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Spindle Cell Lipoma Involving the Larynx and Lateral Neck Space

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Spindle cell lipoma (SCL) is a rare lipoma variant that account for approximately 1.5% of all adipocyte-origin tumors; SCL usually occurs on the posterior neck or shoulder. The histological characteristics of SCL include mature, univacuolar fat cells and fibroblast-like spindle cells in a matrix of collagen and mucoid material. It is important to note that spindle cell lipoma can be mistaken both clinically and histologically for liposarcoma. We report here on a rare case of SCL in a 48-year-old male, and the patient presented with a large right neck mass that involved the lateral neck space and larynx.

Key Words : Lipoma; Larynx; Immunohistochemistry; CD34 antigen

Enzinger and Harvey first reported on spindle cell lipoma (SCL) in 1975,[1] and this tumor is known to be a rare lipoma variant that represent about 1.5% of all adipocyte-origin tumors.[2] SCL can be diagnosed by the histological findings of bland spindle cells with only mild nuclear atypia and a mature fat, in myxoid background with wiry collagen and mast cells.[3] There have been only four reported cases of SCL in the medical literature that occurred in the laryngeal and hypopharyngeal areas. We report here on a case of SCL that involved both the right lateral neck space and the aryepiglottic fold and false vocal fold, presenting as a lateral neck mass. It was successfully treated by surgical excision through a lateral neck incision.

CASE REPORT

A 48-year-old male patient was admitted to the Otolaryngology Department for an operation on a right neck mass that had been discovered 19 months earlier as a small nodule, and it had grown rapidly over the previous 12 months. He complained of aspiration on drinking and also a voice change after the rapid growth of the mass. On physical examination, a 10×8 cm-sized fluctuating mass was located on the right sternocleidomastoid muscle and a 2×1.5 cm-sized hard nodule was palpated in the inferior one-third portion of the large mass. When performing flexible fiberscopy, a well-circumscribed bean-sized yellowish mass was seen on the right aryepiglottic fold. The vocal cords' mobility was normal on both sides. On preoperative neck computed tomography, an 80×60×55 mm fat dense mass was located between the right sternocleidomastoid muscle and the right submandibular gland on the subplatysmal layer (Fig. 1). Additionally, the main mass was connected to a 26×28 mm-sized mass on the right false vocal fold and the paraglottic space.

We excised this mass via a right transcervical incision, and the tumor was totally removed after identifying and preserving the superior laryngeal nerve and vagus nerve. When dissecting the medial portion of the mass, adhesion of the mass to the thyrohyoid membrane was seen and a nearby pharyngeal mucosal injury was sutured with using 4-0 vicryl.

On gross examination of the tumor, it measured 11.0×7.5×4.5 cm, and it had an ovoid shape with a pale brown, smooth external surface. The cut surface showed a yellowish soft appearance (Fig. 2). Microscopically, the tumor was mostly composed of a mixture of mature adipose tissue and haphazardly arranged

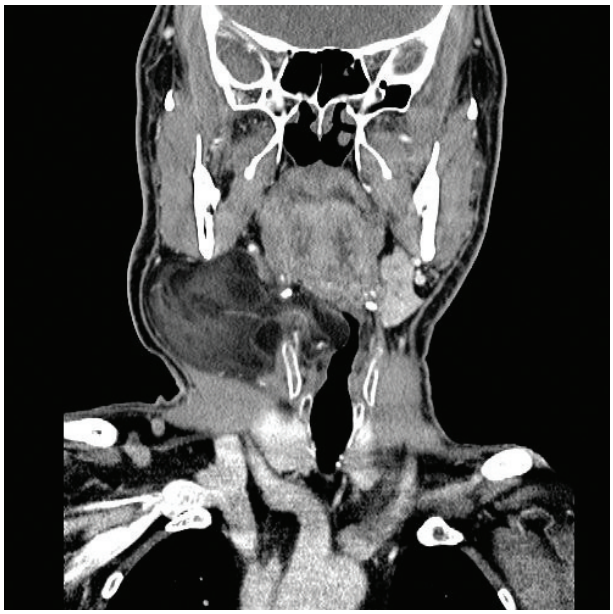


Fig. 1. Preoperative CT findings. A large heterogeneous mass, bordered medially by the pharynx, and superiorly by the mandible and parotid gland, is connected with a 25×33 mm-sized mass in the paraglottic fatty space.

spindle cells (Fig. 3A). In the centrally located cellular area, the spindle cells were congregated with short bundles of eosinophilic collagen, and blood vessels were sporadically seen (Fig. 3B). The spindle cells were uniform with a single elongated nucleus and a narrow, bipolar cytoplasmic process. Any lipoblasts were not

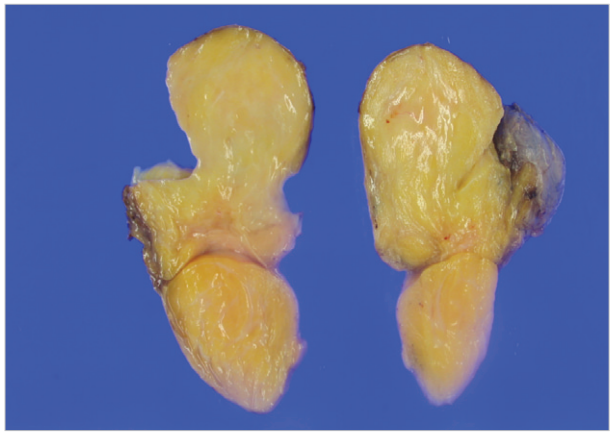
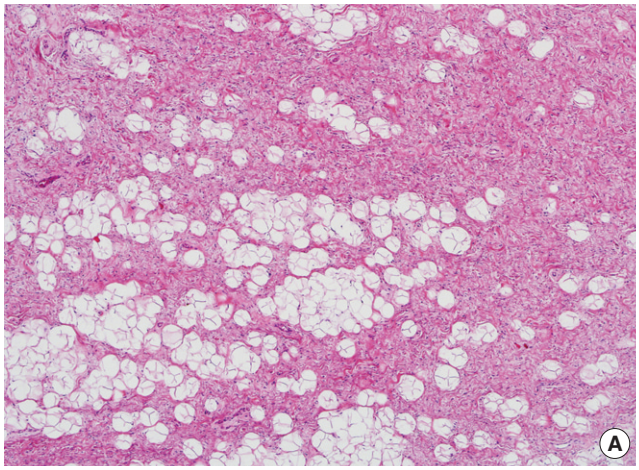
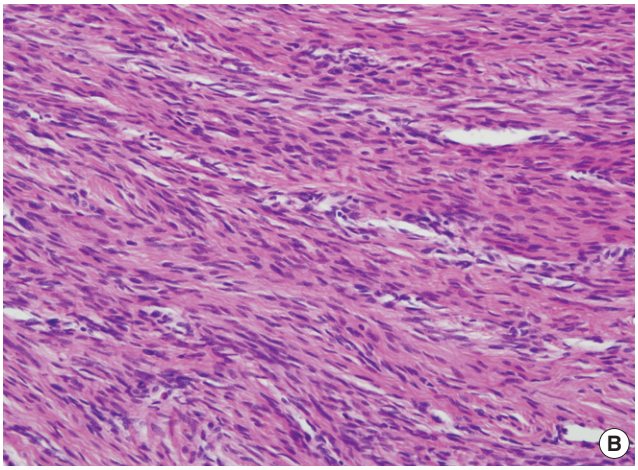


Fig. 2. The cut surface shows a well-circumscribed, soft, yellow and solid appearance.





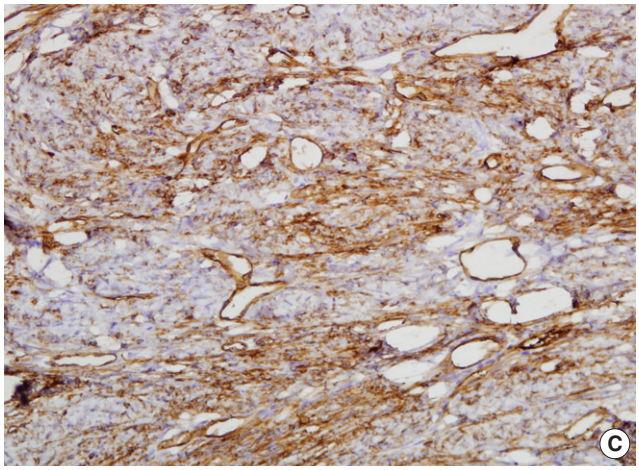


Fig. 3. (A) The tumor consists of a relative equal mixture of mature fat and spindle cells. (B) In the cellular area, spindle-shaped cells are congregated with short bundles of eosinophilic collagen, and blood vessels are seen sporadically. (C) The spindle-shaped cells show strong positivity on CD34 immuno staining.

seen. On immunohistochemical staining, the spindle-shaped cells were strongly positive for CD34 (Fig. 3C), and the adipocyte-rich areas were positive for S-100 protein. Additionally, none of the tissue stained for actin or CD99, leading to the diagnosis of SCL.

The patient did not show any sign of recurrence during 3 months of follow up.

DISCUSSION

SCL characteristically shows a male predominance and most SCL patients are in their sixth decade of life or older when diagnosed.[2] To the best of our knowledge, only four cases of SCL on the larynx have been reported in the English medical literature; the locations were the hypopharynx, vallecula and the dorsum of the tongue.[4,5] In this case, the main mass was on the lateral neck space, extending into the aryepiglottic fold and the false vocal fold, and the symptoms were the large neck mass, intermittent aspiration and voice change, which were all well correlated with the tumor location.

SCL is histologically characterized by a mixture of mature lipocytes and fibroblast-like spindle cells. These spindle cells are mixed with a varying number of collagen fibers in a hyaluronidase-sensitive, alcian blue-positive mucinous material.[1] Additionally, a striking infiltration of mast cells can be observed, and the vascular patterns are generally inconspicuous. Immunohistochemically, the spindle cells are positive for CD34 and they are negative for S-100 protein, actin or desmin.[1-3] This immunohitochemial feature is helpful to diagnose SCL.

When diagnosing SCL pathologically, the differential diagnosis should include well-differentiated liposarcoma, particularly the sclerosing type, myxoid liposarcoma, angiolipoma, solitary fibrous tumor, dermatofibrosarcoma protuberans (DFSP), and lipomatous hemangiopericytoma.[1-3] The spindle cells in well-differentiated liposarcoma are more cellular and they show nuclei with more pleomorphism than those in SCL.[2] Lipoblasts are present in well-differentiated liposarcoma. In addition, there is a characteristic irregular distribution of collagen bundles in SCL. SCL and DFSP can be considered in the same pathologic differential diagnosis because of their clinical characteristics, histologic similarities, and CD34 positivity. The gross pathologic differences can be helpful, because SCL presents as a subcutaneous mass, while DFSP presents as a cutaneous plaque or nodule. Also, the scattered Factor XIIIa cells that are present in the fat and in collagenous connective tissue in SCL allow differentiation between these two entities. CD99 immunostaining is helpful to differentiate lipomatous hemangiopericytoma, which is morphologically similar to SCL.[6]

The treatment of choice for SCL is complete excision. The use of a lateral neck incision has been reported for removing of a supraglottic mass with preserving the mucosa.[7] We confirmed that for this caset a transcervical approach was effective to excise the supraglottic lesion and the right lateral neck mass at the same time.

Spindle cell lipoma is a rare lipoma variant that can develop from any area with fat tissue.[3] Careful clinical and histological examinations and immunohistochemical staining are needed for making the diagnosis of SCL and to exclude the possibility of other lipomatous tumors that have a malignant potential.

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