Solitary Fibrous Tumor of the Head and Neck: Institutional Experience of Two Referral Centers

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Background: Solitary fibrous tumors (SFTs) uncommonly present in the head and neck, and to date have been reported in limited numbers in the literature. Additionally, a number of lesions previously diagnosed in the head and neck as hemangiopericytomas (HPC), giant cell angiofibroma (GCA), and orbital fibrous histiocytoma (OFH) have been recently appreciated to be within the expanded spectrum of SFTs. Thus, we performed a comprehensive review of head and neck SFTs in order to more fully characterize their features and natural history.

Design: We performed a comprehensive search and review of lesions diagnosed as SFT, HPC, GCA, and OFH from 1985-2011 at the University of Michigan Health System (UMHS) and from 1982-2007 at the University of Pittsburgh Medical Center (UPMC). Cases were reviewed to confirm diagnoses, and data for clinical, histologic, immunohistochemical, and outcome parameters were recorded.

Results: A total of 47 cases with archival material were identified and reviewed (27 UMHS; 20 UPMC), with 21:26 male:female ratio and mean age 48.6±16.9y (range 15-92). Anatomically lesions involved the orbit (38.3%), sinonasal tract (23.4%), skull base (21.3%), oral cavity (14.9%), salivary or subcutaneous sites (each 10.6%), and parapharynx (4.3%), with 8/47 cases extending to multiple sites. Original diagnoses included SFT (62%), HPC (29.8), and OFH (8.5%). Predominant histologic pattern on review was classic SFT-like in 63.8%, cellular (former HPC-like) in 31.9%, and GCA-like in 4.3%. Nuclear pleomorphism/atypia was high in 21.3%, low in 27.6%, and absent in 51.1% of cases; necrosis was present in 17.5% and infiltrative grown in 45.2%. Immunostain for CD34 was positive in 29/34 (85.3%), BCL2 in 13/14 (92.9%), and CD99 in 10/12 (83.3%) cases with archival material. S100 was negative in 28/29 (96.5%), and both cytokeratins and SMA negative in 21/22 (95.4%). Follow-up data were available for 27 cases (median, 114mo.). Ten tumors recurred (37.0%), including one orbital case which metastasized to lung and parotid.

Conclusions: SFTs present in a wide anatomic distribution in the head and neck, and include a significant minority of cases showing cellular morphology, a feature associated with adverse outcome in a subset of SFTs from other anatomic sites. While the high rate of local recurrence identified likely reflects referral bias, it underscores the biologically intermediate malignant potential of these tumors and the importance of their recognition and need for complete excision and long term follow-up.

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