MALIGNANT CELLS IN CEREBROSPINAL FLUID (CSF): THE MEANING OF A POSITIVE CSF CYTOLOGY

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We reviewed the correlation between malignant cells in cerebrospinal fluid (CSF) (positive cytology) and pathologic findings at autopsy. The purpose was to discover: (1) the incidence of negative CSF cytology in patients with CNS malignancy, (2) the incidence of false-positive cytology, and (3) the relationship between a true-positive cytology and the distribution of malignant tumor at autopsy. Of 117 patients with CNS tumor and premortem cytologic examination of the CSF, 31 (26 percent) were positive and 86 (74 percent) were negative. Only 1 of 66 patients with tumor that did not reach the leptomeninges had a positive cytology. Of 51 patients with leptomeningeal tumor at autopsy, cytology was positive in 30 (59 percent) and negative in 21 (41 percent). Five potentially “false-positive” cytologies were encountered: Three patients were treated, and tumor may have been eradicated; in two patients with lymphoma, inflammatory cells associated with infection were apparently mistaken for malignant cells. These data indicate that a positive CSF cytology is a reliable indicator of CNS malignancy and almost always reflects leptomeningeal tumor.

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Comment from Robert A. Gross, MD, PhD, FAAN, Editor-in-Chief: A description of CSF cytology in the diagnosis of CNS tumors; a frequently cited study.

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