Asian Journal of Surgery xxx (xxxx) xxx

Contents lists available at ScienceDirect

Asian Journal of Surgery

journal homepage: www.e-asianjournalsurgery.com

Letter to Editor

Sclerosing micronodular thymoma with lymphoid stroma: A case report

Keywords:
Micronodular thymoma
Sclerosis
Lymphoid stroma

To the Editor,

The micronodular thymoma with lymphoid stroma (MNTLS) was first described and reported in 1999.[1] As an independent subtype of thymoma in the WHO classification, MNTLS is extremely rare, accounting for only 1-5% of all types of thymoma.[2] Its histological characteristic is that tumor epithelial cell nests or islands, varying in sizes, are separated by mature lymphoid stroma containing lymphoid follicles with or without germinal centers, but no thymic corpuscles or perivascular spaces. Herein, we report an MNTLS showing specific histological patterns which has not been reported before.

A 69-year-old woman was found a lesion, measuring 3.5 cm in diameter, in the anterior superior mediastinum by chest computed tomography during a regular health examinations. The patient had no uncomfortable symptoms or other complaints, and a surgical resection was performed. Grossly, the gray solid tumor was $3.5 \times 3.2 \times 2.2\ cm^3$, with complete capsules. Under the microscope, the tumor tissue was divided into lobulated islands in a sclerosing background, with scattered lymphatic follicles with/without germinal centers. No perivascular space and Hassall's corpuscles were found (Fig. 1a). The bland round/oval tumor cells were diffusely arranged in tiny nests, with pale-pink substances at the center, resembling rosette structures (Fig. 1b), and deeply stained lymphoid stroma surrounded the rosettes (Fig. 1b). With immunohistochemistry, the epithelial cells expressed CK (Fig. 1d) and P63 (Fig. 1e), while CD20, CD56, synaptophysin, and chrormogranin A were all negative. The lymphocytes surrounding the rosettes expressed CD3 (Fig. 1f), and follicles expressed CD20 (Fig. 1g). A small number of lymphocytes expressed TdT (Fig. 1h) and CD1α (Fig. 1i) within the rosettes. Accordingly, the diagnosis of MNTLS was rendered. The patient was free from recurrence 8 months after the initial diagnosis.

Although MNTLS is rare, it can be associated with multilocular thymic cystic or microcystic change.[3] However, the sclerosing background in the current case has never been reported before. Moreover, the diffused rosette structures was also very rare. The rosette structures of epithelial cells can appear in type A thymoma, which can occur simultaneously with MNTLS.[4] However, for type A thymoma, there is no lymphoid stroma surrounding the rosettes. The negative expression of CD20 in epithelial cells further ruled out the diagnosis of type A thymoma. Recent studies have shown that MNTLS, like type A thymoma, also has *GTF2I* mutations,[5] which indicating these two entities are closely related. Of note, there are still considerable differences in histological features and immune phenotype between them. Another pitfall in differential diagnosis is carcinoid, which may also exhibit rosette structur, while carcinoid generally has no network of lymphoid stroma, and the negative stains of neuroendocrine biomarkers can increase the confidence of diagnosis.

https://doi.org/10.1016/j.asjsur.2023.09.155
1015-9584/© 2023 Asian Surgical Association and Taiwan Robotic Surgery Association. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Please cite this article as: L. Han, E.-H. Wang and L. Wang, Sclerosing micronodular thymoma with lymphoid stroma: A case report, Asian Journal of Surgery, https://doi.org/10.1016/j.asjsur.2023.09.155

Abbreviations

MNTLS	micronodular thymoma with lymphoid stroma
WHO	World Health Organization
CK	Cytokeratin
TdT	Terminal deoxynucleotidyl transferase

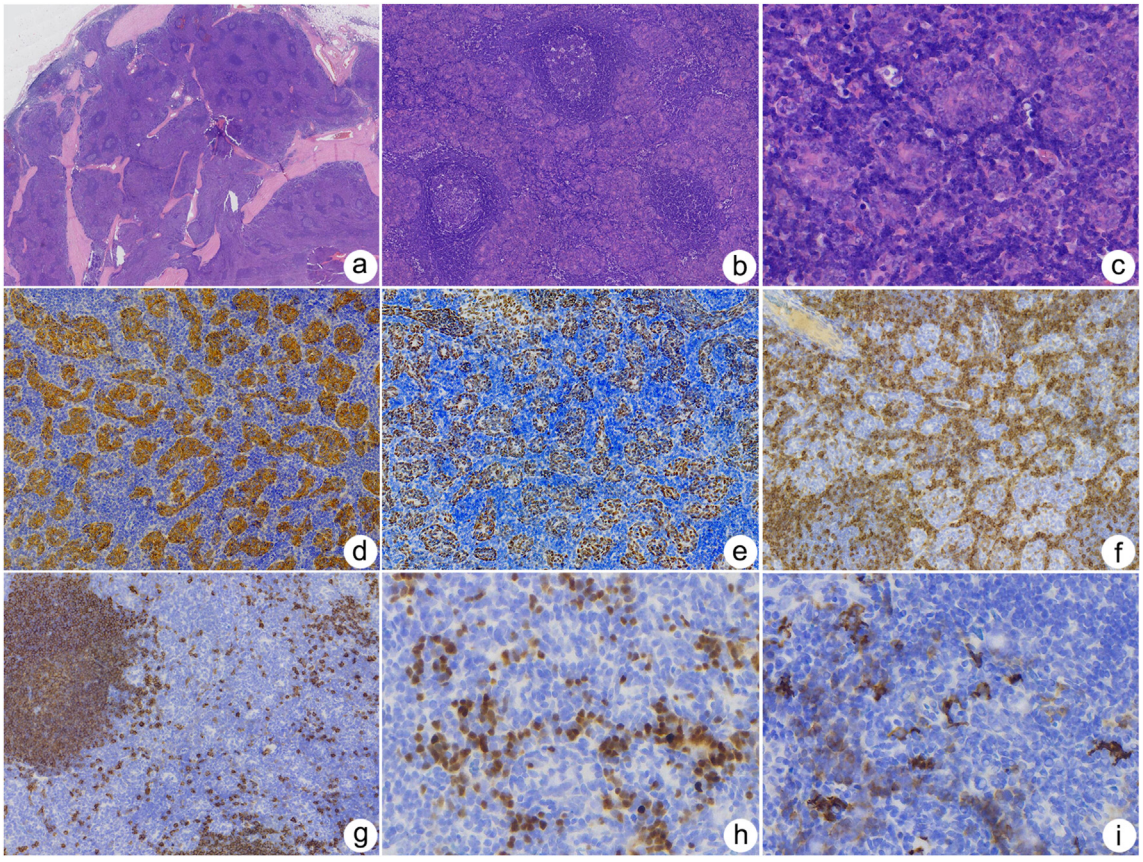

Fig. 1. The tumor tissue was divided into lobulated islands in a sclerosing background (a, 40 ×), with scattered lymphatic follicles with/without germinal centers (b, 100 ×). The bland tumor cells were diffusely arranged in tiny nests with pale-pink substances at the center, resembling rosette structures, which were surrounded by deeply stained lymphoid stroma (c, 400 ×). The epithelial cells expressed CK (d, 100 ×) and P63 (e, 100 ×). The lymphocytes surrounding the rosettes expressed CD3 (f, 200 ×), and follicles expressed CD20 (g, 100 ×). A small number of lymphocytes expressed TdT (h, 200 ×) and CD1α(i, 200 ×) within the rosettes.

Declaration of competing interest

None declared.

Acknowledgments

This study was supported by grants from the Natural Science Foundation of Liaoning to Liang Wang (2021-MS-160).

References

1. Suster S, Moran CA. Micronodular thymoma with lymphoid B-cell hyperplasia: clinicopathologic and immunohistochemical study of eighteen cases of a distinctive morphologic variant of thymic epithelial neoplasm. *Am J Surg Pathol*. 1999;23(8):955–962.
2. WHO Classification of Tumours Editoral Board. Thoracic tumours. In: *WHO Classification of Tumours Series*. Vol 5. 5th ed. Lyon (France): International Agency of Research on Cancer; 2021:345–346.
3. Qu L, Xiong Y, Yao Q, Zhang B, Li T. Micronodular thymoma with lymphoid stroma: two cases, one in a multilocular thymic cyst, and literature review. *Thoracic cancer*. 2017;8(6):734–740.

Please cite this article as: L. Han, E.-H. Wang and L. Wang, Sclerosing micronodular thymoma with lymphoid stroma: A case report, Asian Journal of Surgery, https://doi.org/10.1016/j.asjsur.2023.09.155

4. Wang R, Nie L. Mixed type A thymoma and micronodular thymoma with lymphoid stroma. *Int J Surg Pathol*. 2018;26(4):336–337.
5. Hsieh MS, Kao HL, Huang WC, et al. Constant p.L424H mutation in GTF2I in micronodular thymomas with lymphoid stroma: evidence supporting close relationship with type A and AB thymomas. *Mod Pathol : an official journal of the United States and Canadian Academy of Pathology, Inc*. 2023;36(2):100008.

Lihua Han*
The Central Laboratory of Morphology, Shenyang Medical College, Shenyang, China

En-Hua Wang, Liang Wang
Department of Pathology, First Affiliated Hospital and College of Basic Medical Sciences, China Medical University, Shenyang, China

* Corresponding author. The Central Laboratory of Morphology, Shenyang Medical College, Shenyang, China.
E-mail address: hanlihualn@163.com (L. Han).

9 September 2023
Available online xxx

Please cite this article as: L. Han, E.-H. Wang and L. Wang, Sclerosing micronodular thymoma with lymphoid stroma: A case report, Asian Journal of Surgery, https://doi.org/10.1016/j.asjsur.2023.09.155