

Meningothelial meningioma

The meningothelial variant of [meningioma](#) (also known as syncytial or meningotheliomatous meningioma) [World Health Organization Classification of Tumors of the Central Nervous System](#)

see [World Health Organization grade 1 meningioma](#)

Epidemiology

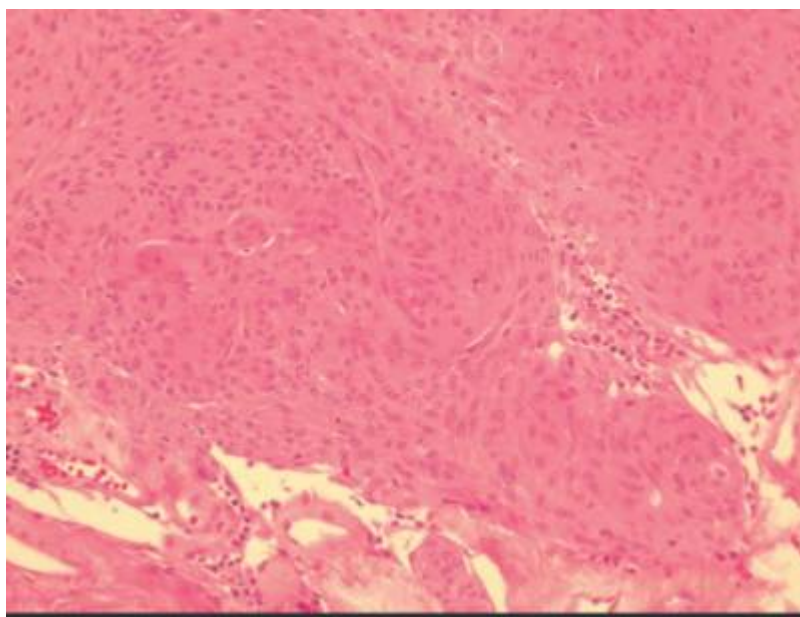
Meningothelial meningioma is the most common histological subtype of meningioma, found in ~60% of all meningiomas, most frequently combined with fibrous meningioma (40%) or in isolation (17%) ¹⁾.

Pathology

Meningothelial meningiomas most closely resemble arachnoid cap cells and are characterized by sheets, whorls or syncytia of neoplastic cells that have round or oval centrally located nuclei with dispersed chromatin, smooth nuclear profiles, and small indistinct nucleoli. They also sometimes demonstrate eosinophilic cytoplasmic invaginations (a.k.a. intranuclear pseudo inclusions) ^{2) 3)}.

Lobules of the tumor are separated from each other with collagen sheets ⁴⁾.

Classically, it is marked by the arrangement of tumor cells in lobular nests. These cells are generally polygonal in shape with poorly defined cytoplasmic borders. Cells are described as being arranged in sheet-like fashion, i.e., in a syncytium, hence the alternate designation “syncytial”.



The cytoplasm stains slightly eosinophilic and is fairly homogeneous. The nucleus is generally oval and is centrally placed. Prominent nucleolation is not usually observable. Lobules of tumor cells may be separated by collagenous septa. The cells in this variant most closely resemble the arachnoid cap cells from whence these tumors arise. A useful diagnostic feature is the occasional presence of

prominent numbers of eosinophilic cytoplasmic invaginations into the nucleus (nuclear pseudoinclusions). Sometimes these inclusions may be clear, secondary to increased glycogen accumulation. Although nuclear pleomorphism may be evident focally in some of these tumors, features typically associated with higher grade lesions including increased mitotic activity, prominent nucleolation, necrosis, disordered architectural pattern, and small cell change are not typically observed. Another very typical feature of meningiomas is the presence of whorl formations, with cells that appear to be whorling around a central core. Occasionally, psammoma bodies may be observed in a syncytial meningioma. Other types of cells such as macrophages may also alter the appearance.

¹⁾

Backer-Grøndahl T, Moen BH, Torp SH. The histopathological spectrum of human meningiomas. *Int J Clin Exp Pathol*. 2012;5(3):231-42. Epub 2012 Mar 25. PubMed PMID: 22558478; PubMed Central PMCID: PMC3341686.

²⁾

Cancer Grading Manual. Springer. (2007) ISBN:0387337512.

³⁾ ⁴⁾

Lee JH. Meningiomas. Springer. (2008) ISBN:1846287847.

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