Intranodal palisaded myofibroblastoma with metaplastic bone formation

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Intranodal palisaded myofibroblastoma (IPM) is a rare benign mesenchymal neoplasm of lymph nodes with myofibroblastic/smooth muscle differentiation. It is generally characterized by proliferation of spindle cells with little pleomorphism, and a low mitotic rate, prominent interstitial hemorrhage, often accompanied by stellate areas of amianthoid fibers. Immunohistochemically, the tumor cells show positive immunostaining for smooth muscle actin (SMA) and vimentin and negative staining for S-100 protein, glial fibrillary acidic protein (GFAP), desmin, epithelial membrane antigen (EMA), and keratins.[1] We report herein the second known patient of IPM demonstrating metaplastic bone formation.

A 60-year-old; otherwise, healthy man presented to the Department of Surgery with a slow growing left inguinal mass. A lymph node was identified and excised to rule out a neoplasm. He was discharged without complication. He has been followed up for 14 months and is currently without recurrence. The excised specimen contained a single lymph node measuring 6 cm in its greater diameter. The cut surface showed a gray-white solid tumor with hemorrhagic areas. Microscopic examination demonstrated a fibroblastic spindle cell tumor. The spindled cells were arranged in short intersecting or crisscrossed fascicles and had elongated bland nuclei. Mitotic figures were not identified. The tumor had prominent acute hemorrhage admixed with hemosiderin-laden macrophages. Stellate, round, and bandlike paucicellular areas (amianthoid-like fibers) were scattered throughout the tumor. Subcapsular metaplastic lamellar bone was also noticed (**Figure 1**). Immunohistochemical stains demonstrated strong spindle cell positivity for vimentin and SMA. In addition, the amianthoid-like fibers displayed peripheral immunostaining for SMA. Stains for S-100 protein, GFAP, desmin, CD21, and cytokeratin were negative.

The IPM is a distinctive benign spindle cell tumor arising exclusively from the lymph nodes. The tumor may develop at any age with a slight male predominance. It typically presents as a localized swelling in the region of the groin, but a few cases have been described in the cervical and submandibular lymph nodes. Besides lymph nodes, IPM-like nodules with amianthoid features have been reported in the lung without recognizable lymph node constituents.[1,2] Primary nonlymphoid tumors of lymph nodes are uncommon and mostly include Kaposi sarcoma in human immunodeficiency virus-infected patients, benign melanocytic nevi, leiomyosarcoma, dendritic cell sarcoma, inflammatory myofibroblastic tumor, and malignant melanoma arising in displaced intranodal nevus cells.[3] Metastatic spindle cell sarcomatoid carcinomas, or even sarcomas, are more common than primary nonlymphoid neoplasms. We report a rare primary tumor that arises almost exclusively in lymph nodes in the groin. Recognition of this entity is of importance secondary to its potential confusion with metastatic or other primary neoplasms. The histogenesis of IPM is incompletely understood. The cells of origin are likely the myofibroblast or modified smooth muscle cell. This is supported immunohistochemically, as the tumor cells show positive immunostaining for vimentin and SMA, and negative staining for desmin, GFAP, S-100 protein and keratins. The predilection of IPM for inguinal lymph nodes is explained by the fact that the actin- and vimentin- positive and desmin negative myofibroblasts were present in increased numbers in inguinal lymph nodes compared with controls, which could be due to the increased drainage function in inguinal lymph nodes.[4] The following differential diagnosis could be excluded due to the presence of crystalline extracellular deposits (so-called amianthoid fibers) and immunohistochemical findings (only vimentin and SMA positivity in the present case): Kaposi sarcoma, leiomyosarcoma, benign metastasizing leiomyoma, intranodal schwannoma, metastatic spindle-cell lesions (carcinoma as well as malignant melanoma), and inflammatory myofibroblastic tumor.[1] The presence of metaplastic bone formation is rare. We believe the present patient to be the second reported instance of metaplastic bone

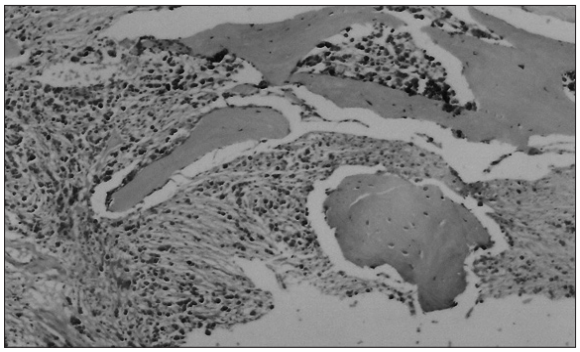

Figure 1 - High power view of metaplastic lamellar bone formation (Hematoxylin & Eosin, x400).

formation.[5] The bony elements in the tumor could raise the possibility of metastatic osteosarcoma or any other bone forming tumors; however, diagnosis can be easily made by microscopic examination.

In conclusion, knowledge of this tumor entity is important for differential diagnosis of primary and secondary malignant mesenchymal neoplasms of the lymph node. The clinical behavior of the tumor is benign and local excision is the treatment of choice.

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