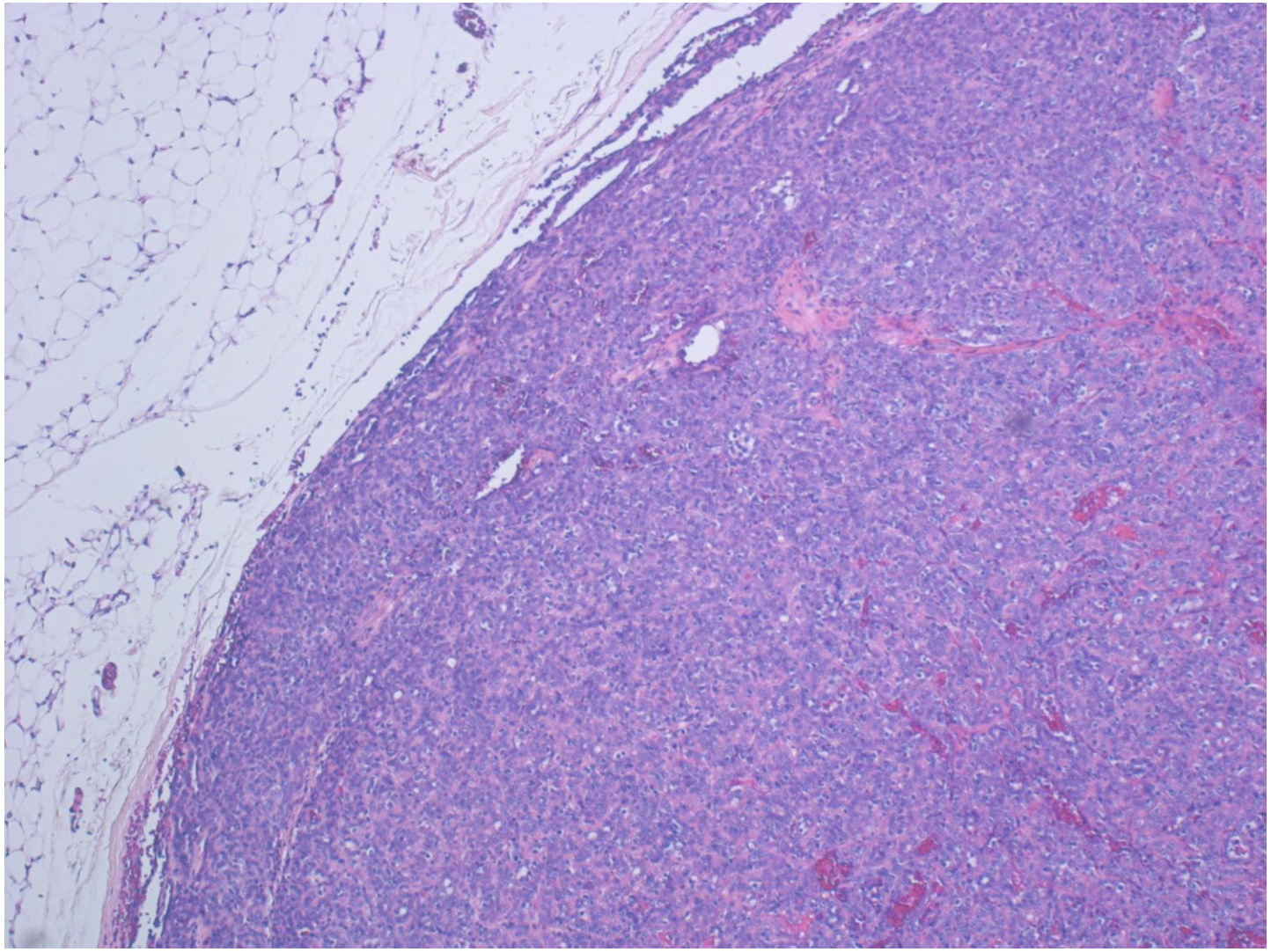
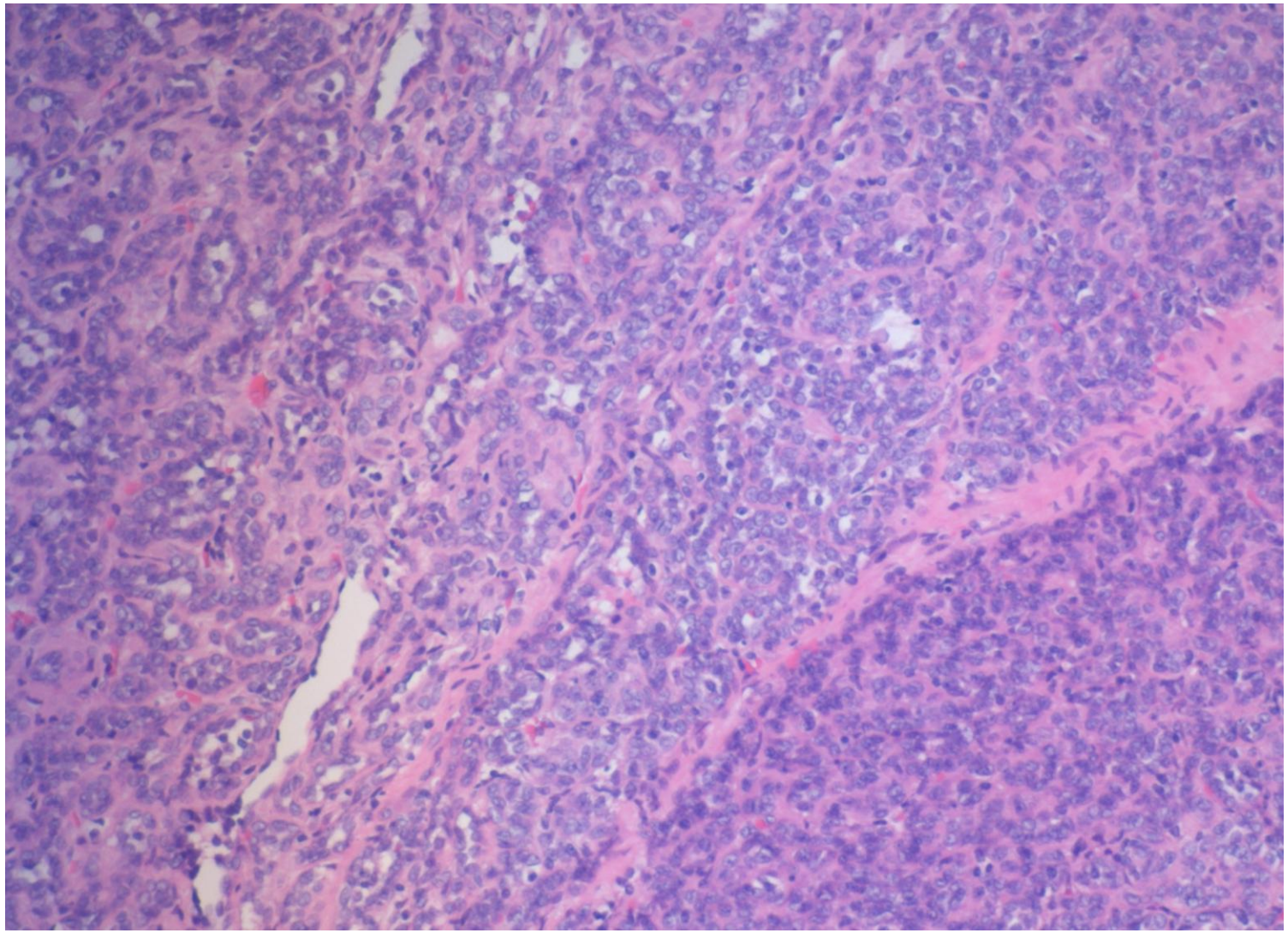
Metanephric adenoma

Metanephric adenoma (nephroblastoma-like adenoma or nephrogenic nephroma) is a benign, solid and circumscribed tumor composed of cytologically bland embryonic-looking epithelium with frequent psammomatous calcification. It is seen in patients with pediatric to older adult age. Microscopically, a cellular blue tumor is composed of tightly packed tubules, long branching and angulated ducts and abortive glomeruli. The nuclei are monomorphous and the cytoplasm is scanty. The stroma is poorly observed. Psammomatous calcification is abundant. Immunohistochemically, WT1, CD57, CD10, BRAF, PAX8, cyclin D1 and vimentin are expressed in the tumor cells. CK7, EMA, AMACR, synaptophysin and NCAM (CD56) are negative.

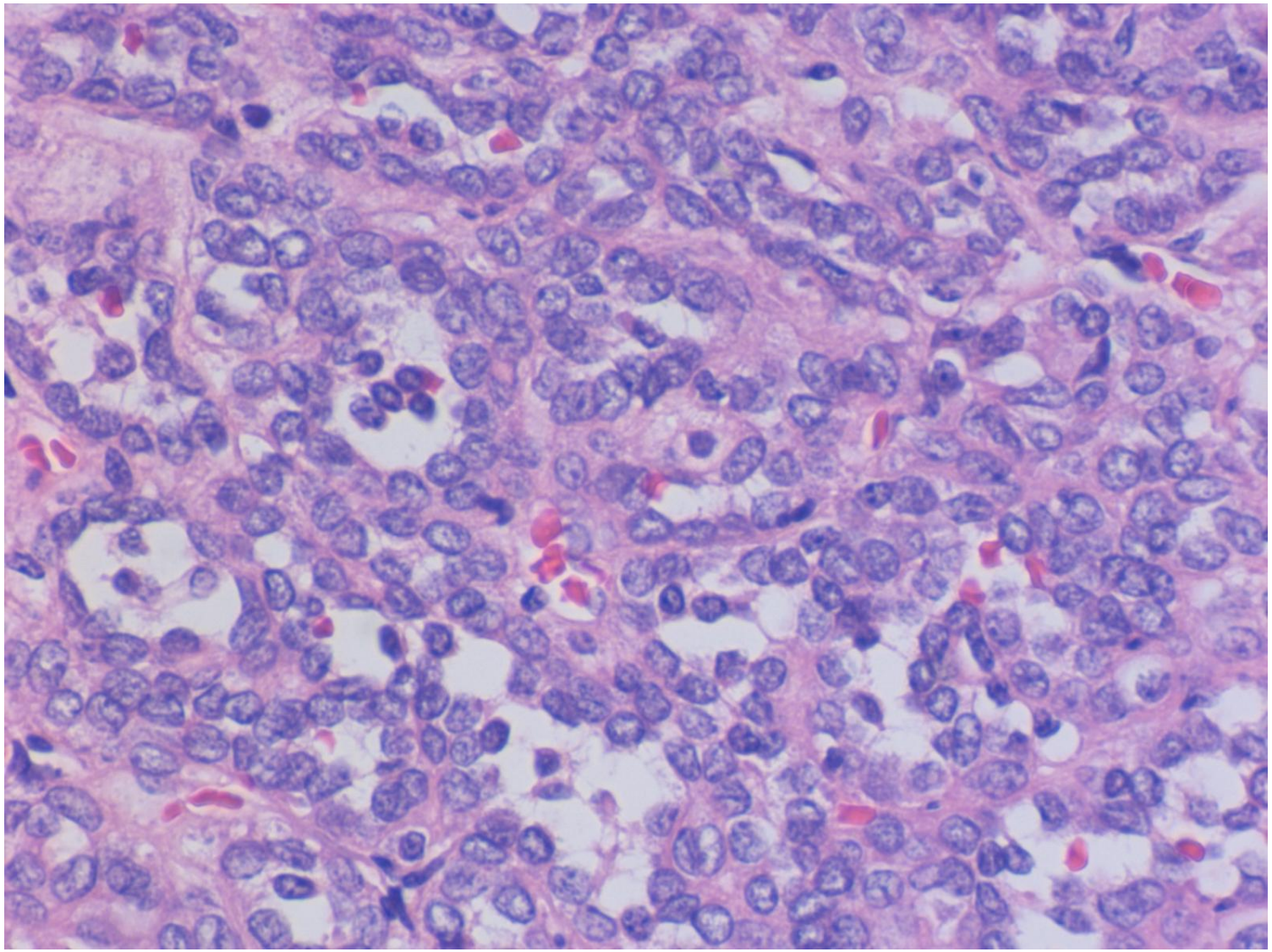
Ref.: Rodríguez-Zarco E, et al. Metanephric adenoma: molecular study and review of the literature. Oncotarget 2022; 13: 387-392. doi: 10.18632/oncotarget.28192



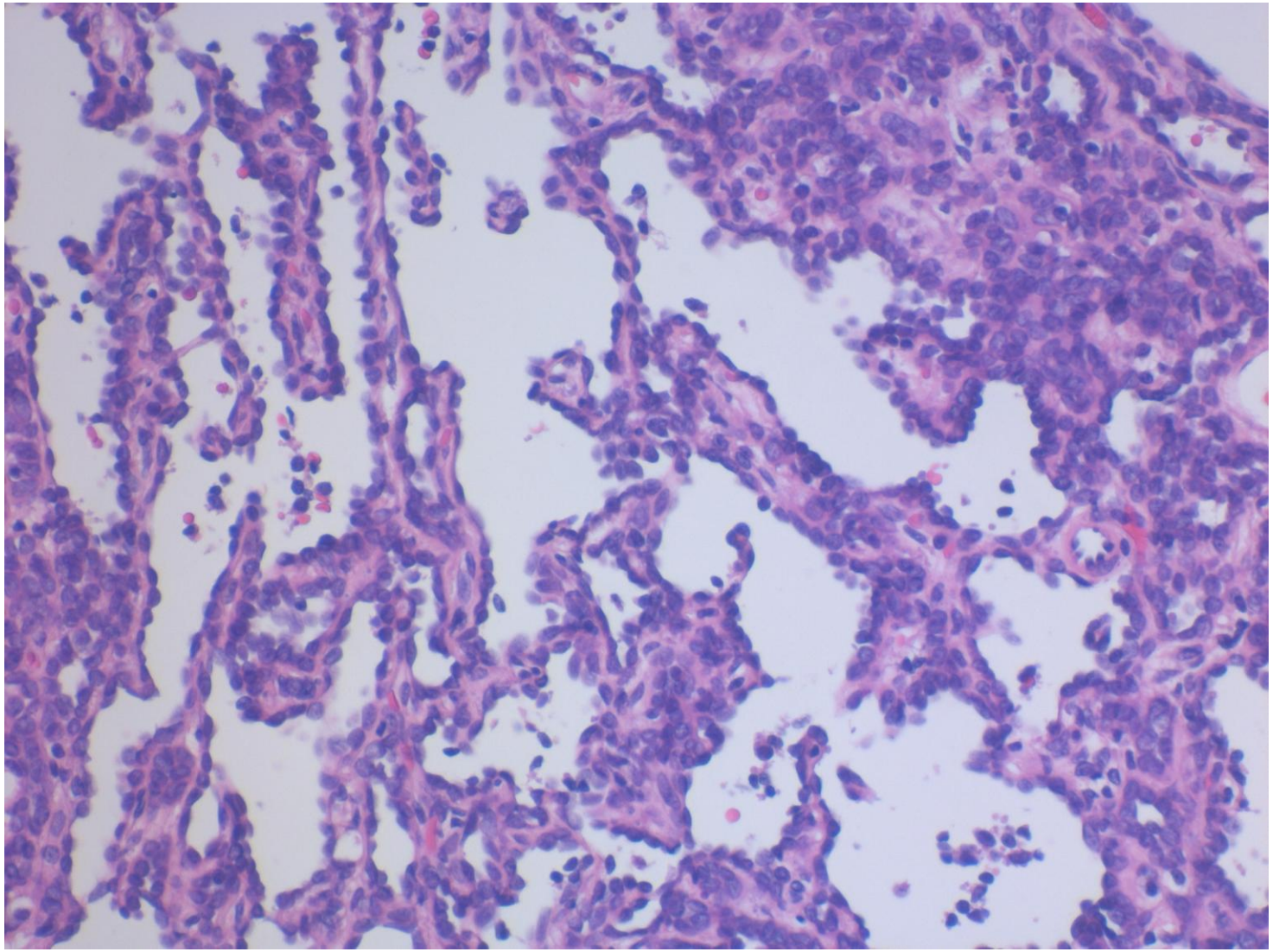
A partially removed demarcated right renal tumor seen in a 6-year-old girl reveals monomorphous growth of small tubule-forming cuboidal/columnar cells. Hypercellularity and scant cytoplasm provokes blue-celled appearance. H&E-1



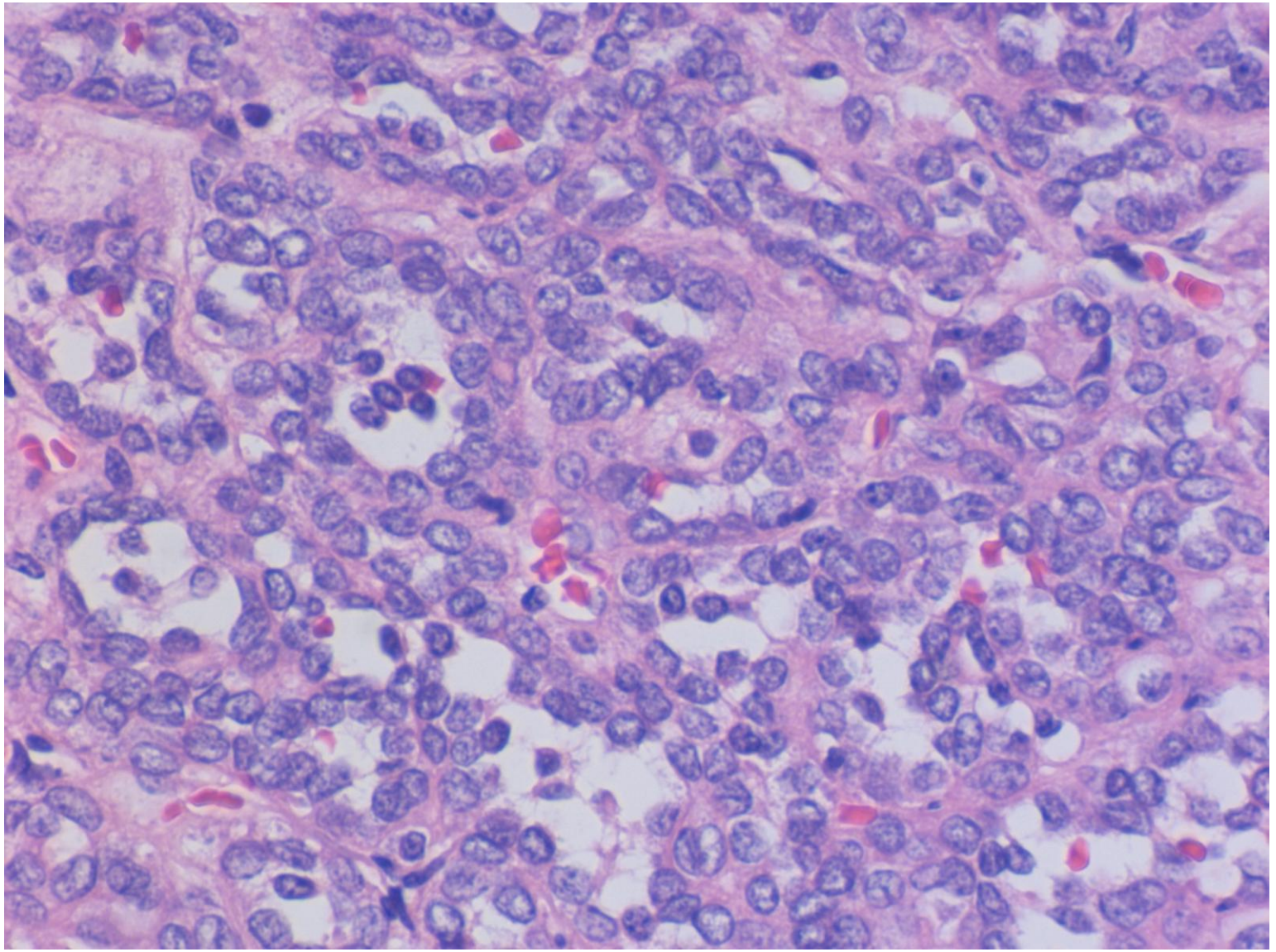
Metanephric adenoma seen in a 6-year-old girl reveals monomorphous blue-celled growth of small tubule-forming cuboidal/columnar cells. Fine lobulation is observed. H&E-2



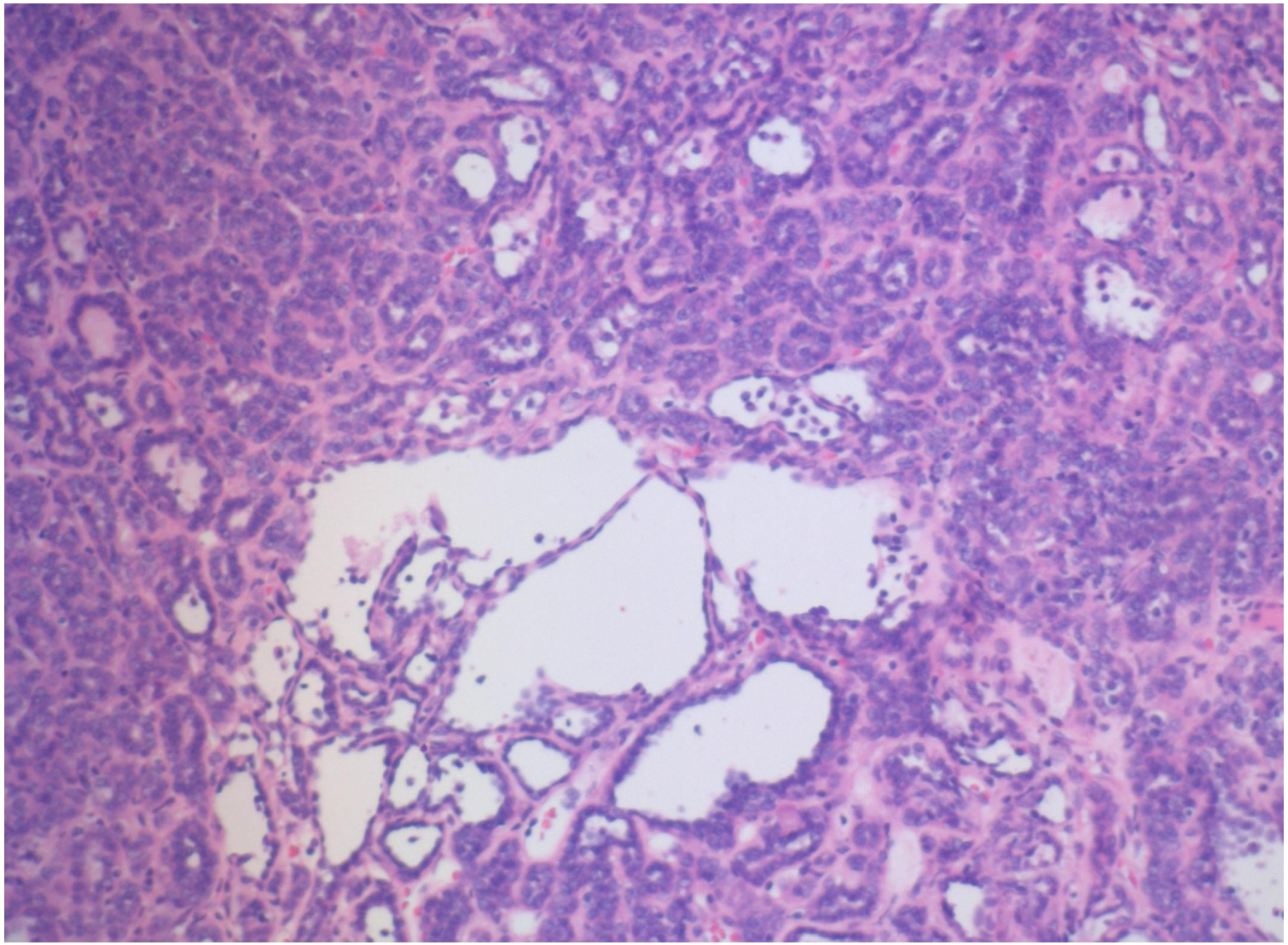
Metanephric adenoma seen in a 6-year-old girl reveals monomorphous blue-celled growth of small tubule-forming cuboidal/columnar cells. The stroma is thin. H&E-3



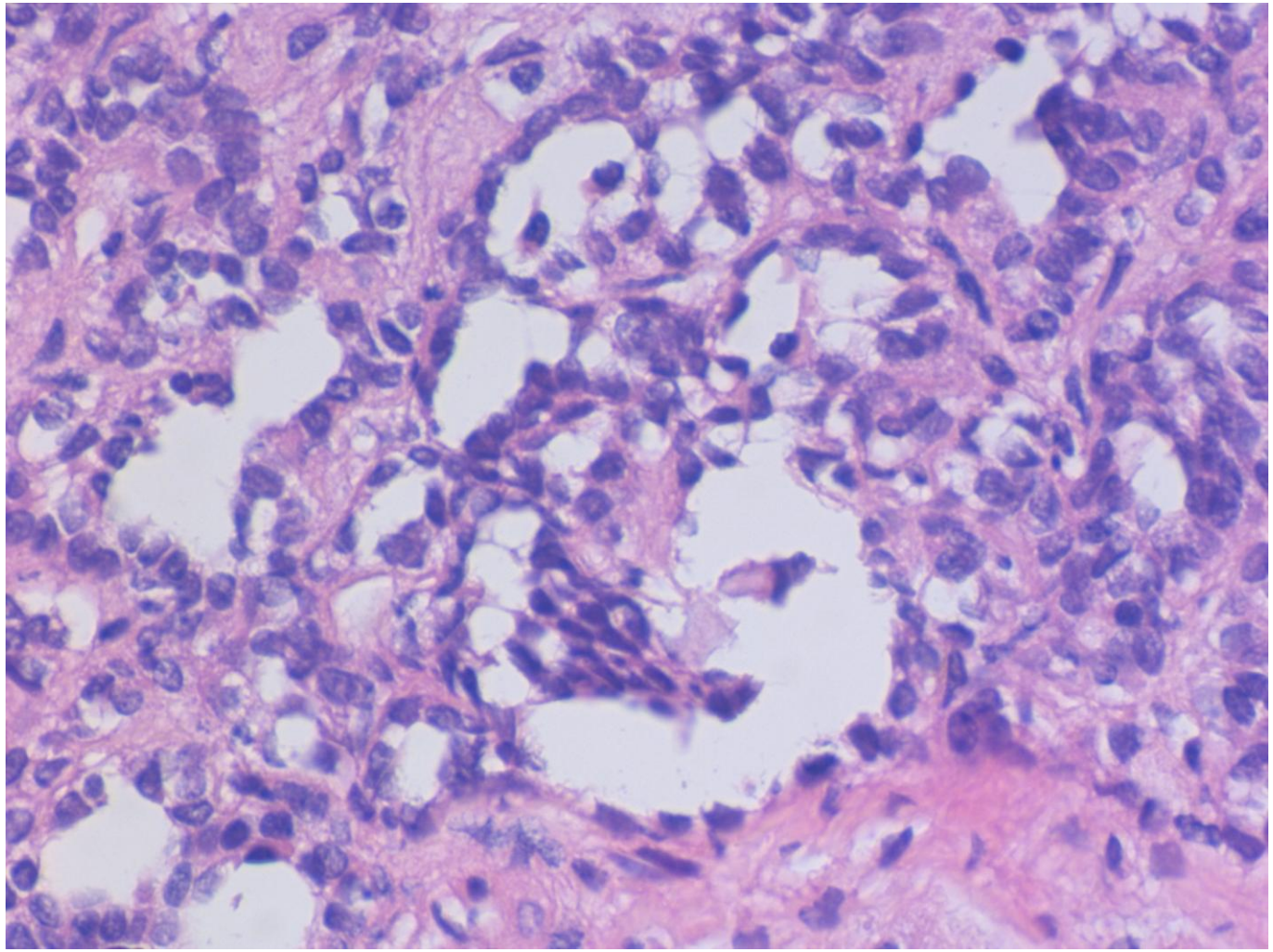
Metanephric adenoma seen in a 6-year-old girl reveals monomorphous growth of small tubule-forming cuboidal/columnar cells with luminal dilatation. Hobnailed nuclei are observed. H&E-4



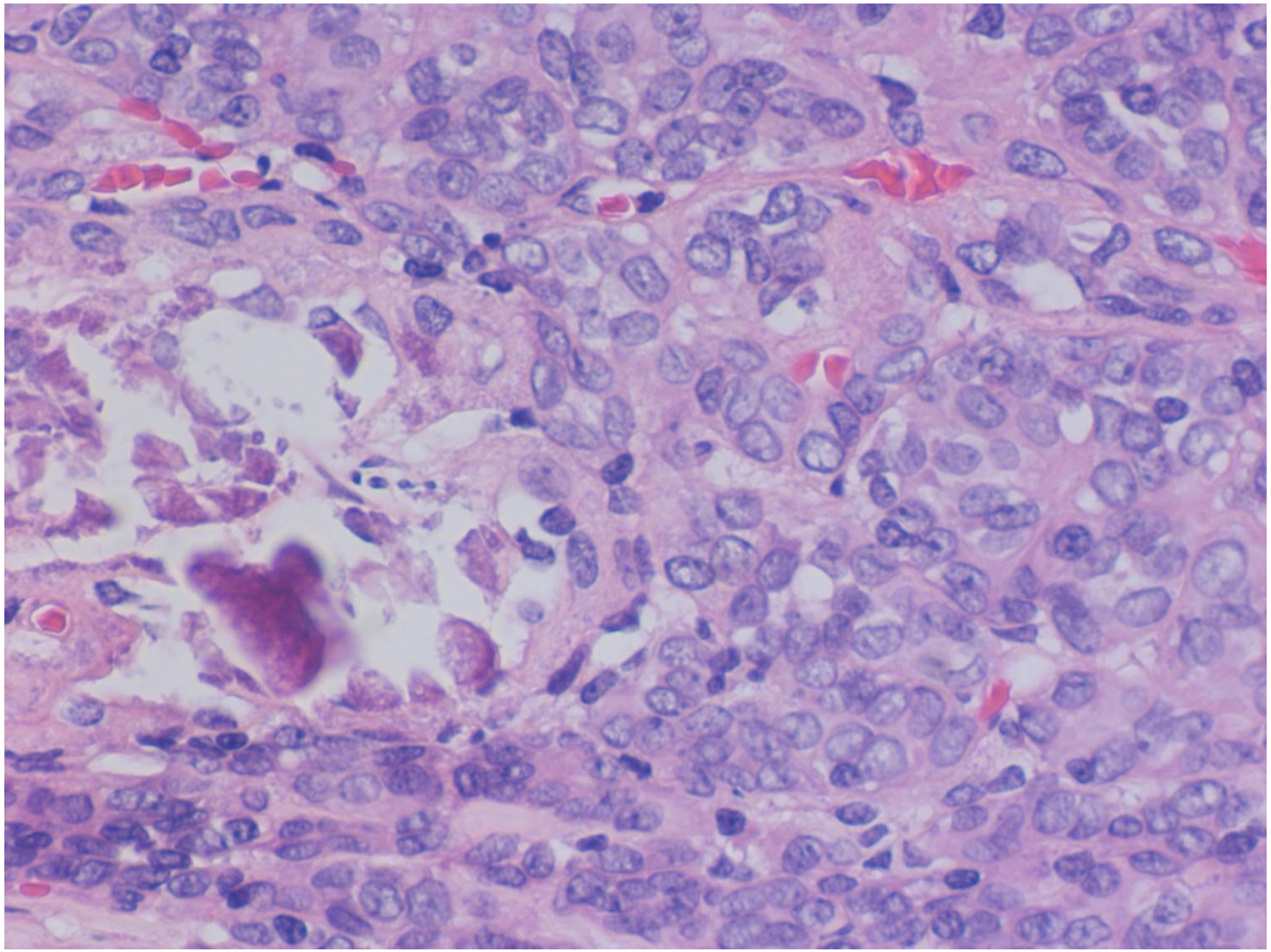
Metanephric adenoma seen in a 6-year-old girl reveals monomorphous growth of small tubule-forming cuboidal/columnar. Hobnailed nuclei are focally observed. H&E-5



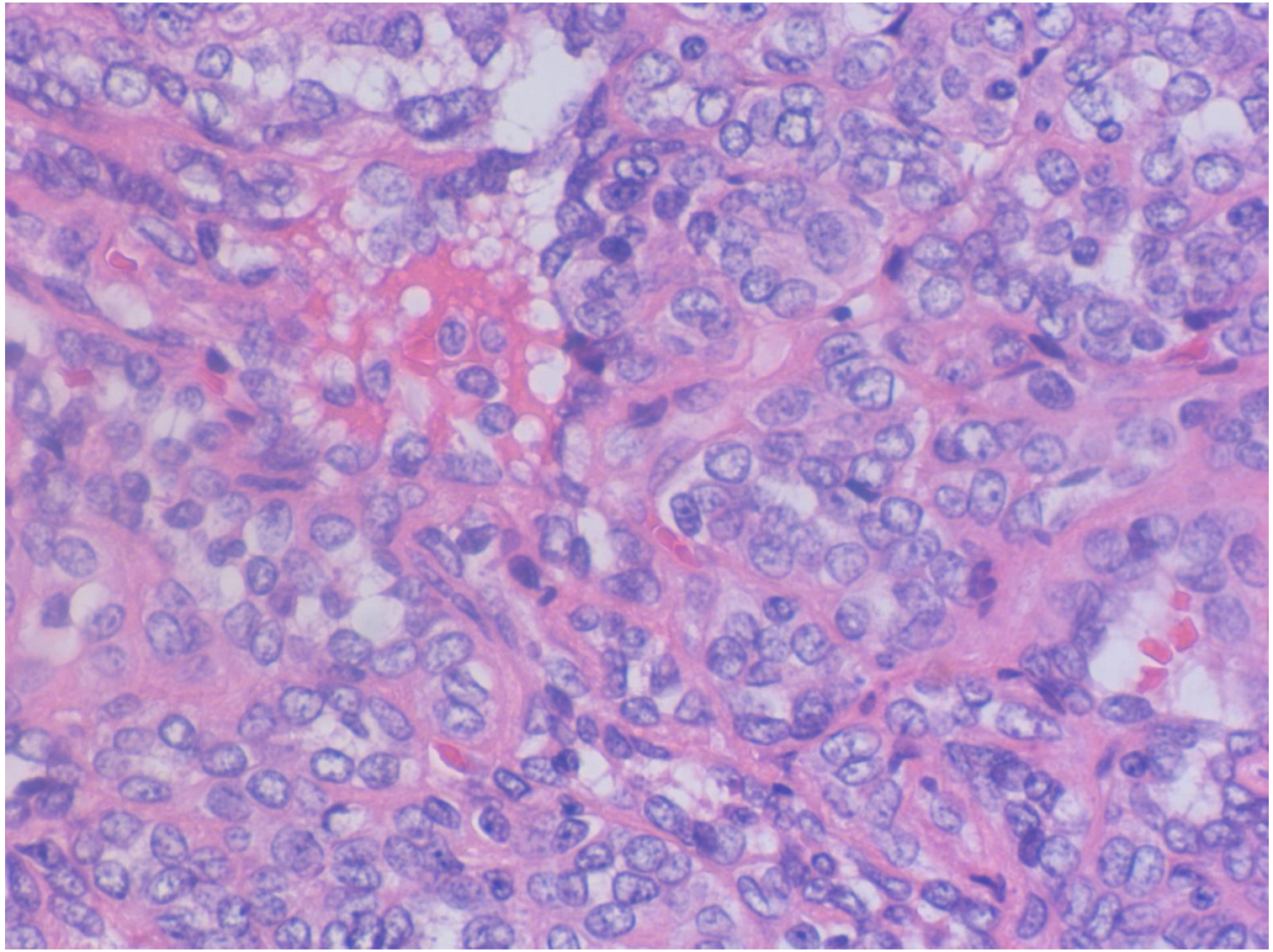
Metanephric adenoma seen in a 6-year-old girl reveals monomorphous growth of small tubule-forming cuboidal/columnar cells focally with luminal dilatation. Hobnailed nuclei are observed. H&E-4



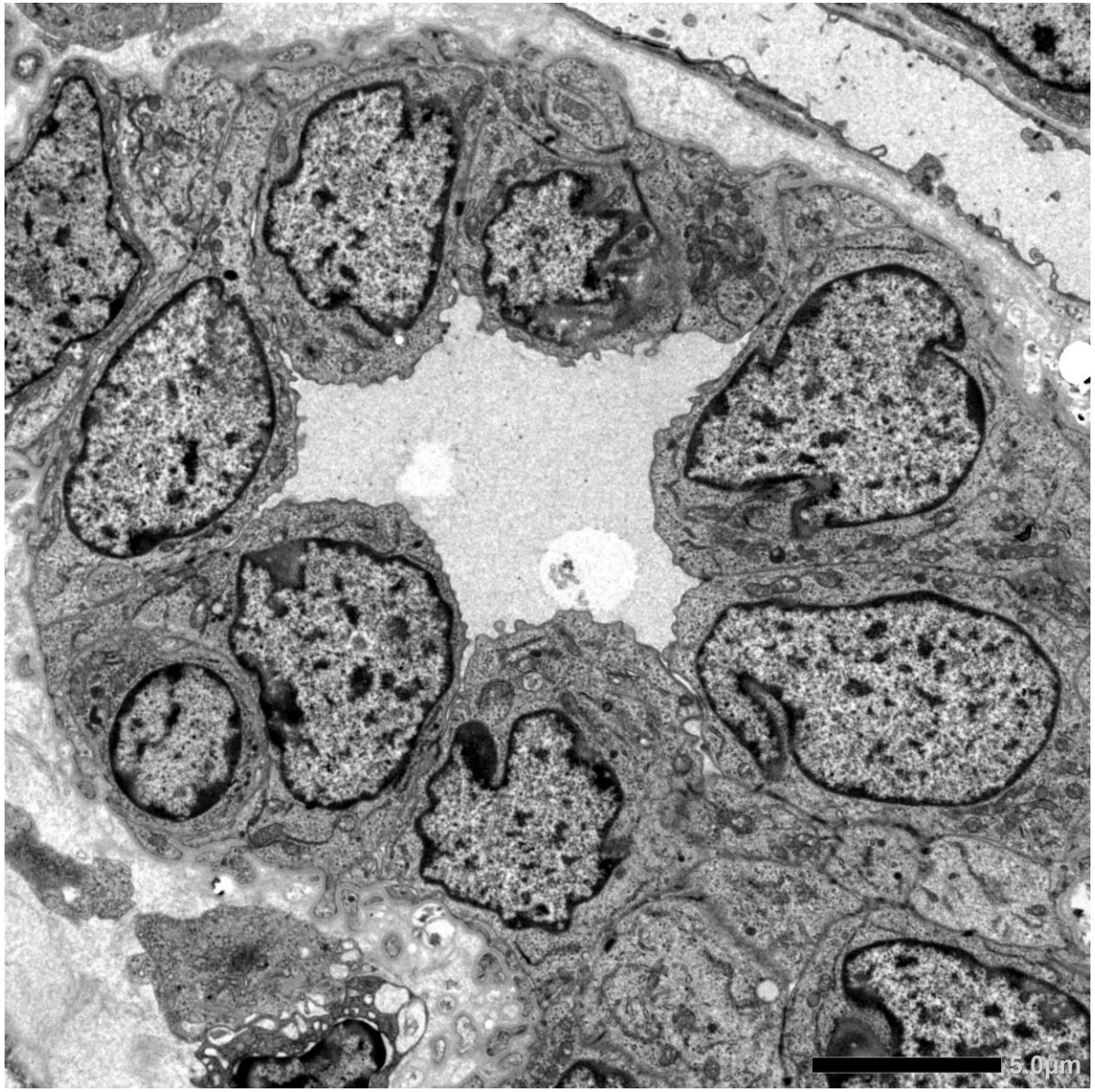
Metanephric adenoma seen in a 6-year-old girl reveals monomorphous growth of small tubule-forming cuboidal/columnar cells focally with glomeruloid formation. Hobnailed nuclei are observed. H&E-5



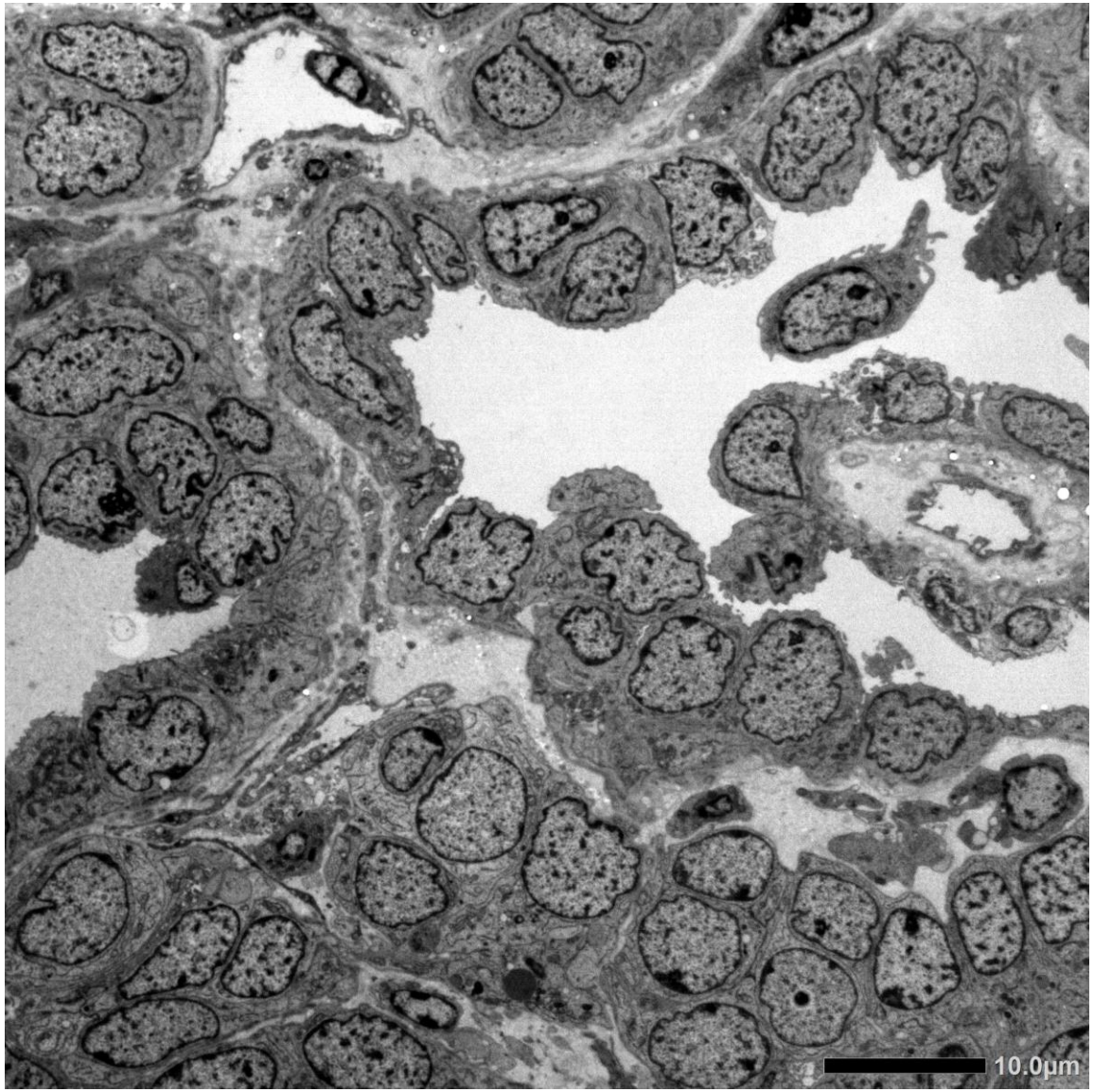
Metanephric adenoma seen in a 6-year-old girl reveals monomorphous growth of small tubule-forming cuboidal/columnar cells. Dystrophic calcification is focally associated. H&E-6



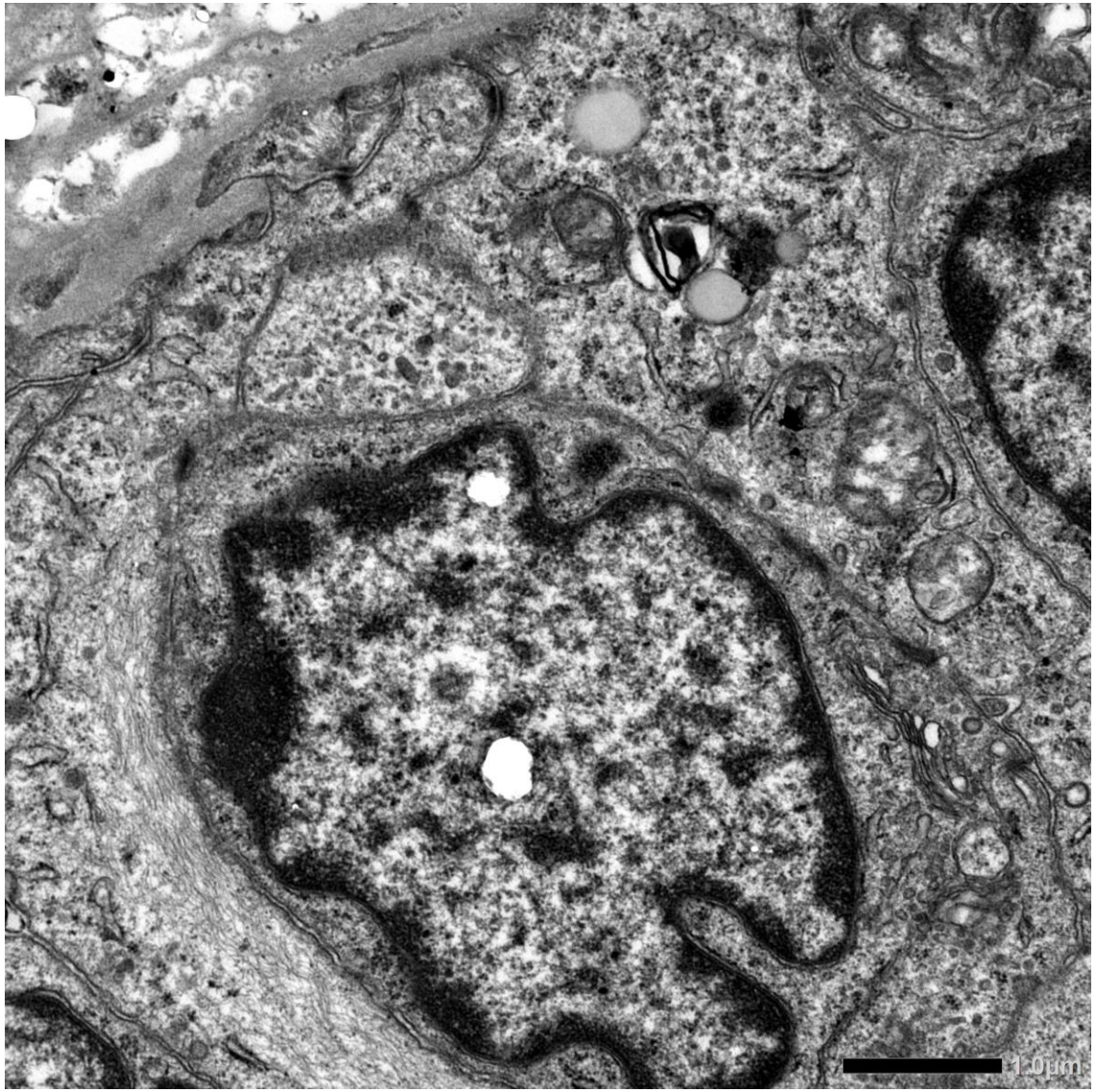
Metanephric adenoma seen in a 6-year-old girl reveals monomorphous growth of small tubule-forming cuboidal/columnar cells. No nuclear atypia is discerned. H&E-7



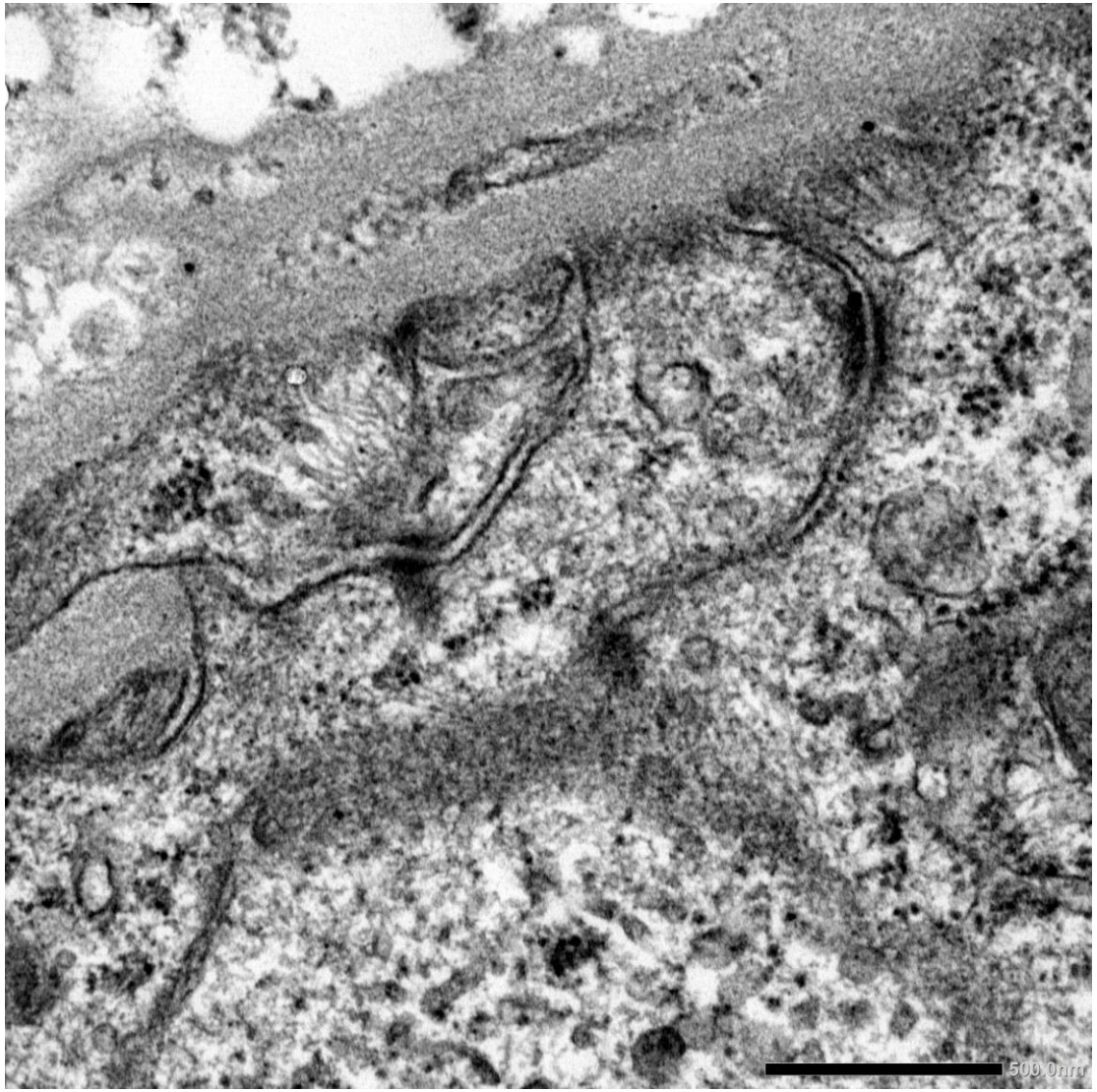
Ultrastructure of metanephric adenoma seen in a 6-year-old girl. Tubule formation is evident. Microvilli are poorly formed. EM-1



Ultrastructure of metanephric adenoma seen in a 6-year-old girl. Tubule formation is evident. Microvilli are poorly formed. Solid cell clusters are seen adjacent to the tubular structure. EM-2



Ultrastructure of metanephric adenoma seen in a 6-year-old girl. The tumor cells are associated with thick basal lamina. Desmosomal junctions are formed. Filamentous bundles are seen in the cytoplasm. EM-3



Ultrastructure of metanephric adenoma seen in a 6-year-old girl. The tumor cells are associated with thick basal lamina. Desmosomal junctions are formed. EM-4