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CASE REPORT
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Spindle Cell Lipoma of the Neck: Review of the Literature and Case Report

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Summary: Spindle cell lipomas (SCL) are benign, slow growing tumors arising most frequently in the subcutaneous tissue of the upper back, posterior neck, and shoulders in males aged 40–70 years. Local excision is generally curative. Classification of lipomatous tumors has progressed recently, and tumors of similar morphology and unusual presentation are increasingly reported, thereby making correct diagnosis even more vital. SCL require pathologic differentiation from liposarcoma, other spindle cell neoplasms, and myxoid lesions for treatment purposes. Cytology, histology, and cytogenetics, in conjunction with clinical presentation, are paramount in arriving at the correct diagnosis of spindle cell lipoma. We present a case report with characteristics typical of an SCL along with a literature review to further elucidate the diagnosis and surgical treatment of this soft tissue tumor. *(Plast Reconstr Surg Glob Open 2015;3:e550; doi: 10.1097/GOX.0000000000000405; Published online 5 November 2015.)*

Spindle cell lipomas (SCL) are relatively rare, slow growing, benign lipomatous tumors. These masses typically arise in males aged 40–70 years and originate most frequently in the subcutaneous tissue of the upper back, posterior neck, and shoulders.[1–3] SCLs account for only 1.5% of all reported lipomatous tumors, and these lesions share similar morphology with other fatty/spindle cell or myxoid lesions, benign and malignant.[3,4] Prognosis is uniformly favorable, and thus, wide local excision is the treatment of choice.[1,5] We submit an SCL case report and a review of the literature to better understand this soft-tissue tumor.

CASE REPORT

A 55-year-old male presented with a large dorsocervical mass (Figs. 1, 2) that had been present for 20 years. He requested treatment as this gradually enlarging mass increased in size rapidly over past year and was causing difficulty with sleep. He denied any history of other soft-tissue tumors and endocrine workup was within normal limits. He did imbibe 6 alcoholic beverages per week and smoked 2 packs of cigarettes per day.

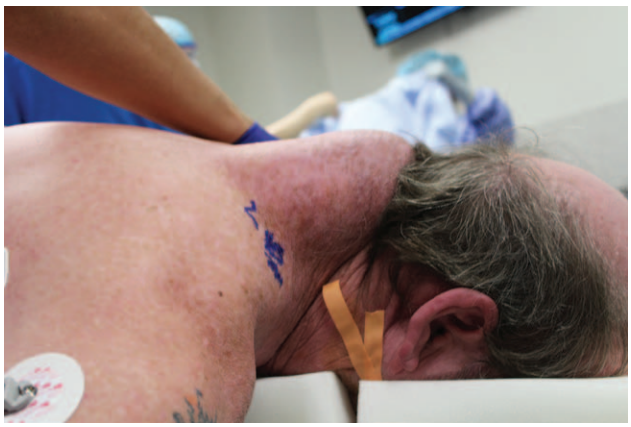

Fig. 1. Lateral view of the posterior cervical mass while patient prone for surgical excision.

On exam, a soft, mobile, 20×20 cm nontender mass with overlying telangiectasia, without bleeding,

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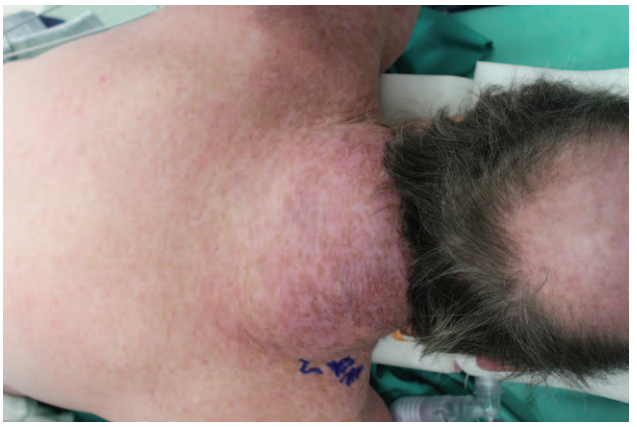

Fig. 2. Posterior view of the mass just before surgical excision.

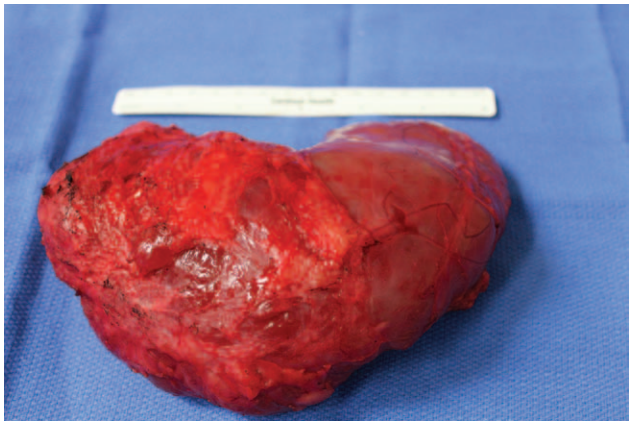

Fig. 3. Gross specimen of the spindle cell lipoma. The 16 × 9.1 × 6.5 cm specimen with cystic structure and a gel-like fluid.

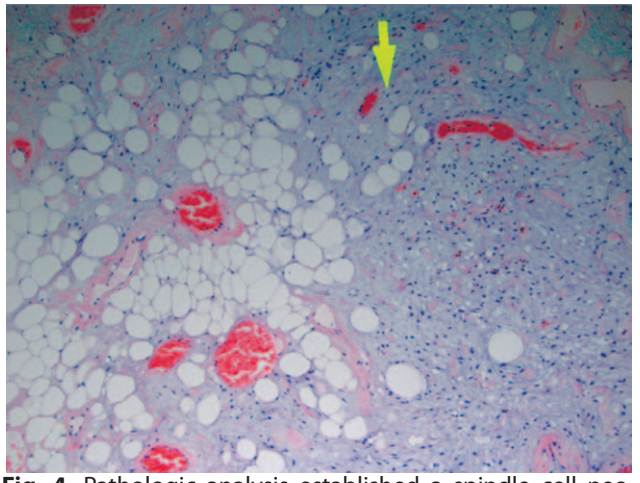

Fig. 4. Pathologic analysis established a spindle cell neoplasm with abundant myxoid stroma and cleft-like spaces. The cells were fairly monotonous, admixed with mature fat cells. No lipoblasts noted.

purulence, erythema, or ulceration was found. This was present within the posterior, lower neck. There was no lymphadenopathy.

After informed consent was obtained, the patient was taken to the operating room for excisional biopsy. An elliptical incision was made overlying the distended neck mass and extended until a capsule was identified. The mass and capsule were then dissected circumferentially and removed. The muscle fascia was not violated. The 16×9.1×6.5 cm specimen was noted to be a cystic structure containing a gel-like fluid (Fig. 3).

Pathologic analysis demonstrated a spindle cell neoplasm with abundant myxoid stroma and cleft-like spaces (Fig. 4). The cells were fairly monotonous, admixed with mature fat cells. No mitotic figures, nuclear atypia, necrosis, lipoblasts, or arborizing vascular proliferation was identified. Fluorescence in situ hybridization for carboxypeptidase M (CPM) was negative. The margins were not involved. Given the subcutaneous location of the tumor and the histology described, the reviewing pathology teams deemed the neoplasm a spindle cell lipoma.

Post procedure, the patient healed without issue, and given the diagnosis of SCL, no adjuvant treatment was required.

DISCUSSION

In 1934, Geschickter[6] recognized 2 major groups of lipoid tumors: lipomatous tumors composed of fatty tumor and xanthomatous tumors, which include fat necrosis and phagocytosis of fat. Categorization of these tumors has progressed with additions and changes in classification. Lipomatous tumors are a common group of mesenchymal lesions, the most common of which is a lipoma.[7] It has been argued whether spindle cells of SCL arise from fibroblasts or preadipocytes, yet there are no intermediates of the adipocyte and spindle cell, which argues against a continuum of development.[8]

Typical lipomas do not routinely yield diagnostic difficulty, yet those with unusual features, including SCL, may be mistaken with liposarcoma.[3,4,7] Furthermore, the histologic growth pattern and/or cytology of SCL may overlap that of other spindle cell tumors (schwannoma, neurofibroma, angiolipoma, dermatofibrosarcoma protuberans, solitary fibrous tumor, etc.) and myxoid lesions (myxoid liposarcoma, myxoid fibrosarcoma, myxoid neurofibroma, myxoma, etc.).[1,3,8,9]

Cytology, light and electron microscopy, and cytogenetic studies are tools used to aid in the differentiation of benign and malignant lipomatous tumors. Akin to our case, SCL are composed of 3 basic histologic components: mature adipocytes, uniform spindle cells, and bundles of collagen; prominent myxoid matrix is occasionally seen.[1,3,8] Mitotic figures are scarce.[8] A portion of diagnostic difficulty lies in the fact that SCL may show considerable variation in

the proportion of each component, yet the great majorities have significant amounts of mature adipocytes and spindle cells.[3,9] Other tumors with similar morphology are increasingly described, as are SCL of unusual sites, thus making correct differentiation vital.

Enzinger and Harvey[1] made the histologic distinction that spindle cell lipoma lacks the hallmark cell of liposarcoma, the lipoblast. Comunoglu et al[10] noted that CD34 positivity is a characteristic feature that occurred in all cases reviewed yet occurred rarely in liposarcoma. Nevertheless, Billings and Folpe[9] warned that CD34 positivity can be interpreted in an appropriate histologic context as it is relatively nonspecific and occurs in a variety of mesenchymal tumors. Cytogenetic analysis revealed SCLs typically have karyotypic aberrations including loss of material from the long arms of chromosomes 13 or 16, whereas the myxoid/round cell group of liposarcoma consists of t(12;16), and atypical lipomatous/well-differentiated liposarcomas and dedifferentiated liposarcomas contain amplified material of 12q13-15.[3,7,11,12] Pathologic analysis of our specimen utilized fluorescence in situ hybridization for CPM to facilitate ruling out liposarcoma. Erickson-Johnson et al[13] reported that CPM is consistently amplified in well-differentiated liposarcoma/atypical lipomatous tumors but not in ordinary or pleomorphic lipomas.

Magnetic resonance image appearance may vary from nonfatty and heterogeneous to lipoma-like, and thereby may be useful in evaluating the extent of lesion but not for establishing a specific diagnosis.[3] Fine needle aspiration cytology may be as characteristic as histology. However, with tumors in atypical locations, even aspirates containing all of the characteristic elements may be difficult to use for firm diagnosis of SCL. Domanski et al[3] report 12 patients who underwent fine needle aspiration before surgery; all 12 showed adipocytes, spindle cells, and collagen bundles/fibers. Yet, their aspirate contained considerable variation in proportion of these elements, and the myxoid matrix made it difficult to distinguish from other myxoid lesions. Excisional biopsy is recommended for definitive tissue diagnosis.

The largest pathologic series of SCL containing 144 patients noted that these lesions were well circumscribed, rarely encapsulated masses with a predilection of occurrence over the shoulders and posterior neck[1]; SCL are generally more superficially located than liposarcoma.[10] SCL are typically found in men over age 45 years, whereas lipomas, in general, occur more frequently in women and in a less characteristic anatomic distribution.[1] Two studies followed patients for up to 22[1] and 25[5] years after local surgical excision of the SCL. They reported a benign clinical course and concluded that treatment with local excision was curative.[1,5]

Familial cases of multiple SCLs presenting similar to Madelung's disease have been reported, but multiple lesions are exceedingly rare.[14] Case reports also exist for lesions occurring in unusual locations, such as the buccal mucosa, orbit, subungual tissues, breast, and scalp.[4,15–18] The vast majority of spindle cell lipoma literature is composed of clinical pathologic reviews.[1,3–5,7–9,11,12,19]

The rare diagnosis of SCL is primarily attained during the process of ruling out other neoplastic tumors via cytologic, histologic, and cytogenetic evidence and in conjunction with clinical presentation.

CONCLUSIONS

SCL are rare, benign lipomatous tumors. These masses mostly occur in the posterior neck, upper back, and shoulder region in males aged 40–70 years. A variety of cytogenetic tests are available as an adjunct to standard pathologic and clinical evaluation to support diagnosis. Local excision of SCL is considered curative.

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