Received: 27 January 2022 | Accepted: 9 February 2022

DOI: 10.1111/1759-7714.14364

CASE IMAGE

WILEY

Mixed micropapillary patterns found in malignant pleural mesothelioma with possibly worsened prognostic implication

Toshio Oyama[1] | **Taichiro Goto**[2] | **Kenji Amemiya**[1]

[1]Department of Pathology, Yamanashi Central Hospital, Yamanashi, Japan

[2]Lung Cancer and Respiratory Disease Center, Yamanashi Central Hospital, Yamanashi, Japan

Correspondence
Taichiro Goto, Lung Cancer and Respiratory Disease Center, Yamanashi Central Hospital, Yamanashi 400-8506, Japan.
Email: taichiro@1997.jukuin.keio.ac.jp

KEYWORDS: histopathology, immunohistochemistry, mesothelioma, micropapillary pattern

A 60-year-old male had dyspnea which was found to be due to right pleural effusion and pleural thickening. Surgical biopsy was performed, leading to a diagnosis of epithelioid mesothelioma. After three courses of chemotherapy, he underwent extrapleural pneumonectomy (Figure 1a). Pathological diagnosis was diffuse malignant epithelioid mesothelioma of the right pleura. Histologically, atypical epithelioid mesothelial cells were arranged in a tubulopapillary structure in most parts of the tumor according to the fifth World Health Organization classification (Figure 1b).[1] Lymph node metastasis was observed in a subcarinal lesion (Figure 1c). A micropapillary pattern was also observed, characterized by the presence of a papillary structure with tufts lacking a central fibrovascular

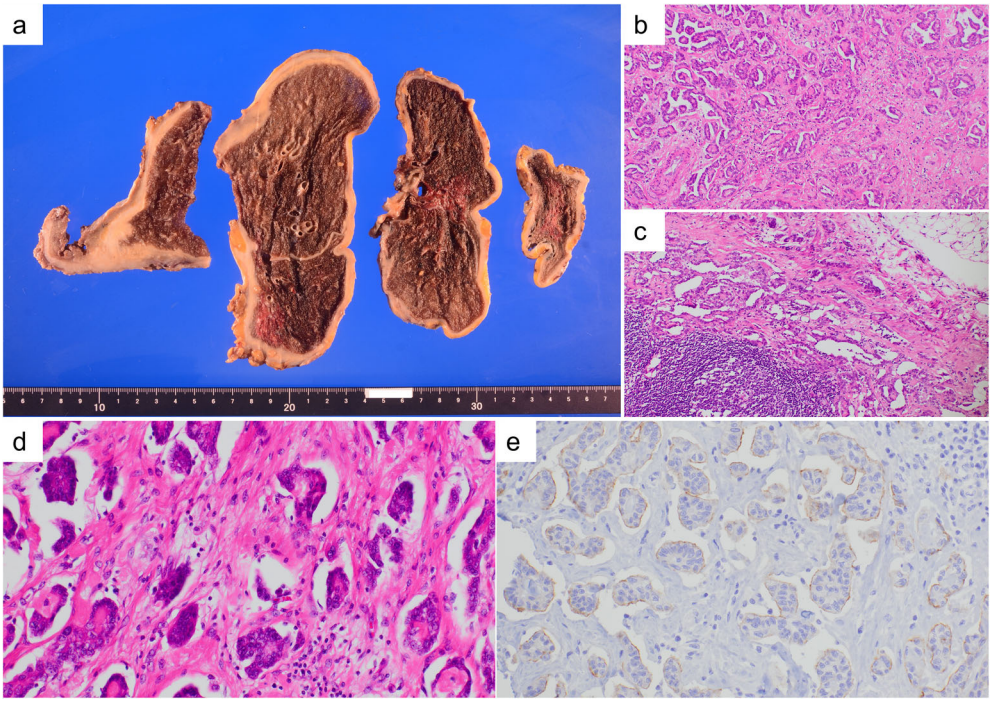

FIGURE 1 Pathological findings. (a) Macroscopic view. (b,c) The tumor and metastatic lymph nodes comprised mostly tubulopapillary components, characterized by a complex papillary and glandular proliferation along fibrovascular core. (b) Primary lesion and (c) metastatic lymph node. H&E, original magnification x100. (d,e) A micropapillary pattern intermingled with true papillary pattern in a small area of primary lesion (d), as confirmed by MUC1 staining (e). H&E, original magnification x400

core, which was observed as a minor component, comprising 1%–5% of the total lesion in both the primary lesion and metastatic lymph nodes (Figure 1d). Moreover, a micropapillary pattern was also seen in lymphatic vessels adjacent to the metastatic lymph nodes, suggesting that this finding may be associated with the lymphatic progression of the tumor. Immunohistochemical analysis revealed that the periphery of the small micropapillary clusters stained positive for mucin 1, cell surface associated (MUC1) (Figure 1e). Immunocytochemically, tumor cells showed positivity for cytokeratin 5/6 (CK5/6), D2-40 and calretinin, and negativity for Wilm's tumor-1, thyroid transcription factor-1, napsin and carcinoembryonic antigen. Seven months after surgery, the patient is being treated with chemotherapy for recurrence of mediastinal lymph nodes.

Although malignant mesothelioma with a coexistent micropapillary pattern is supposed to be extremely rare, a micropapillary pattern is reported to be a predictor of aggressive carcinoma in various cancers.[2,3] In mesothelioma, which is historically considered to be difficult to treat, our results may become clinically useful pathological findings as further prognostic exacerbation factors, which needs to be elucidated in a larger cohort of patients with similar mesothelioma, including the histological subtype with sarcomatoid histology.

ACKNOWLEDGMENTS

We greatly appreciate the contributions of Takahiro Nakagomi, and Rumi Higuchi for helpful scientific discussions.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

ORCID

Taichiro Goto https://orcid.org/0000-0002-2560-3639

REFERENCES

1. Dacic S. Pleural mesothelioma classification-update and challenges. Mod Pathol. 2021;35:51–6.
2. Peng B, Li G, Guo Y. Prognostic significance of micropapillary and solid patterns in stage IA lung adenocarcinoma. Am J Transl Res. 2021;13:10562–9.
3. Butnor KJ. Controversies and challenges in the histologic subtyping of lung adenocarcinoma. Transl Lung Cancer Res. 2020;9:839–46.

How to cite this article: Oyama T, Goto T, Amemiya K. Mixed micropapillary patterns found in malignant pleural mesothelioma with possibly worsened prognostic implication. Thorac Cancer. 2022;13:1098–9. https://doi.org/10.1111/1759-7714.14364