

Nathalie Ruiz, M.D.; Renu R. Khode, M.D.; Christina M. Kovacs, M.D.

HCA Florida Brandon Hospital: Department of Pathology

Introduction

- Spindle cell lipomas are soft tissue tumors that are benign adipocytic lesions that make up approximately 1.5% of all lipomatous type tumors. (7)
- Of all adipose tissue neoplasms, 80% are located in the “shawl-like distribution” anatomical regions of the shoulders, back and posterior neck while the other 20% are found elsewhere on the body. (7)
- Lipomas in the laryngeal region are even more uncommon, comprising of less than 150 reported cases since 2021. Upon review of the literature, of these cases, only 7 are of the spindle cell variant. (1,8)

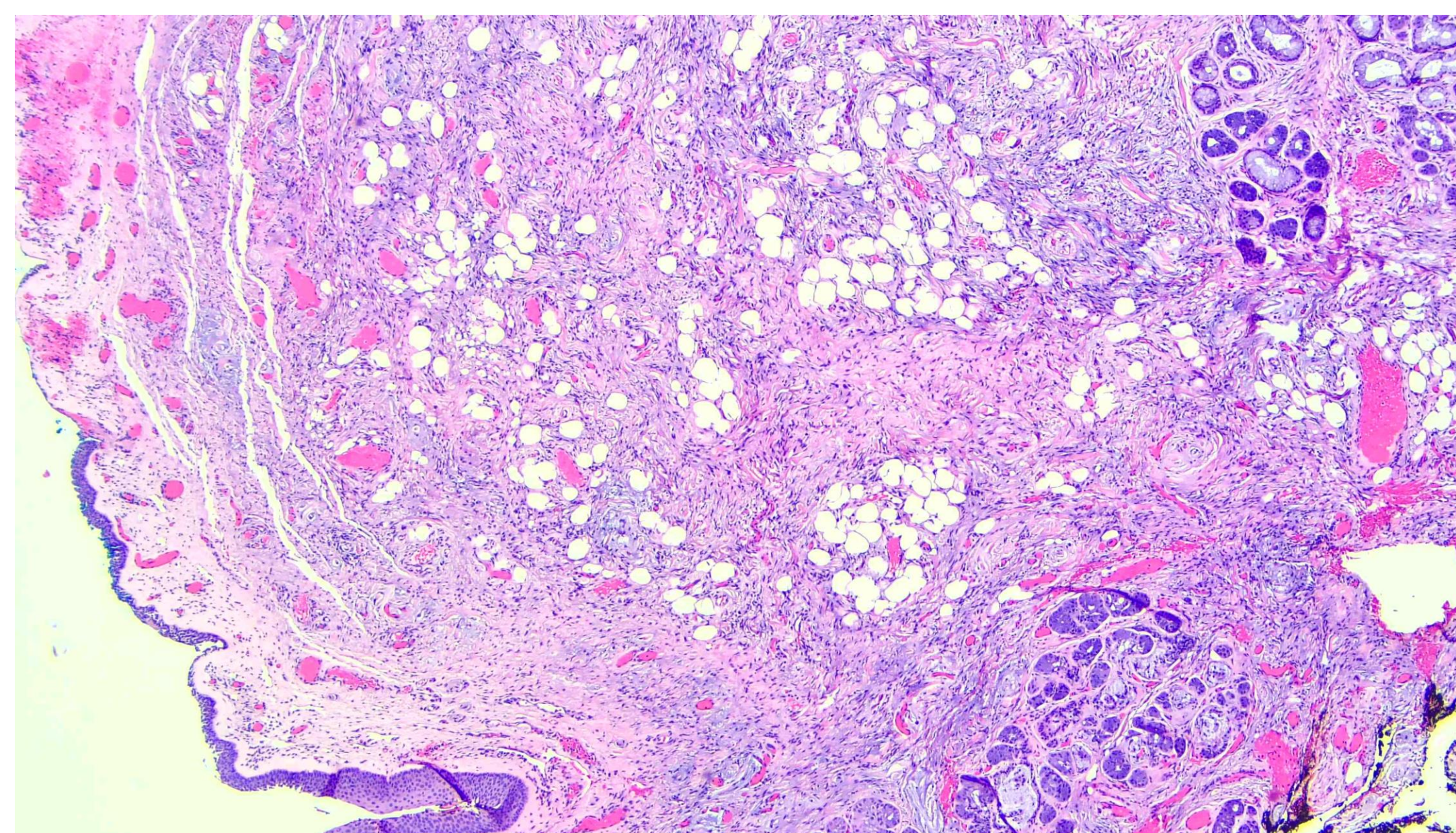
Objective

- Here, we present a case from a 61-year-old-male who was found to have a spindle cell lipoma in the subglottic region of the larynx, a very rare anatomic location for this type of entity.
- To our knowledge, this is the 8th reported case of a spindle cell lipoma arising in the larynx.

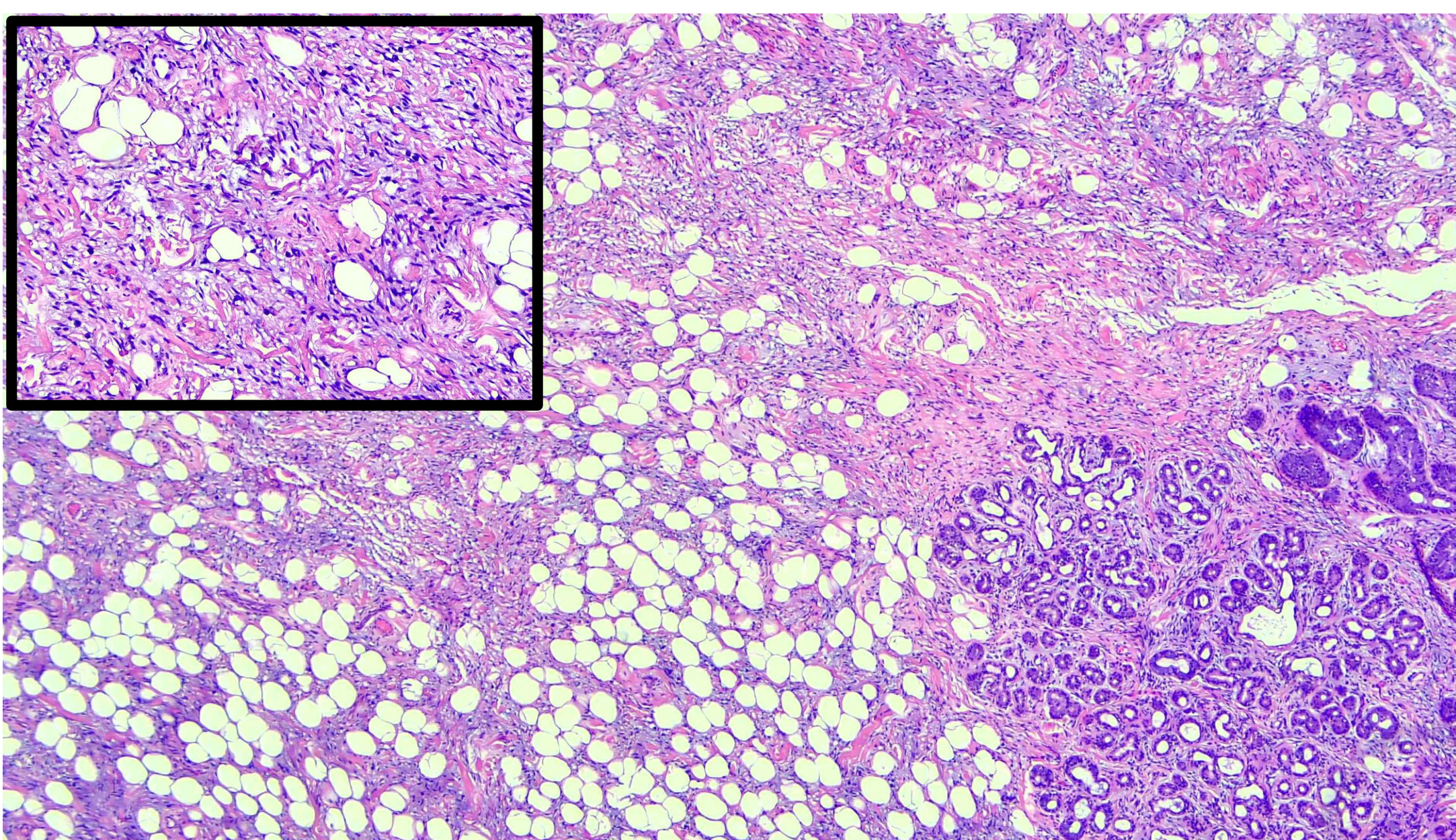
Gross Description

- On gross examination, the left subglottic mass consisted of a yellow -tan, rubbery, well-circumscribed fragment that measured 2.3 x 2.2 x 1.7 cm.
- The surface was smooth and congested. Serial sectioning revealed a yellow-tan, smooth cut surface.
- The possible resection margin was inked with black and the surface was inked with blue.
- The specimen was entirely submitted for histologic evaluation.

H&E



• Figure 1. H&E 4x. Stratified squamous epithelium with underlying vascular structures, adipose cells, spindle cells, collagen fibers and glands.



• Figure 2. H&E 4x. Mature adipocytes with admixed spindle cells and collagen fibers entrapping submucosal glands. Inset: H&E 10x. Bland spindle cells surrounding collagen fibers and adipocytes

Pathologic Findings

- Histologically, this tumor is composed of different cell types including mature adipocytes, bland spindle cells and abundant collagen fibers.
- Apart from its rare anatomic location, this tumor also demonstrates an infiltrative growth pattern and entraps submucosal glands which is yet another unusual aspect of this lesion.

Discussion

- Spindle cell lipomas usually affect middle aged males between the ages of 45 and 70 years old. (7)
- The subglottic area of the larynx begins at the lower border of the true vocal cords and extends down to the first tracheal cartilage. (8)
- Spindle cell lipomas are benign, slow growing, mobile, painless tumors. They are usually less than 5cm upon presentation and have a marked male predominance.
- Cytogenetic and molecular genetic studies of spindle cell lipomas have demonstrated heterozygous deletions of chromosome 13q14 of the RB1 gene. (6)
- When adipocytic lesions of the larynx are encountered either incidentally or due to clinical manifestations, there are four main differentials to consider including lipoma, liposarcoma, lipoblastoma and hibernoma. (6)
- Liposarcomas' morphologies include differentiated, pleomorphic, dedifferentiated and myxoid. They can be associated with a variety of genetic mutations and translocations. (8)
- Lipoblastomas are more common in early childhood and are associated with PLAG1 gene rearrangement. They are composed of bland lipoblasts, primitive spindle cells and mature adipocytes. (7)
- Hibernomas are composed of brown adipocytic cells with abundant cytoplasmic vacuoles and are associated with MEN1 gene mutation.

Discussion Continued

- Spindle cell lipomas have an excellent prognosis and infrequently recur. Excision is the mainstay of treatment and there have been no reported malignant transformations of this entity to date. (6)
- In this specific case, the patient had no evidence of recurrence at the 6 month follow up appointment.

References&Acknowledgements

- The case slides are reviewed by Dr. Andrew Rosenberg at University of Miami.
- 1. Azar SS, Buen F, Chia JJ, Ma Y, Caron J, Dry S, Bhuta S, Abemayor E. Spindle Cell Lipoma Arising from the Supraglottis: A Case Report and Review of the Literature. *Head Neck Pathol.* 2021 Dec;15(4):1299-1302. doi: 10.1007/s12105-020-01259-4. Epub 2021 Jan 4. PMID: 33394369; PMCID: PMC8633333.
- 2. Ferlito, Alfio, et al. “Some Considerations on the WHO Histological Classification of Laryngeal Neoplasms.” *Advances in Therapy*, vol. 36, no. 7, 22 May 2019, pp. 1511–1517, <https://doi.org/10.1007/s12325-019-00978-7>. Accessed 6 Apr. 2023.
- 3. “Lipoblastoma / Lipoblastomatosis.” *Www.pathologyoutlines.com*, www.pathologyoutlines.com/topic/softtissueadiposelipoblastoma.html. Accessed 20 Feb. 2024.
- 4. Mills, Stacey E. *Histology for Pathologists*. Lippincott Williams & Wilkins, 16 July 2012.
- 5. OHSHIMA, YUKIKO, et al. “Spindle Cell Lipoma and Pleomorphic Lipoma: An Update and Review.” *Cancer Diagnosis & Prognosis*, vol. 3, no. 3, 2 May 2023, pp. 282–290, www.ncbi.nlm.nih.gov/pmc/articles/PMC10165376/, <https://doi.org/10.21873/cdp.10213>. Accessed 20 Feb. 2024.
- 6. Okromelidze, Lela, et al. “Lipoma of the Larynx and Other Differential Diagnoses.” *Journal of Clinical Imaging Science*, vol. 9, 18 Nov. 2019, pp. 51–51, www.ncbi.nlm.nih.gov/pmc/articles/PMC6884984/, https://doi.org/10.25259/jcis_123_2019. Accessed 20 Feb. 2024.
- 7. “Spindle Cell / Pleomorphic Lipoma.” *Www.pathologyoutlines.com*, www.pathologyoutlines.com/topic/softtissueadiposepleomorphicgeneral.html.
- 8. Ud Din N, Zhang P, Sukov WR, Sattler CA, Jenkins SM, Doyle LA, Folpe AL, Fritchie KJ. Spindle Cell Lipomas Arising at Atypical Locations. *Am J Clin Pathol.* 2016 Oct;146(4):487-95. doi: 10.1093/ajcp/aqw137. PMID: 27686175.
- 9. Zafar, Rabia, and Yurong Wheeler. “Liposarcoma.” *PubMed, StatPearls Publishing*, 2020, www.ncbi.nlm.nih.gov/books/NBK538265/.

This research was supported (in whole or in part) by HCA Healthcare and/or an HCA Healthcare affiliated entity. The views expressed in this publication represent those of the author(s) and do not necessarily represent the official views of HCA Healthcare or any of its affiliated entities.