Prestin Could Be Used as a New Biomarker for Choroid Plexus Tumors

Dongguang Wei and Rodney Diaz, MD; University of California Davis, Medical Center

Introduction: Most choroid plexus (CP) neoplasms are papillomas (CPPs) that show a characteristic columnar epithelium sitting on a fibrovascular network and forming multiple papillary projections. However, some atypical CPPs and choroid plexus carcinomas (CPCs) show typical architectural and cytological features and mimic other neuroepithelial neoplasms. A specific biomarker of CP neoplasms may help to improve the diagnosis.

Methods: Human and nonprimate CP tissue was used for this study. Human CP was collected from formalin-fixed, paraffin-embedded surgical specimens. Rhesus monkeys (Macaca mulatta) used for this study were housed at the California National Primate Research Center. CPs were obtained from wild-type rhesus monkeys that had undergone scheduled necropsy for unrelated purposes and had no demonstrated neurological deficits. The CP specimens were processed for immunofluorescent staining and scanning electron microscopy.

Results: Human and nonprimate CP cells all expressed prestin, a motor protein, which is responsible for amplification and frequency tuning in cochlea. CP cells also displayed enriched stereocilia-like microvilli localized to the apical membrane.

Conclusion: The stable cross-species expression of prestin in nonhuman primate and human choroid plexus epithelium suggests it could be used as a new biomarker for choroid plexus neoplasms.

Malignant Myopericytoma of the Vocal Cord—A Rare Lesion in a Rare Location: Case Report and Brief Review of Literature

Kanish Mirchia and Rana Naous, MD; SUNY Upstate Medical University

A 63-year-old male presented with a short history of hoarseness and was found to have a unilateral vocal cord lesion, which recurred within the first 6 months after an excisional biopsy. The lesion extended from the anterior commissure to the vocal process of the arytenoid cartilage. Repeat complete excision was performed using micro direct laryngoscopy. Histologic examination revealed a cellular spindle cell proliferation, arranged in nests and fascicles, with perivascular accentuation around elongated and branching small-caliber vessels. The tumor cells appeared infiltrative with extension into the surrounding skeletal muscle and displayed anisonucleosis, areas of pleomorphism, focal necrosis, and increased mitotic activity with atypical mitotic figures. By immunohistochemistry, the cells were positive for smooth muscle actin and calponin and negative for desmin and other markers to rule out other lesions, including angiomyoma and leiomyosarcoma. Malignant myopericytoma is an extremely rare tumor, which, to our knowledge, has never previously been reported in the vocal cord. It presents as a biologically aggressive lesion, with local recurrence and frequent metastases, composed of myoid-appearing cells of pericytic origin.

Pathologic Characteristics of Node-Positive Invasive Breast Carcinomas Associated With Extranodal Extension

Jenna Wade, MD; James Little, MD; Chao Zhang, PhD; Zhengjia Chen, PhD; Jane Meisel, MD and Krisztina Hanley, MD, FASCP; Emory University and Winship Cancer Institute

Objectives: Breast cancer is the most common malignancy in women. Extranodal extension (ENE) in nodal metastasis, defined as extension of carcinoma through the nodal capsule into the perinodal adipose tissue, has emerged as an important prognostic factor in various malignancies. Reporting presence and size of ENE in node-positive breast cancer is recommended, as it is associated with increased axillary nodal burden, disease recurrence, and mortality. Association of ENE with various clinicopathologic parameters has not been extensively studied. The aim of this study was to evaluate if the presence of ENE in node-positive breast cancer patients shows any correlation with primary tumor size, histologic type, grade, and hormone receptor status.

Methods: This retrospective study focused on patients diagnosed with node-positive invasive breast cancer who also had ENE. For each case, patients’ age, tumor size, type, grade, number of positive lymph nodes, presence of ENE, and ER/PR/HER2/Ki-67 status were recorded. These variables were analyzed using the chi-square test for categorical variables and two-sample t test for numerical variables, respectively.

Results: Pathologic characteristics of the 211 breast carcinoma cases were as follows: 170 of 211 (80.5%) invasive ductal, 35 of 211 (16.6%) invasive lobular, and 6 of 211 (2.8%) mixed lobular and ductal. Nottingham grades were 24 of 211 (11.4%) grade 1, 106 of 211 (50.2%) grade 2, 63 of 211 (29.8%) grade 3, and 18 of 211 (8.5%) not graded due to neoadjuvant treatment. ENE was present in 162 (76.8%) patients. When tumor parameters were compared between ENE+ and ENE− patients, the variables listed in Table 1 showed statistically significant differences between the two groups.

Conclusion: Our study suggests that ENE in node-positive invasive breast carcinoma is more likely to be seen in Her2-negative tumors. Size of primary tumor (T stage) and number of positive lymph nodes also correlate with the presence of ENE.