Extraneural metastases of primary central nervous system tumors identified by fine needle aspiration: a retrospective analysis.

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Abstract

OBJECTIVE: Extraneural metastasis (EM) of primary central nervous system (PCNS) neoplasms is rare and signifies a poor clinical outcome. Due to its infrequent occurrence, relatively few reports on the cytomorphology of these neoplasms have been published. We describe a series of 19 cases from 16 patients at a single, large tertiary care center.

STUDY DESIGN: A retrospective analysis of 19 cases of metastases from PCNS neoplasms identified on fine needle aspiration (FNA) in 8 male and 8 female patients aged 14-72 years (mean age 39.6) from 1989 to 2013 was conducted to further characterize the cytomorphologic features identified at metastatic sites.

RESULTS: Six different PCNS neoplasms were identified: meningioma, glioblastoma, hemangiopericytoma (HPC), oligodendroglioma, medulloblastoma, and retinoblastoma. The mean latency period between the diagnoses of the primary and first metastatic tumors was 7.4 years (range 0-15). The most common PCNS malignancy responsible for EM was HPC. The most common metastatic sites were the lung (31%) and soft tissue/bone (31%).

CONCLUSIONS: EM of PCNS tumors is extremely rare. FNA allows for quick, safe and accurate diagnosis. Cytomorphologic features are characteristic, and in conjunction with the clinical history and immunohistochemistry, an accurate diagnosis was obtained in 100% of the cases.