Histological tumour type (Required)

Reason/Evidentiary Support

The major histological tumour types of malignant mesothelioma as recognized by the WHO classification (4th edition)[1] are epithelioid, sarcomatoid and biphasic/mixed. By convention a biphasic mesothelioma is diagnosed if the lesser component reaches 10% of the tumour examined.

There are a number of histological patterns of malignant mesothelioma which are important to be aware of primarily because of diagnostic confusion. For epithelioid mesothelioma these include common patterns such as solid, tubulopapillary, and trabecular, also less common forms such as micropapillary, adenomatoid (microcystic), clear cell, transitional, deciduoid, small cell and pleomorphic mesothelioma. It should be noted that, at present, there is no uniformity among pathologists for the definition of many of these patterns nor any clear prognostic significance to most of them, and we do *not* recommend these names be included as part of a diagnosis; their importance lies in the recognition by the pathologist that these are patterns seen in mesotheliomas.

For sarcomatoid mesothelioma these histological variants may comprise heterologous (osteosarcomatous, chondrosarcomatous and rhabdomyosarcomatous) elements, and desmoplastic mesothelioma. Desmoplastic mesothelioma is characterized by atypical spindle cells and dense hyalinised fibrous stroma, the latter comprising at least 50% of the tumour.[2]

The conventional immunohistochemical panel of markers may require modification with some of these patterns to prevent misdiagnosis. Some of these patterns may have prognostic significance; however, until these prognostic patterns are clearly defined and accepted, the current recommendation is to diagnose mesotheliomas as epithelioid, sarcomatoid/desmoplastic, or biphasic/mixed, particularly since radical surgical approaches depend on these general classifications.

In some cases, such as small biopsy specimens, a definitive tumour type cannot be assigned and in this situation a value of “mesothelioma not otherwise specified (NOS)” would be used.

WHO classification of tumours of the pleura[a,b]

Descriptor	ICD0 codes
Diffuse malignant mesothelioma	
Epithelioid mesothelioma	9052/3
Sarcomatoid mesothelioma	9051/3
Biphasic mesothelioma	9053/3

[a] The morphology codes are from the International Classification of Diseases for Oncology (ICD-O). Behaviour is coded /0 for benign tumours; /1 for unspecified, borderline, or uncertain behaviour; /2 for carcinoma in situ and grade III intraepithelial neoplasia; and /3 for malignant tumours. [b] The classification is modified from the previous WHO classification taking into account changes in our understanding of these lesions.

References

1 WHO (World Health Organization) (2015). *WHO Classification of Tumours of the Lung, Pleura, Thymus and Heart. Fourth edition* Travis WD, Brambilla E, Burke AP, Marx A and Nicholson AG. IARC Press, Lyon, France.

2 Husain AN, Colby T, Ordonez N, Krausz T, Attanoos R, Beasley MB, Borczuk AC, Butnor K, Cagle PT, Chirieac LR, Churg A, Dacic S, Fraire A, Galateau-Salle F, Gibbs A, Gown A, Hammar S, Litzky L, Marchevsky AM, Nicholson AG, Roggli V, Travis WD and Wick M (2013). Guidelines for pathologic diagnosis of malignant mesothelioma: 2012 update of the consensus statement from the International Mesothelioma Interest Group. *Arch Pathol Lab Med* 137(5):647-667.