

**49th ANNUAL DIAGNOSTIC SLIDE SESSION, 2008
DIAGNOSES AND REFERENCES**

**MODERATOR: Anthony T. Yachnis, M.D.
EDITOR: Leroy R. Sharer, M.D.**

Case 2008-8

Submitted by: Gabrielle Yeane, M.D., and Kathryn McFadden, M.D., Presbyterian University Hospital, University of Pittsburgh Medical Center, Pittsburgh, PA

Diagnosis: Diffuse malignant Schwannian leptomeningeal sarcomatosis

Comment: From the Presenter: This NF1 patient had a diffuse malignant leptomeningeal infiltrate of Schwannian cells with deep extension into Virchow-Robin spaces. Cerebral, cerebellar and brain stem surfaces were involved, and vessels were particularly affected, such that the patient presented with ischemic and vasculopathic disease prior to death. Immunohistochemical stains showed that the tumor cells strongly expressed S-100 and vimentin. A few intratumoral axons stained for neurofilament, but these may have been entrapped. There were many negative immunostains including EMA, GFAP, SMA, Melan A, HMB45, CD31, CD34, CD68, AE1/AE3, CAM5.2 and wide-spectrum pankeratin. Ki-67 showed a tumor cell proliferation index of 10%. Further staining showed intact INI-1 and no p53 reactivity. Electron microscopy showed no intercellular junctions. Molecular studies revealed a somatic mutation in the tumor cells and showed loss of heterozygosity for chromosome 22q. This case illustrates an NF2-like lesion occurring in a patient with NF1.

In discussion from the audience, Drs. Mark Cohen and Arie Perry suggested that the vasculopathy might be radiation associated. There was a soft tissue mass of the upper spine, raising a question of possible metastatic MPNST, but the Presenter noted that autopsy was limited to brain.

References:

Evans DGR, Baser ME, McGaughan J, Sharif S, Howard E, Moran A: Malignant peripheral nerve sheath tumours in neurofibromatosis 1. *J Med Genet* 2002; 39: 311-314.

Ferner R: Neurofibromatosis 1 and neurofibromatosis 2: a twenty first century perspective. *Lancet Neurol* 2007; 6:340-351.

Kindblom LG, Ahldén M, Meis-Kindblom JM, Stenman G: Immunohistochemical and molecular analysis of p53, MDM2, proliferating cell nuclear antigen and Ki67 in benign and malignant peripheral nerve sheath tumours. *Virchows Arch* 1995; 427:19-26.

Wu CL, Thakker N, Neary W, Black G, Lye R, Ramsden RT, Read AP, Evans DGR: Differential diagnosis of type 2 neurofibromatosis: molecular discrimination of NF2 and sporadic vestibular schwannomas. *J Med Genet* 1998; 35:973-977.

Note: Dr. Yeane received the fourth annual O.T. Bailey-Helena Riggs Award for best presentation by a trainee at the Diagnostic Slide Session, selected by vote of the Charter Members of the Diagnostic Slide Session and presented at the awards ceremony on April 7, 2008.