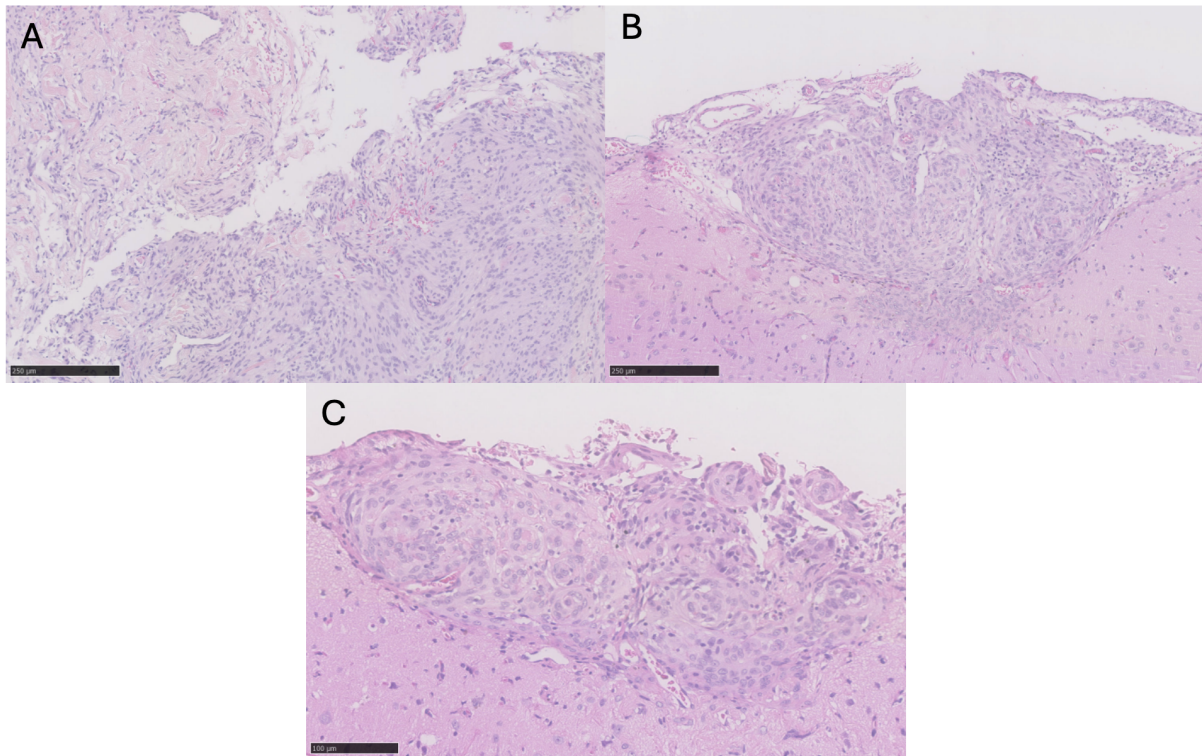
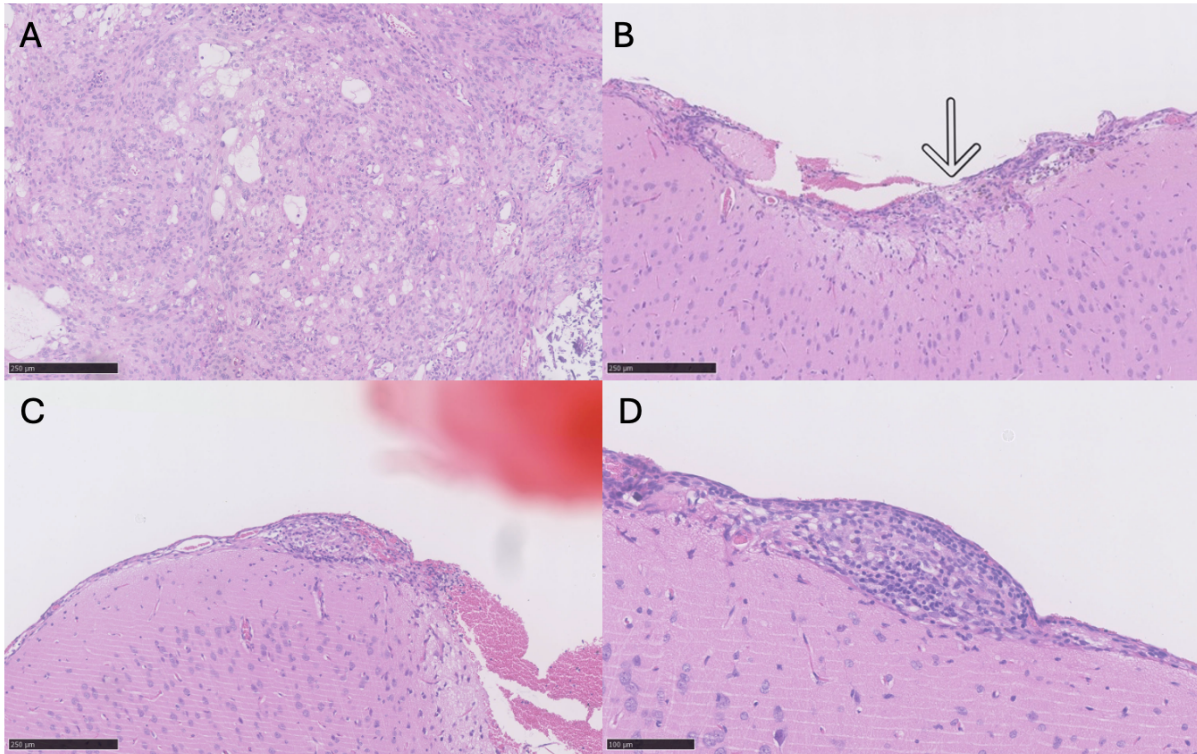


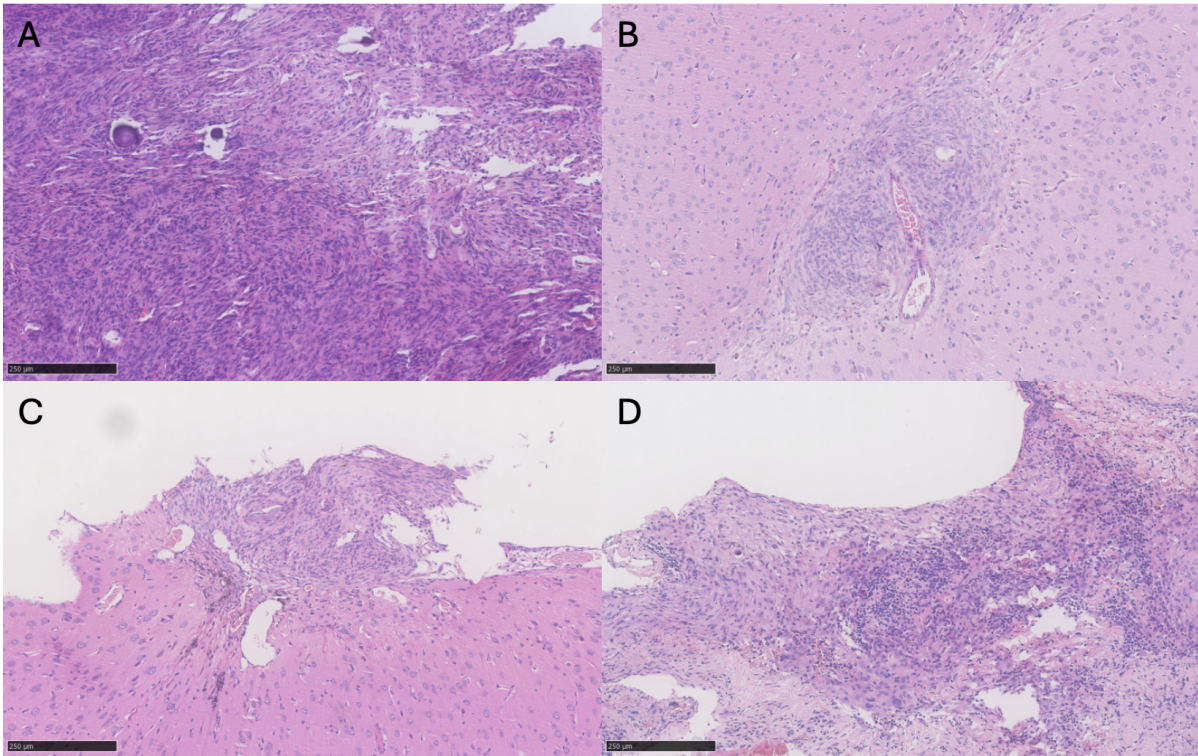
Supplemental material 7 – Morphology



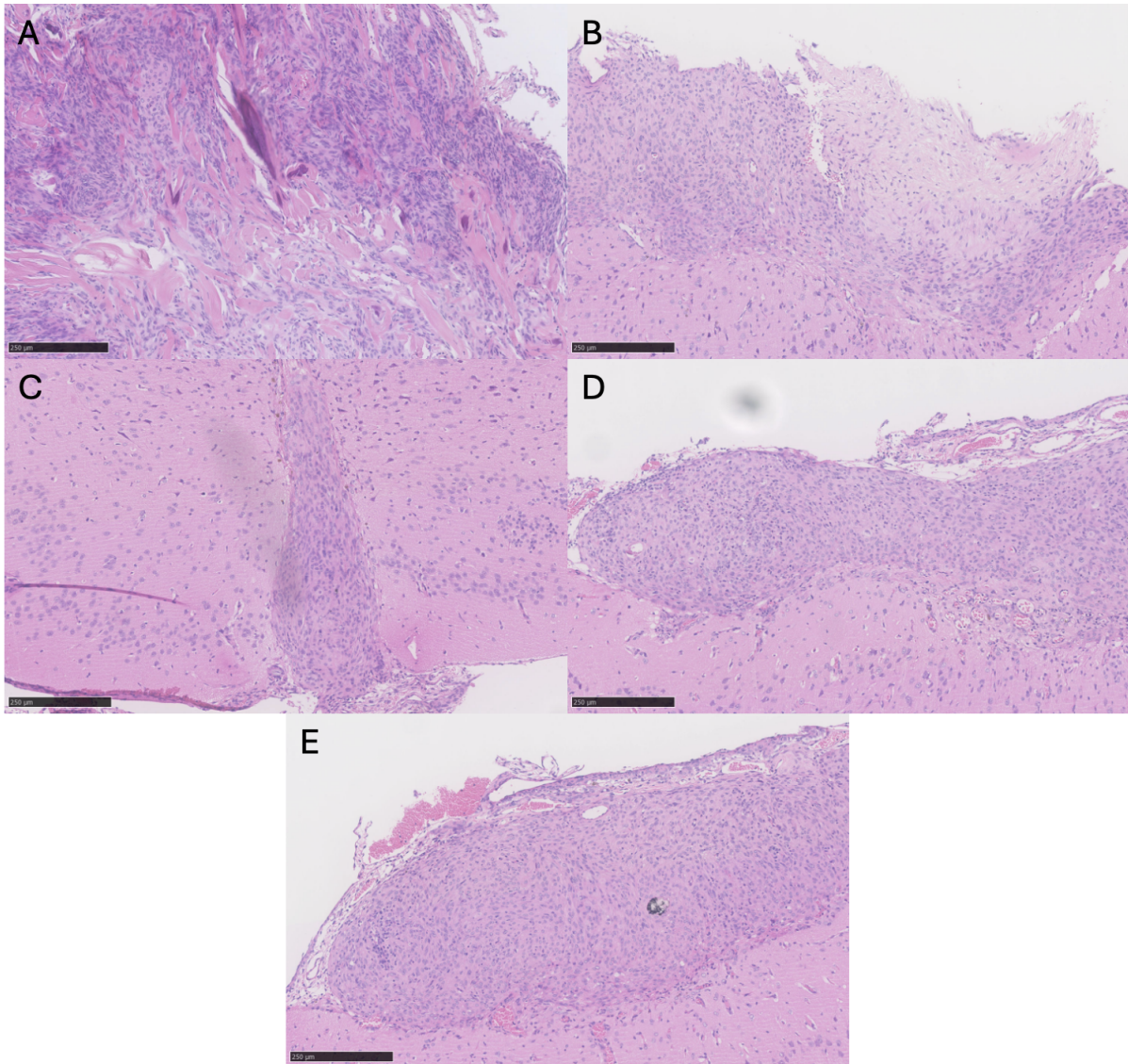
Supplemental material figure 7.1 Meningioma Odense-4 (MO-4). **A.** Histology of primary patient-derived tumor – Transitional meningeoma 10x. The primary patient-derived tumor showed transitional meningeoma traits, which include meningeothelial cells arranged in fascicles of variable length, with the fibroblastic appearance and syncytial pattern, prominent whorling epithelioid cells, and mixed spindle cells. **B.** Xenograft 10x **C.** Xenograft 20x he xenograft tumors exhibit similar traits and morphology.



Supplemental material figure 7.1. Meningioma Odense 12 (MO-12). The Meningothelial cells in the microcystic meningioma still retain their classic ample eosinophilic cytoplasm or can also appear vacuolated. This particular arrangement is referred as a "spider-web" appearance. It is more clearly defined in the primary patient-derived sample in comparison to the xenografts. However, that may be due to the fact the patient's tumor is older, because it is hypothesized that the vacuoles may be due to secretory activity by the tumor, cystic degeneration, ischemia or penetration of CSF into the tumor. Regardless, the xenografts do retain the same morphological traits (to a lesser degree) as the parent tumor. **A.** Primary patient derived tumor 10x, **B+C.** Xenografts 10x, **D.** Xenograft 20x



Supplemental material figure 7.3. Meningioma Odense 25 (MO-25). Similar morphological traits as sample MO-4, but transitional (fibrous) part translated in a lesser degree. It was deemed by our two specialists that 6/10 tumors had similar morphology as primary tumor and 4/10 did not have the fibrous subparts and had a more meningeothelial expression. **A.** Primary patient-derived tumor 10x, **B.** Xenograft with transitional features. **C.** Xenograft meningeothelial **D.** Xenograft transitional lymphocyte-rich in the center.



Supplemental material figure 7.4. Meningioma Odense 12 (MO-12) Meningothelial cells in fibroblastic meningioma are spindly-looking, their nuclei are also elongated and occasional inconspicuous nucleoli can be noted. Running along the meningothelial cells, ropey collagen bundles with a more refractile tinctorial quality can be appreciated. Fibrous meningiomas usually contain ropey collagen that may mimic the appearance of solitary fibrous tumor. Here the xenografts have fibrous tissue in between the cells, but does not quite mimic the exact same morphology as the parent tumor. We conclude the meningothelial subset of the fibrous subtype are identical in all 14 animals with positive growth. However, the fibrous subset only translated in 4/14 cases. **A.** Primary patient-derived tumor displaying fibrous meningioma features. **B.** Fibrous meningioma xenograft, **C.** Fibrous meningioma xenograft, **D.** meningeothelial meningioma xenograft, **E.** Meningeothelial meningioma xenograft.