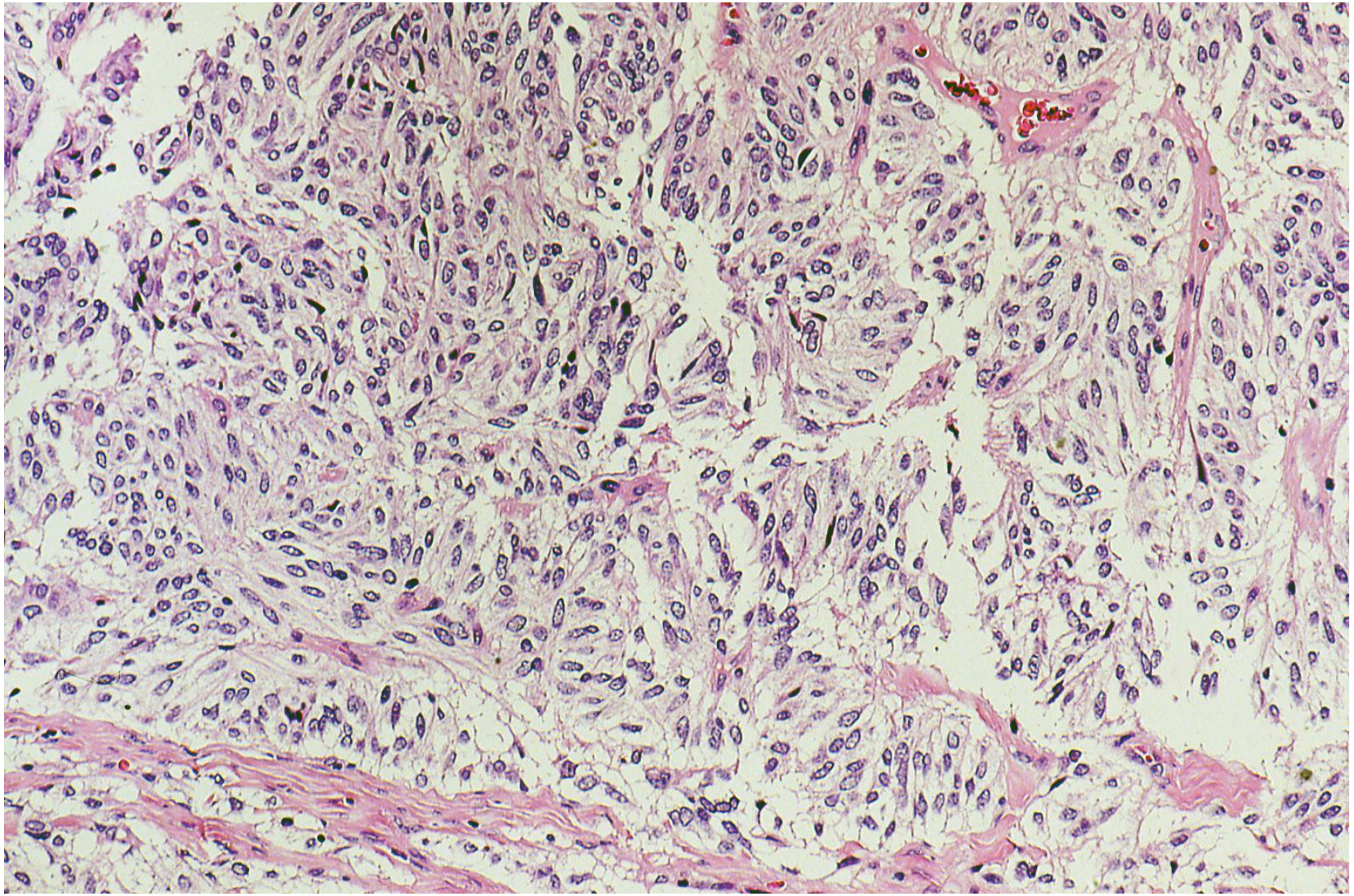
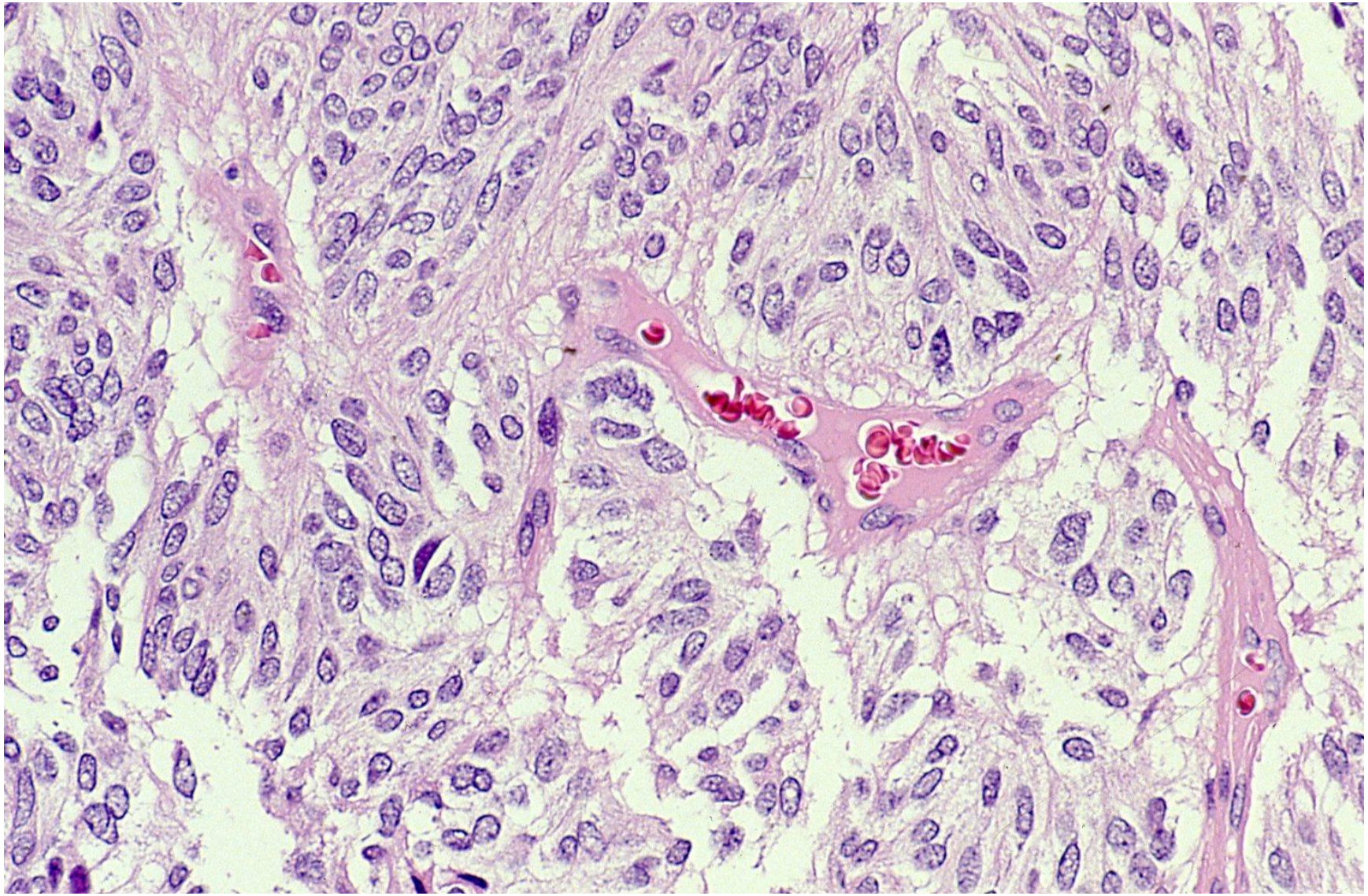
Olfactory neuroblastoma (esthesioneuroblastoma)

Olfactory neuroblastoma (esthesioneuroblastoma) is a malignant neuroectodermal tumor arising from the olfactory membrane or olfactory placode. It commonly located at superior aspect of nasal cavity (the cribriform plate and upper nasal vault). The origin from specialized sensory neuroepithelium is theorized. The neoplastic cells show neuroblastic differentiation, but unrelated to adrenal neuroblastoma, It occurs at any age. Regional or distant metastases are experienced in 20% of patients. Microscopically, small blue round cell tumor grow with a lobulated pattern and abundant neuropil. Homer-Wright pseudorosettes and Flexner-Wintersteiner rosettes may be seen. Melanin formation or rhabdomyoblastic differentiation may be associated infrequently. The tumor cells are immunoreactive for synaptophysin, CD56 (NCAM), chromogranin A, and neurofilament. S-100 protein-positive sustentacular cells are seen at periphery of tumor cell nests.

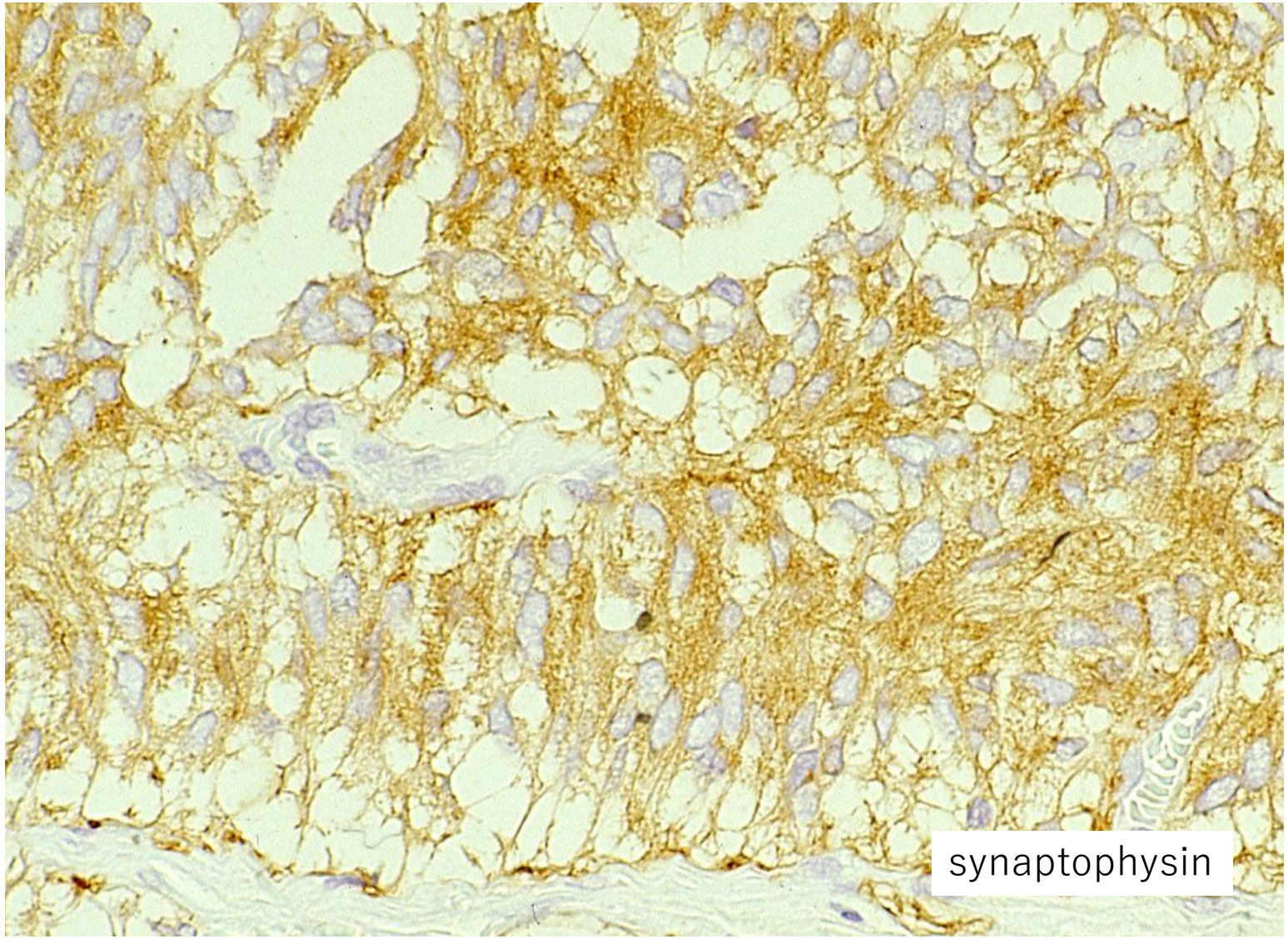
Ref.: Xu B. Olfactory neuroblastoma. PathologyOutlines.com website. 2025. https://www.pathologyoutlines.com/topic/nasalolfactoryneuroblastoma.html



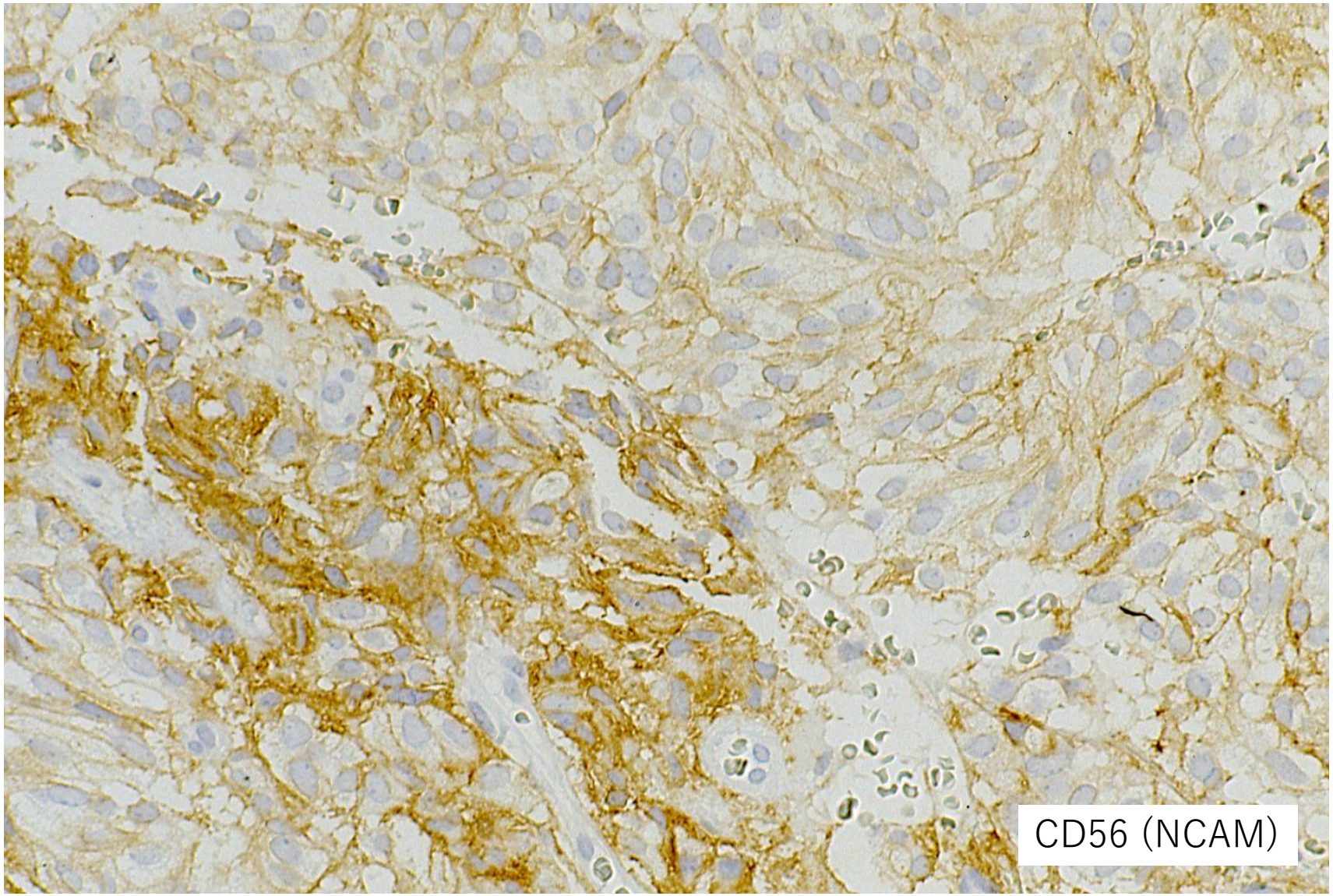
Olfactory neuroblastoma (esthesioneuroblastoma) seen in the superior part of the nasal cavity of a 39 y-o female patient. Nested tumor cells possess small nuclei and plump and finely eosinophilic cytoplasm (H&E-1).



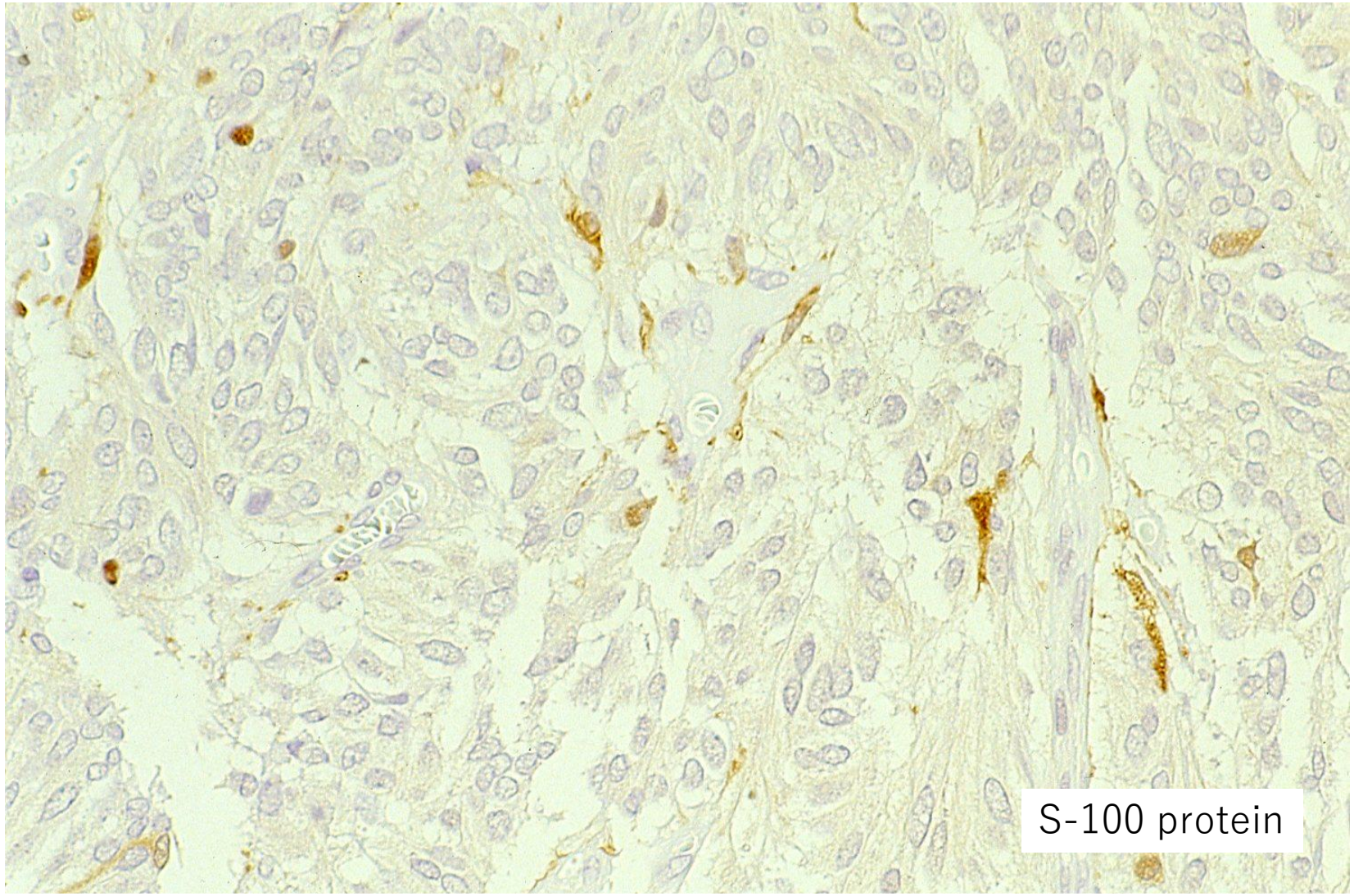
Olfactory neuroblastoma (esthesioneuroblastoma) seen in the superior part of the nasal cavity of a 39 y-o female patient. Nested tumor cells possess small nuclei and plump and finely eosinophilic cytoplasm (H&E-2).



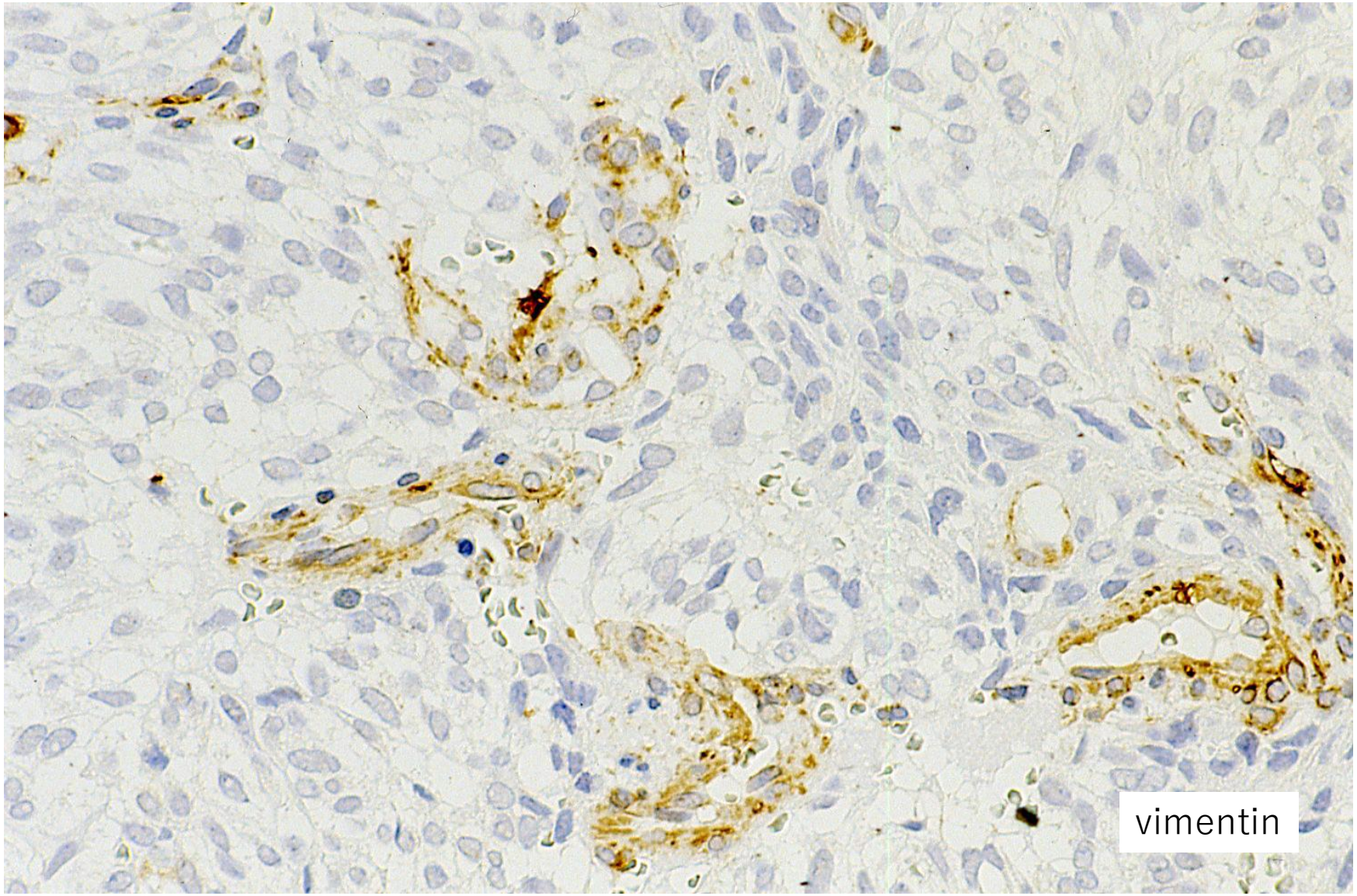
Olfactory neuroblastoma (esthesioneuroblastoma) seen in the superior part of the nasal cavity of a 39 y-o female patient. The nested tumor cells are immunoreactive for synaptophysin (immunostaining for synaptophysin).



Olfactory neuroblastoma (esthesioneuroblastoma) seen in the superior part of the nasal cavity of a 39 y-o female patient. The nested tumor cells are immunoreactive for CD56 (NCAM) (immunostaining for CD56).



Olfactory neuroblastoma (esthesioneuroblastoma) seen in the superior part of the nasal cavity of a 39 y-o female patient. S-100 protein-positive sustentacular cells are seen at the periphery of the tumor nests (immunostaining for S-100 protein).



Olfactory neuroblastoma (esthesioneuroblastoma) seen in the superior part of the nasal cavity of a 39 y-o female patient. The nested tumor cells are negative for vimentin. The vascular wall is immunoreactive (immunostaining for vimentin).