No freezing artefact.
- Biopsy can be screened much more widely.
INTRAOPERATIVE CITOLOGY OF CNS (DRAWBACKS)

- Architectural details are lost.
- Some lesions just don’t smear well.
INTRAOPERATIVE CITOLOGY OF CENTRAL NERVOUS SYSTEM

➢ Permits definitive diagnosis in many cases.

➢ Is helpful in complementing the cryostat sections in most cases.

➢ Is not helpful in only few instances.
BRAIN TUMORS

- Gliomas
- Meningiomas
- Neurinomas
- Embrional tumours
- Metastatic tumours
ASTROCYTIC TUMORS

- Astrocytoma
- Anaplastic Astrocytoma
- Glioblastoma
ASTROCYTOMA
ANAPLASTIC ASTROCYTOMA
INITIAL NECROSIS
MICROVASCULAR PROLIFERATION
CONVOLUTED NUCLEI
MONOPOLAR CELLS
Glioblastoma: Cytology

- Highly cellular smears
- Necrosis
- Microvascular proliferation
- Convoluted nuclei
- Monopolar cells
GIANT CELL GLIOBLASTOMA

KLAUS JOACHIM ZÜLCH

“MONSTRUOCELLULAR SARCOMA”

GIANT CELL GLIOBLASTOMA
MULTIPOLAR (GLIAL) CELLS
Ependymoma
¡NO CLEAR CYTOPLASM!
NO FIBRILAR BACKGROUND
OLIGO-DENDRO-CITO: “Cell with short and scanty processes”
MENINGIOMA
EMBRYONAL TUMOURS
(P.N.E.T.)
BRAIN METASTASES

- Respiratory tract: 50%
- Breast: 15%
- Skin/melanoma: 11%
- Unknown primary site: 11%
METASTATIC CARCINOMA
EPIDERMOID LUNG TUMOR
BREAST CARCINOMA
Neuropatology and Neurocitology always together.

The pathologist who interprets cytologic or tissue sections based solely on the knowledge that the patient harbors a “brain tumor” is inviting disaster.
MUCHAS GRACIAS