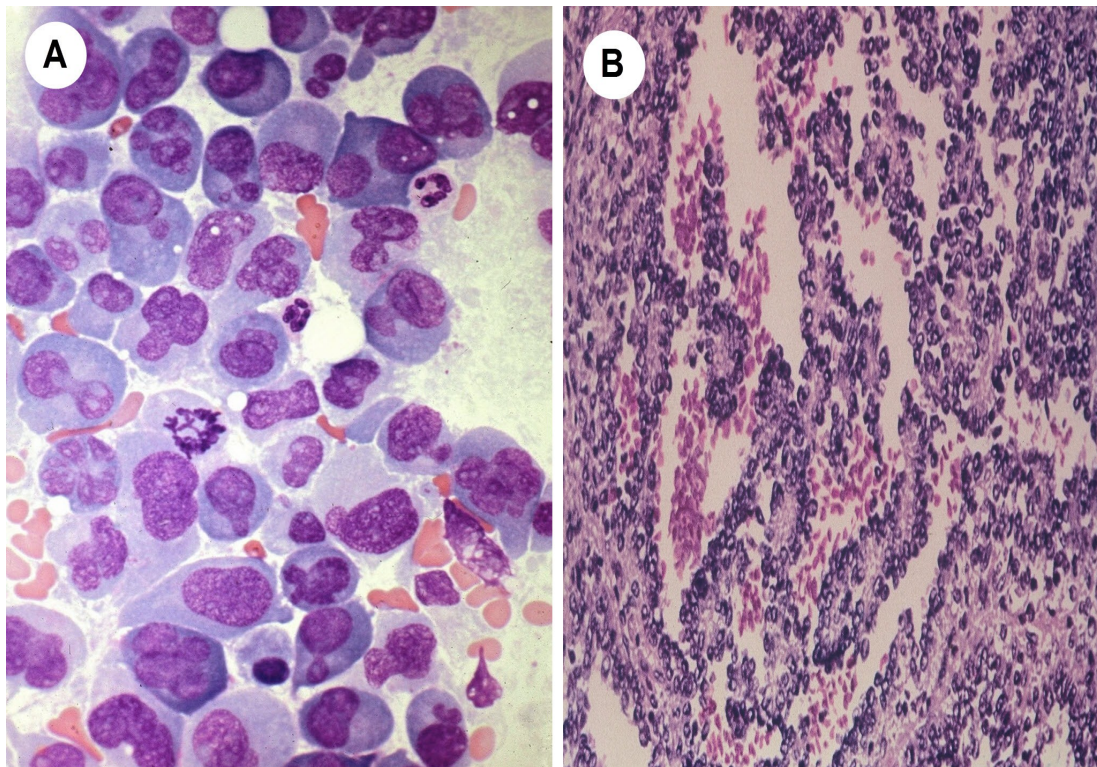
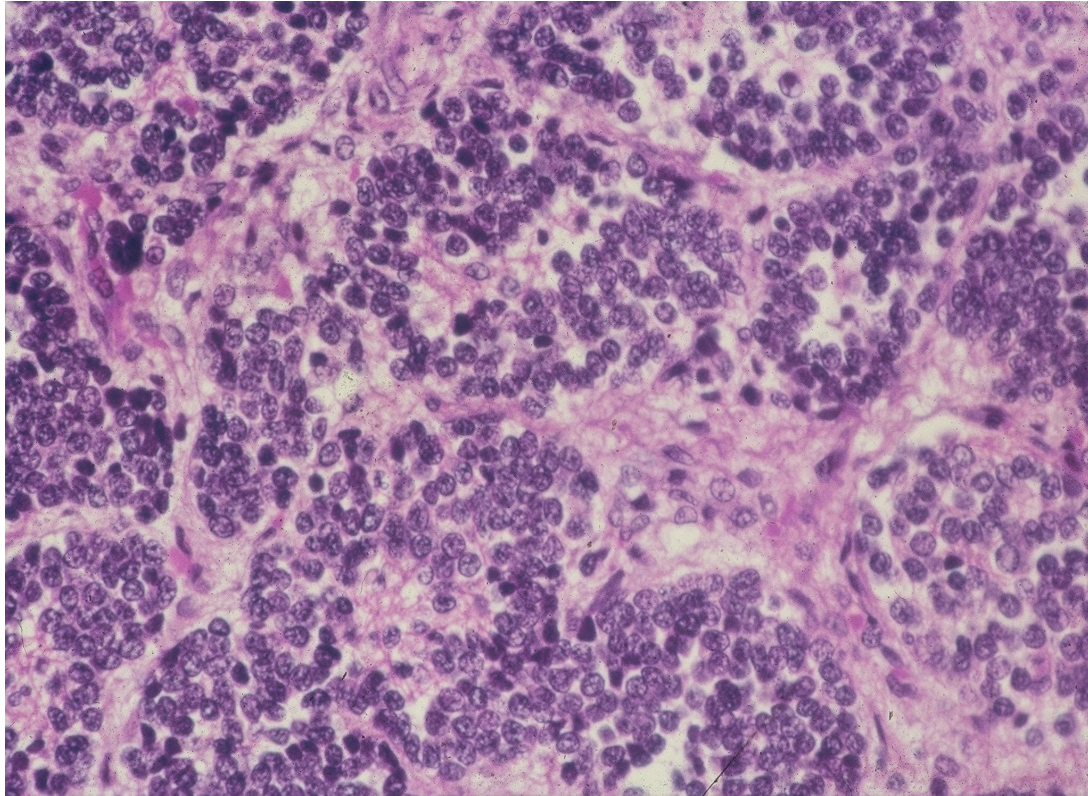


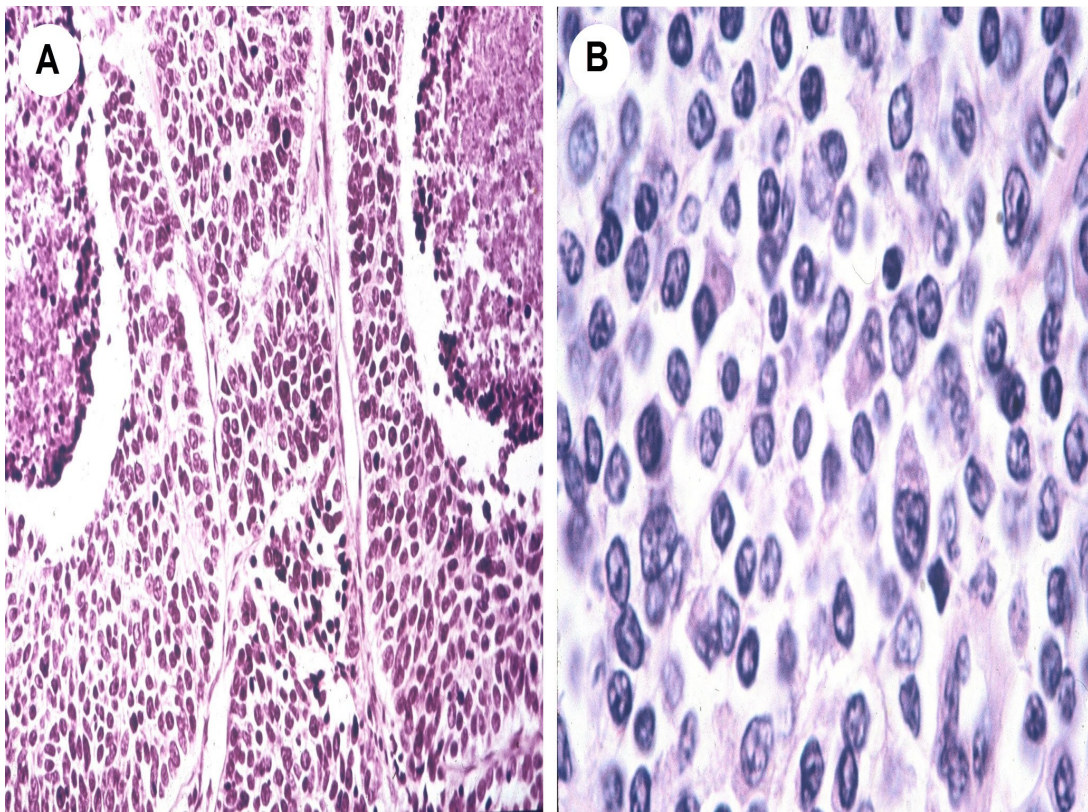
15 Diagnostic Challenges and Pseudoneoplasms



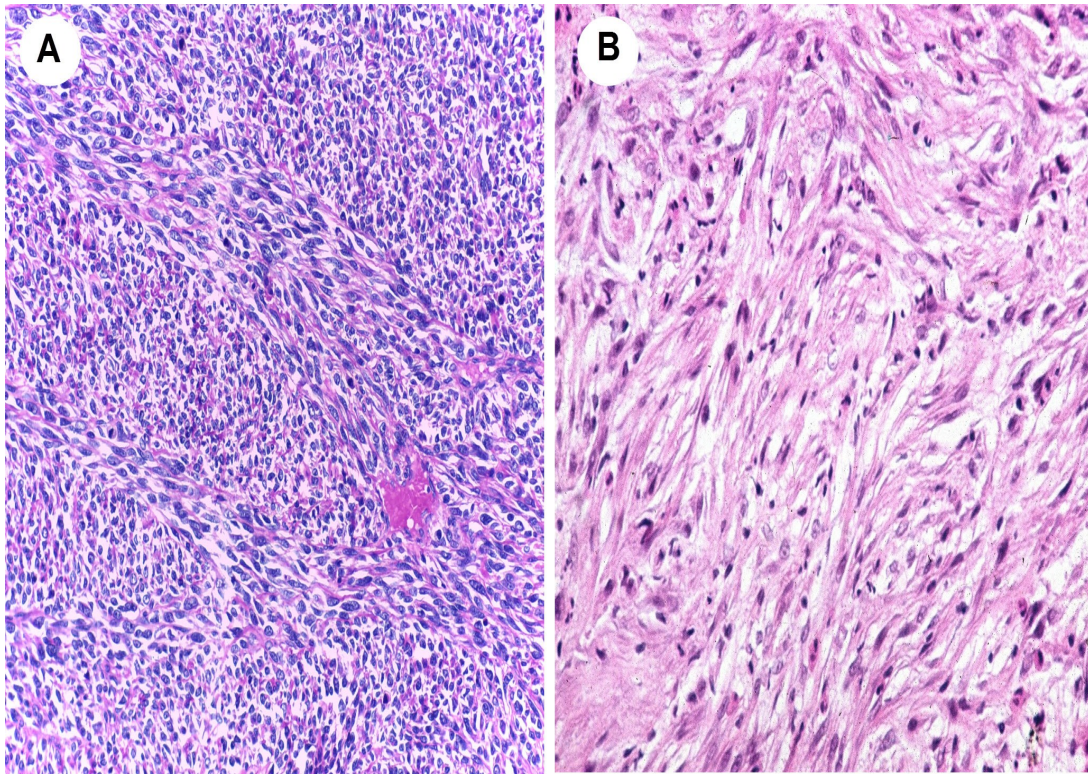
P 19-1. Round cell tumors of bone. **A** Plasmacytoma, pure population of plasma cells including atypical binucleated forms. **B** Ewing's sarcoma, cellular round cell tumor with endothelioma pattern.



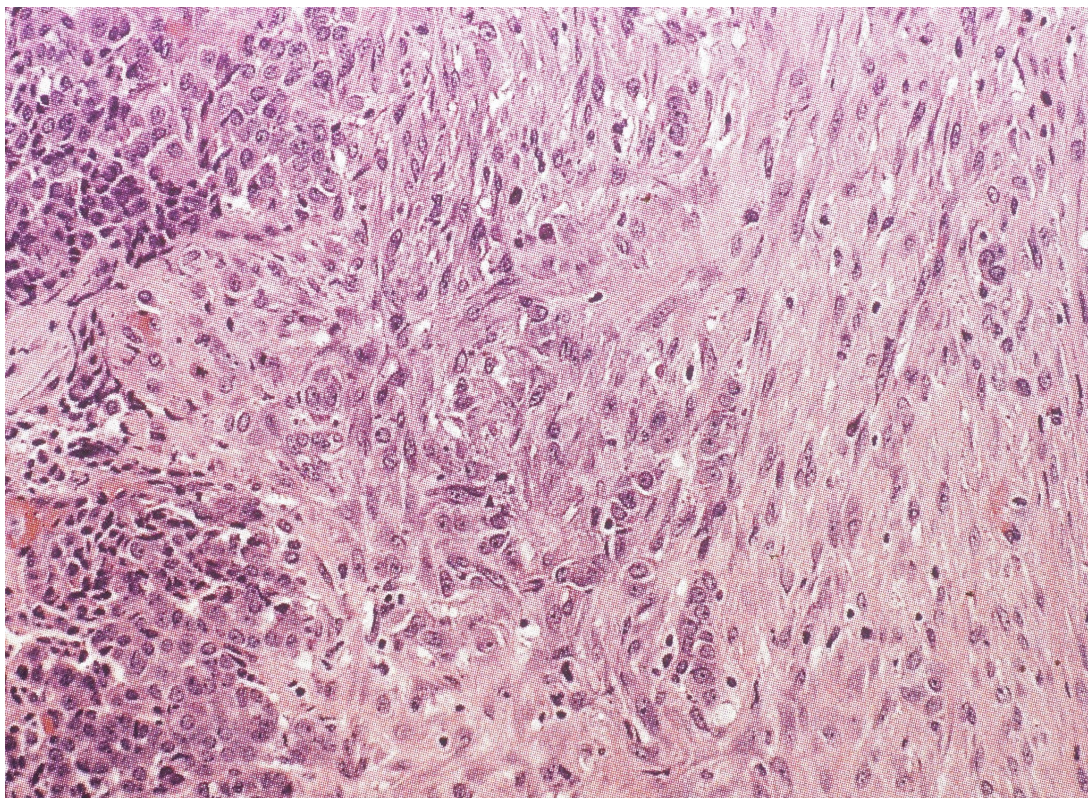
P 19-2. Neuroblastoma. Groups of neuroblasts with pseudorosette pattern (Hommer Wright) surrounded by neuropil stroma.



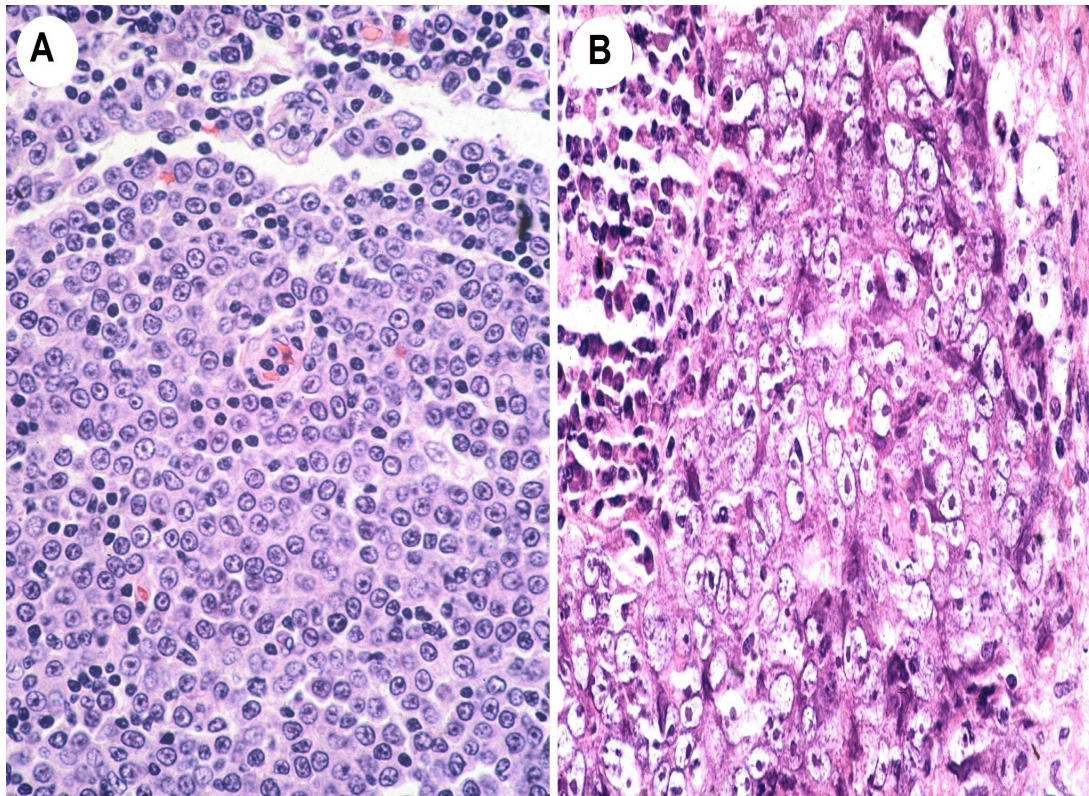
P 19-3. Round cell tumors. **A** Small cell lung carcinoma. **B** Small cell non-Hodgkin lymphoma.



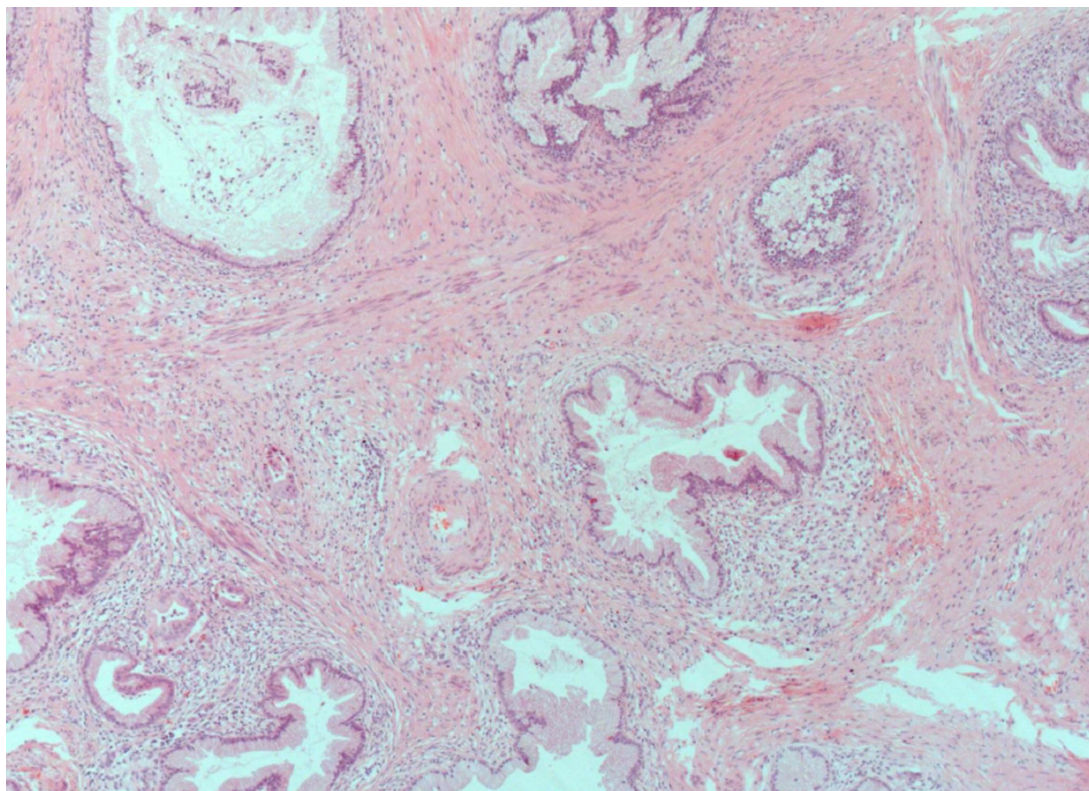
P 19-4. Spindle cell sarcoma. **A** Leiomyosarcoma, interdigitating pattern. **B** Gastrointestinal stromal tumor, diagnosis confirmed by DOG1 but the use of targeted therapy guided by c-Kit.



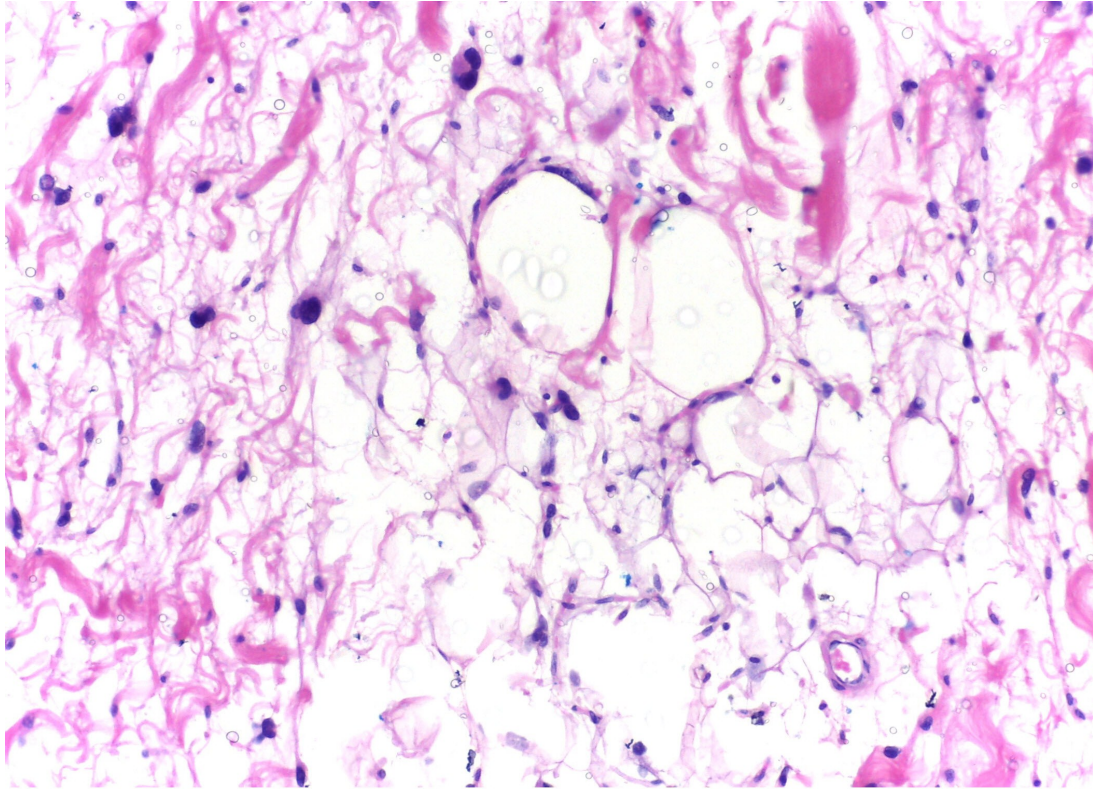
P 19-5. Biphasic mesothelioma. Groups of epithelioid cells and bundles of malignant spindle cells.



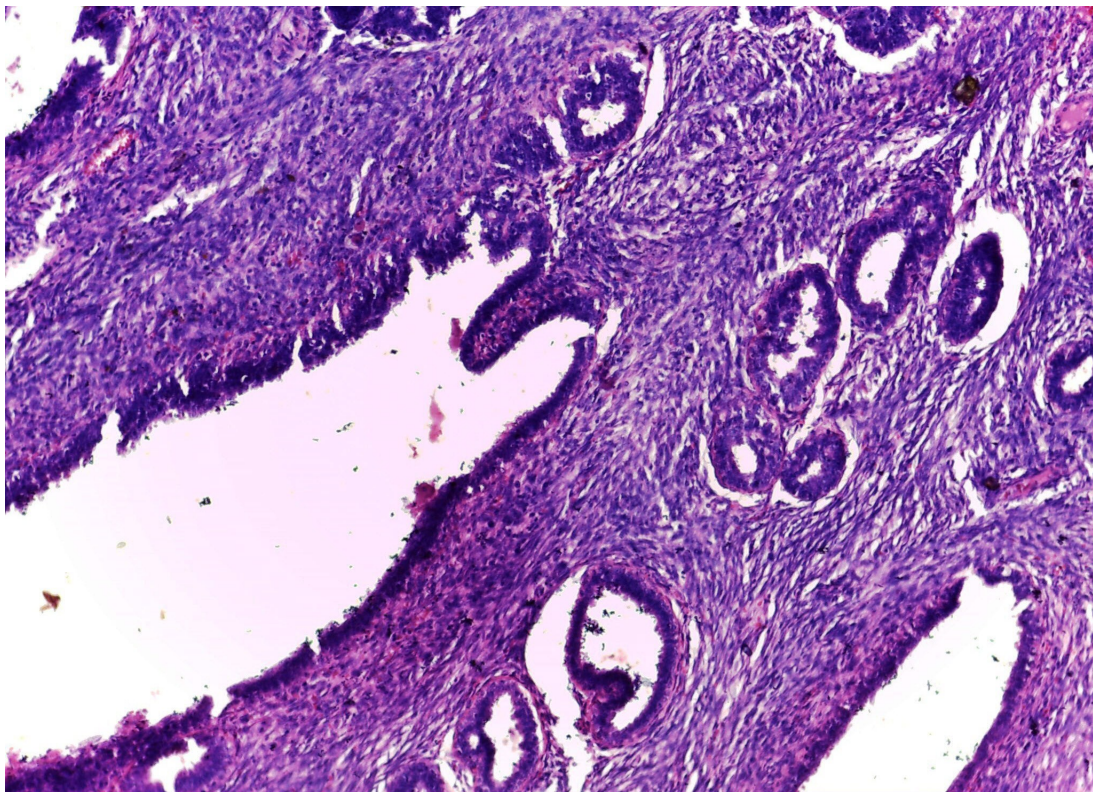
P 19- 6. Malignant large round cell tumors. **A** Large cell non-Hodgkin lymphoma. **B** Undifferentiated nasopharyngeal carcinoma.



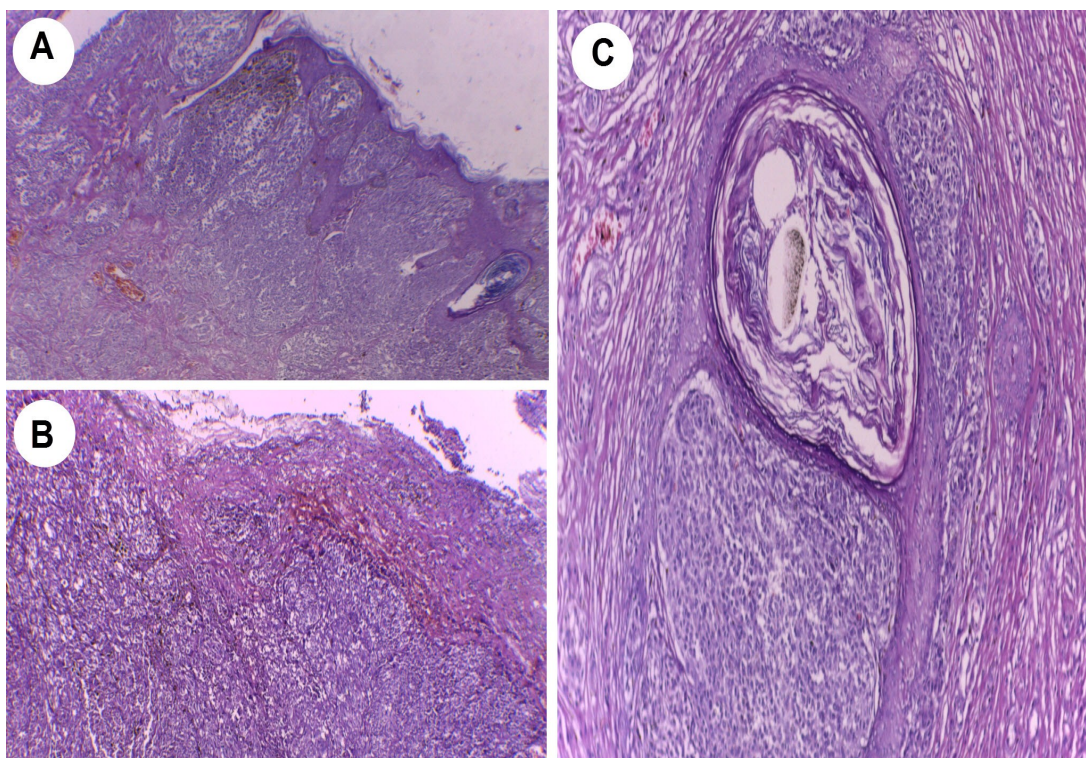
P 19-7. Cervix, minimal deviation adenocarcinoma (adenoma malignum). The glands are bland-looking but they invade deep into the cervix (> 3mm).



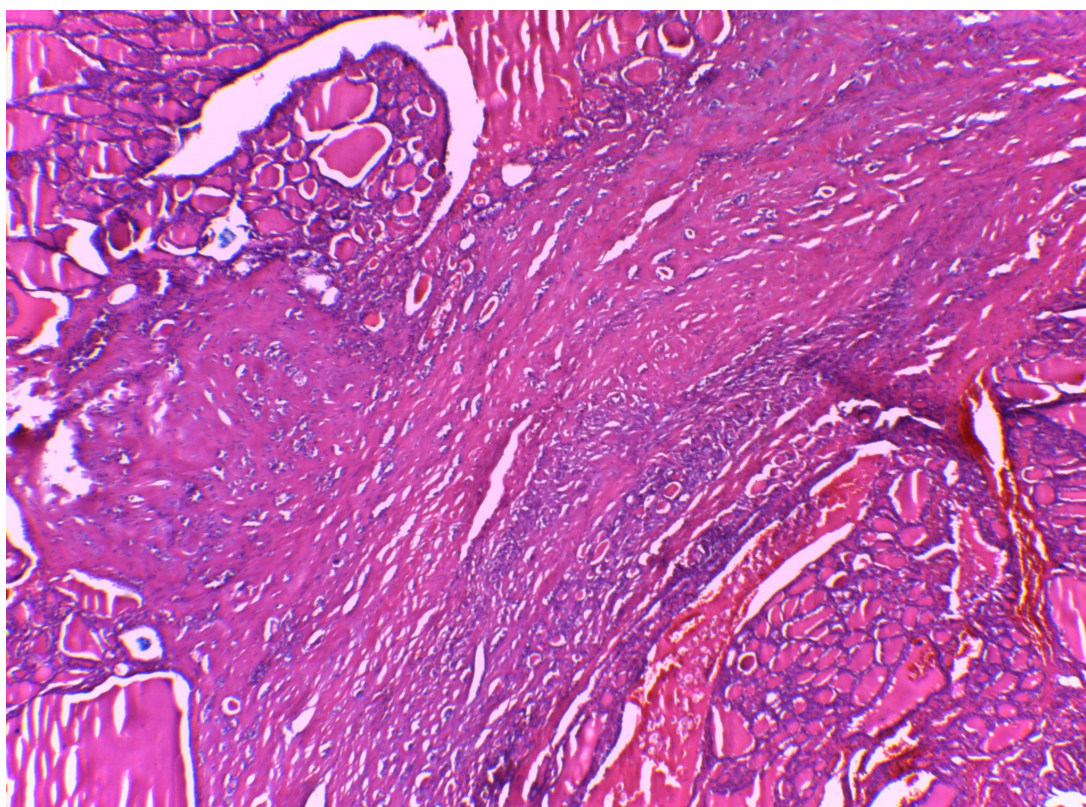
P 19-8. Atypical lipomatous tumor. There is marked variation in the size of fat cells associated with numerous pleomorphic nuclei.



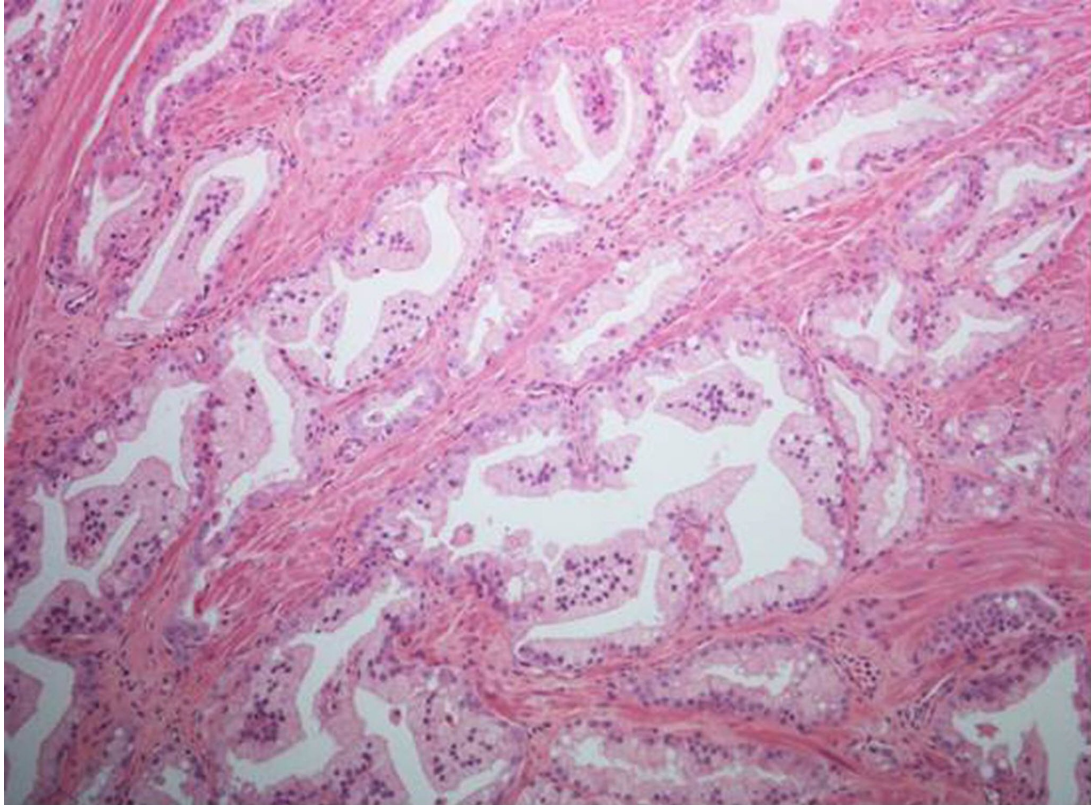
P 19-9. Malignant phyllodes tumor. Marked stromal hypercellularity with anaplasia, Ki67 labeling index >5%. Note the benign epithelial-lined cystic spaces.



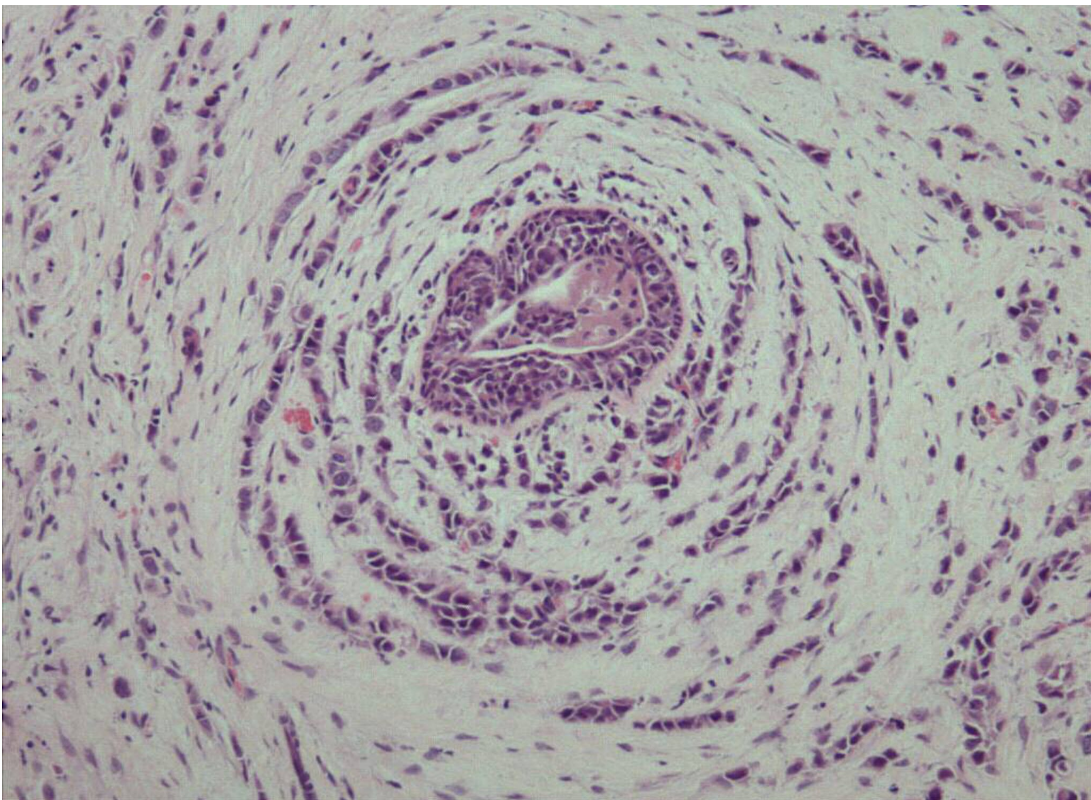
P 19-10. Minimal deviation melanoma. **A** Non-ulcerated nevus-like dermal neoplasm. **B** Associated metastatic melanoma in regional lymph node. **C** Hair follicle infiltration by melanoma cells helps to avoid this false negative error.



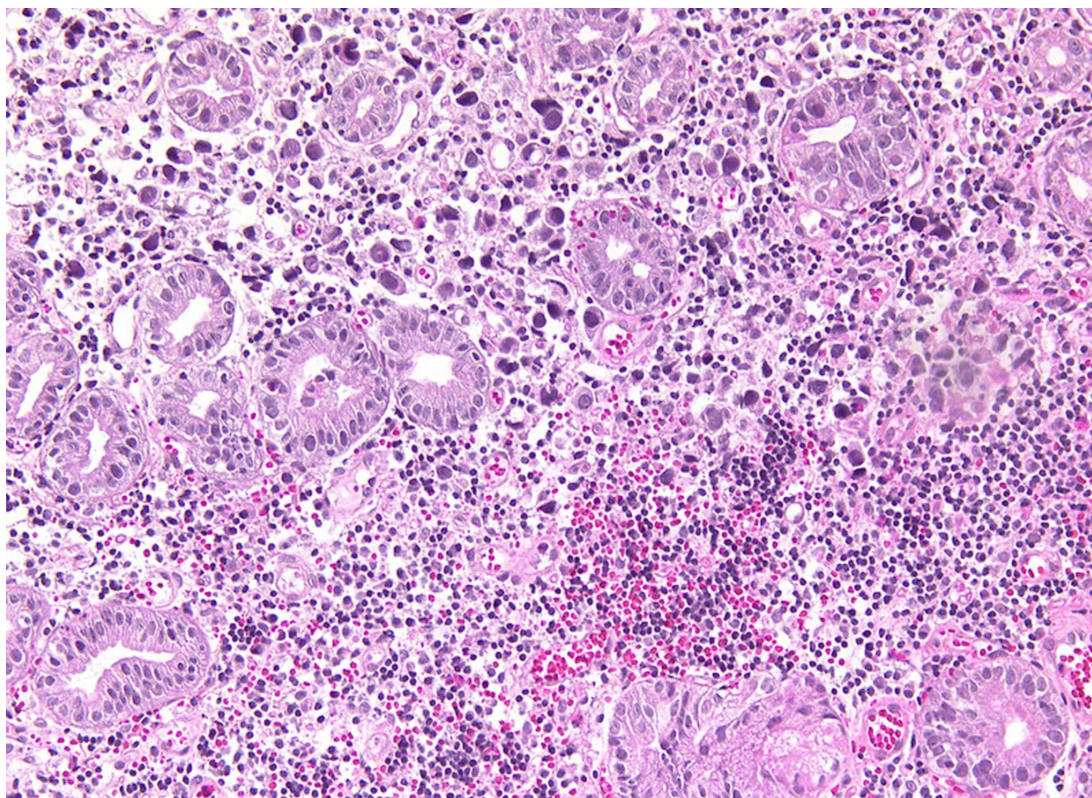
P 19-11. Thyroid gland, macrofollicular carcinoma. It simulates nodular hyperplasia, but note the presence of the tumor nodules on both sides of the tumor capsule.



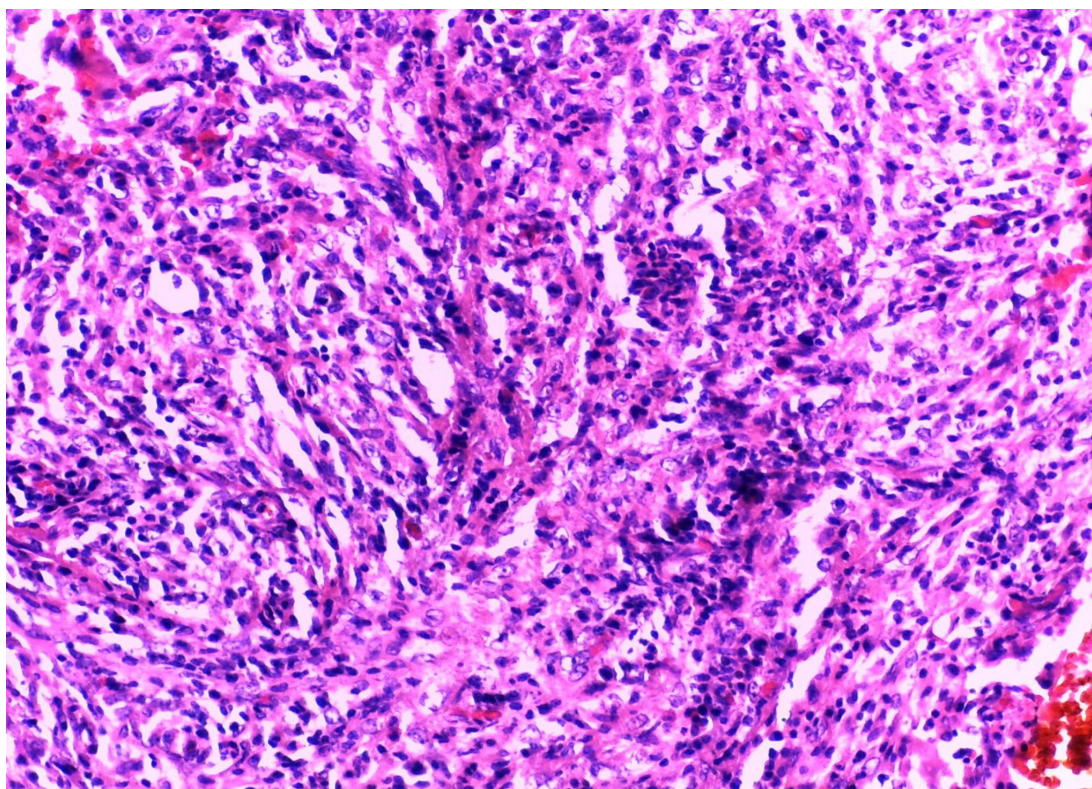
P 19- 12. Prostatic carcinoma, Pseudohyperplastic variant. Papillary infoldings, crowded and large atypical glands. The lack of basal cell layer confirms the diagnosis of malignancy.



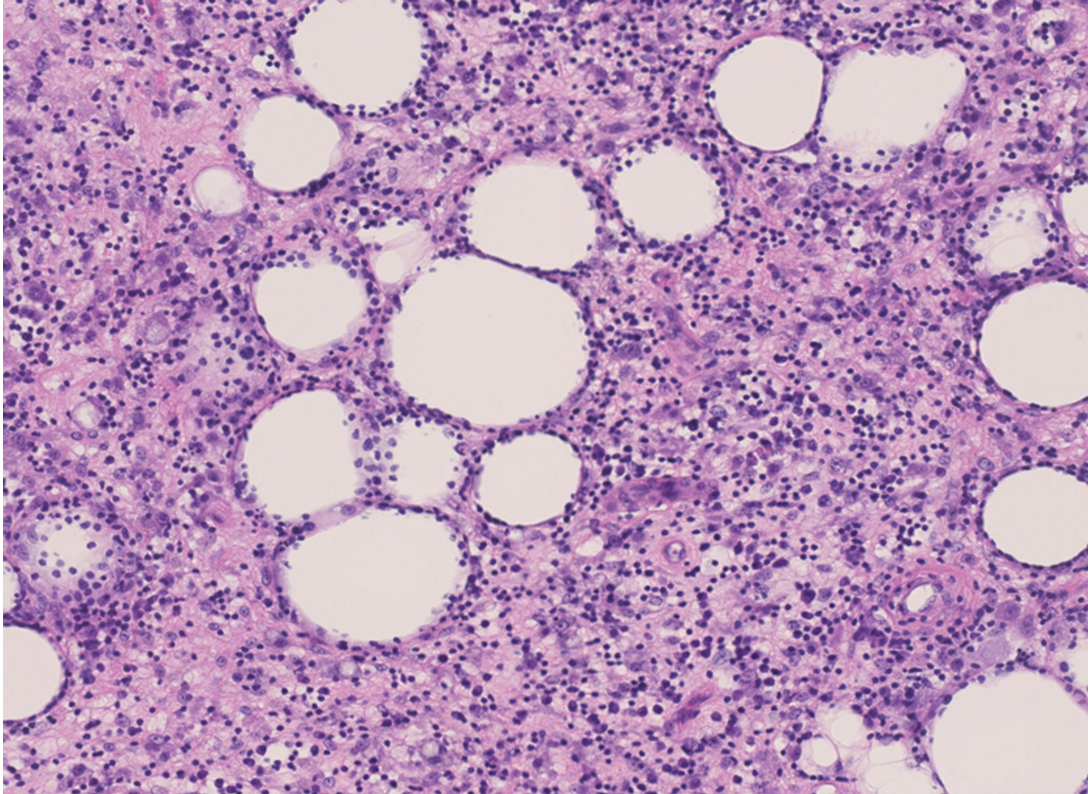
P19-13. Breast invasive lobular carcinoma showing arrangement of the tumor cells in single (indian) files and around a normal breast duct (targetoid pattern).



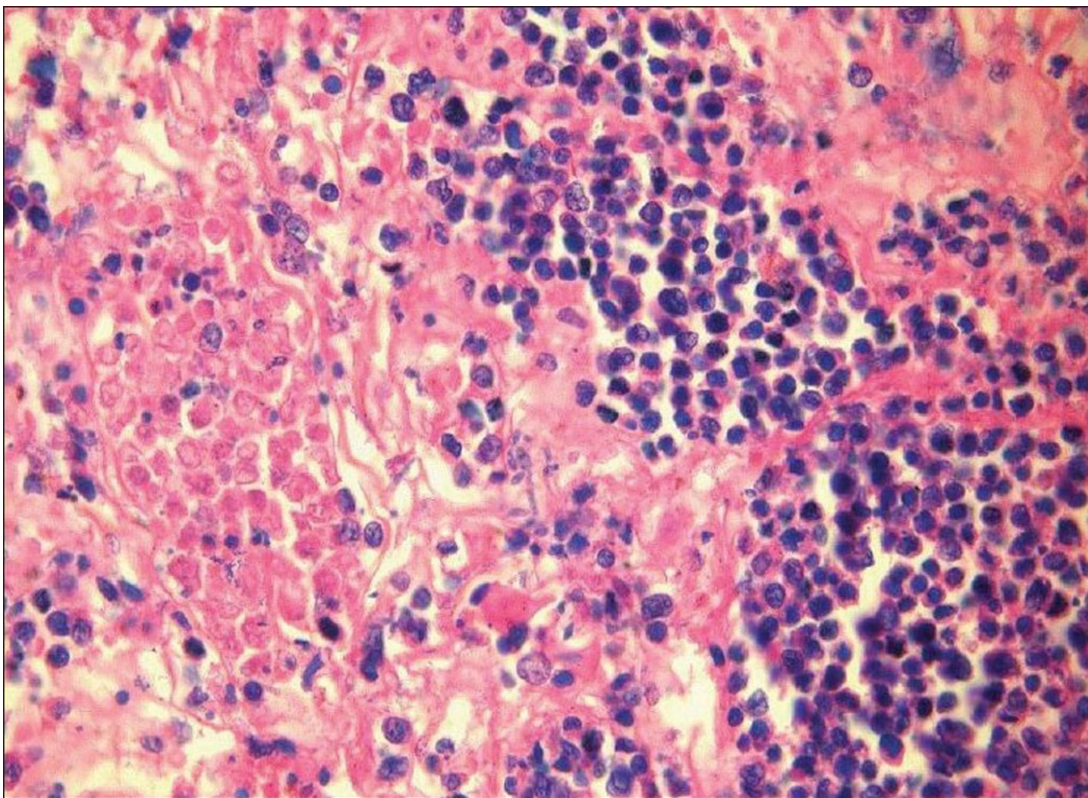
P 19-14. Stomach, diffuse type carcinoma of Lauren. Tumor cells, not forming glands and infiltrate as individual cells or small clusters simulating inflammatory infiltrate.



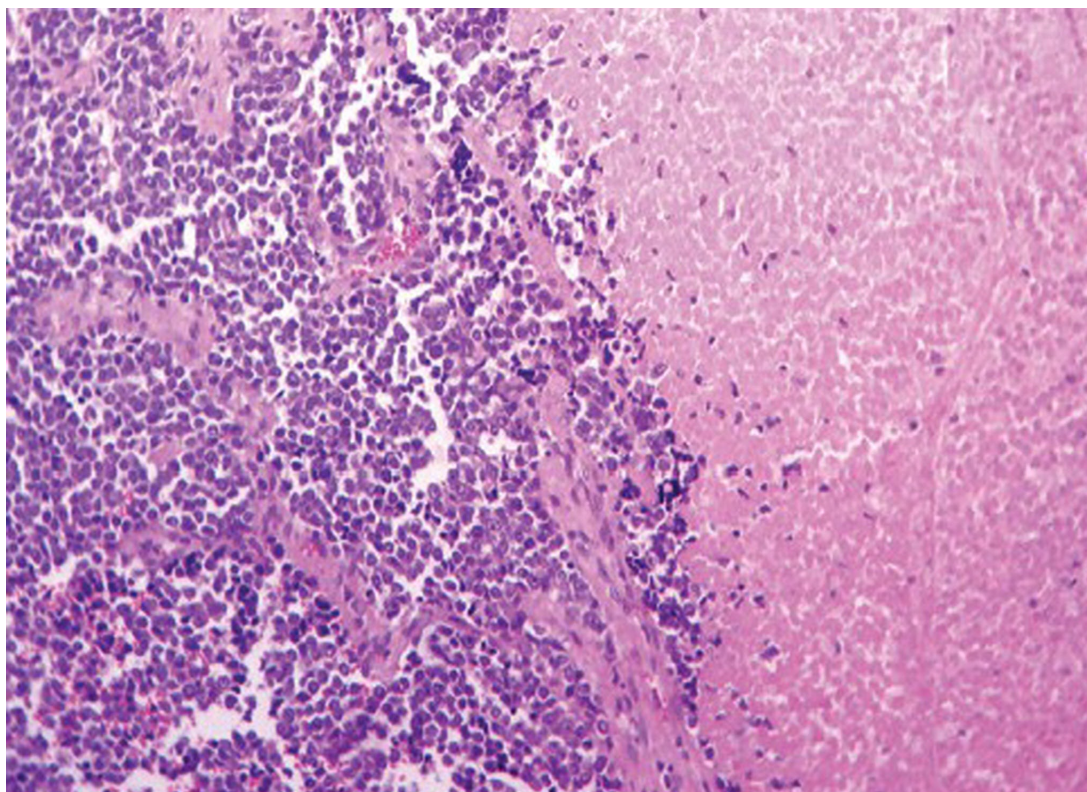
P 19-15. Inflammatory myofibroblastic tumor. Spindle cells with focal inflammatory infiltrate of lymphocytes, plasma cells, eosinophils and histiocytes.



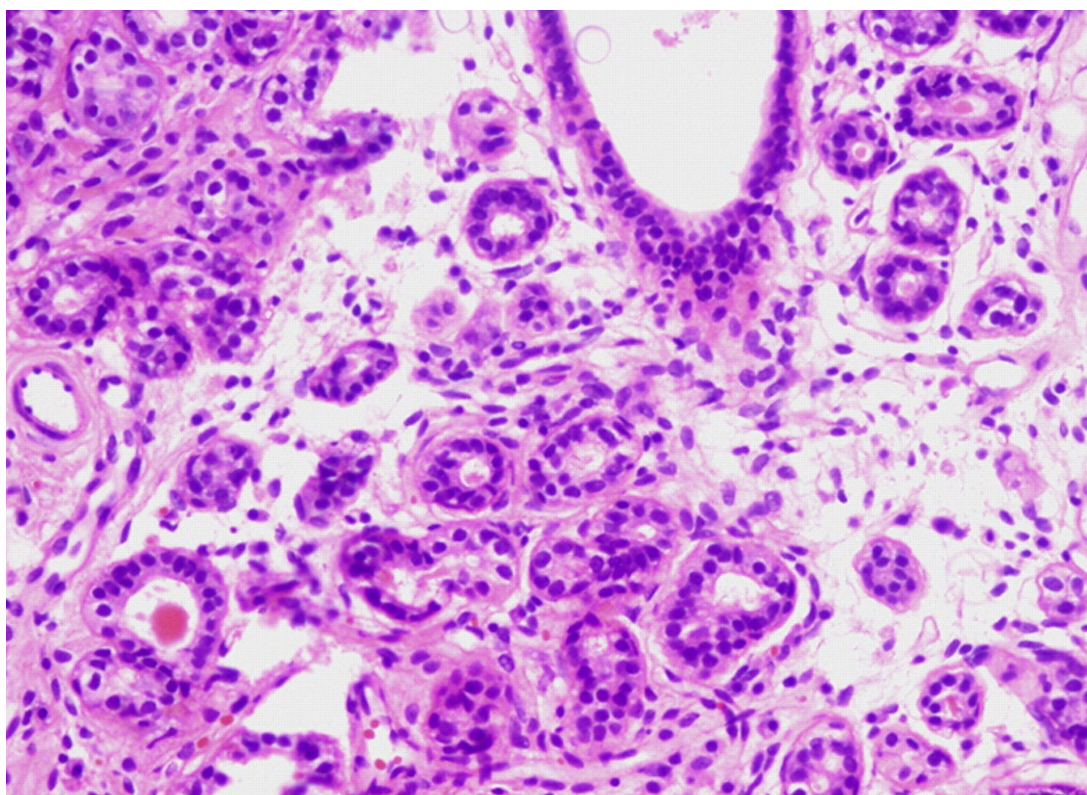
P 19-16. Panniculitis like T-cell lymphoma. Infiltration of subcutaneous fat lobules by atypical lymphocytes (resembling inflammatory panniculitis).



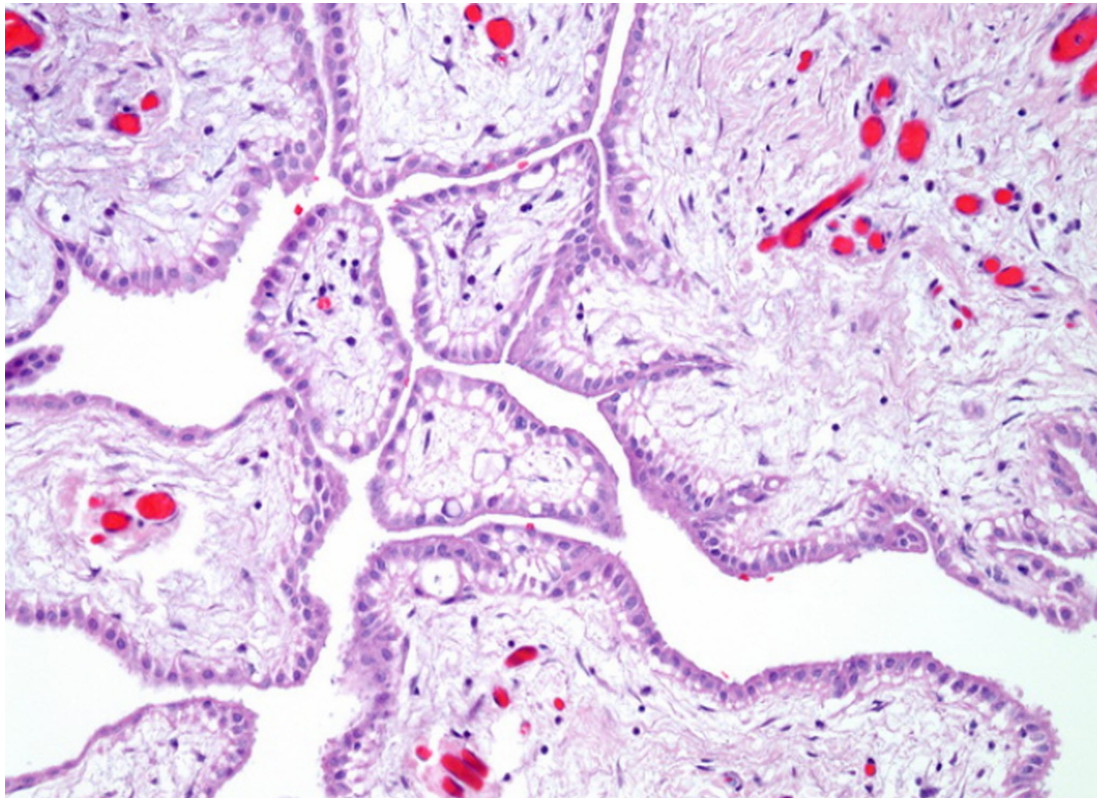
P 19-17. Necrotic lymphoma. Necrotic esinophilic cells keep their shape, lack granulomatous reaction, whereas TB necrosis is granular and associated with Langhan's giant cecls.



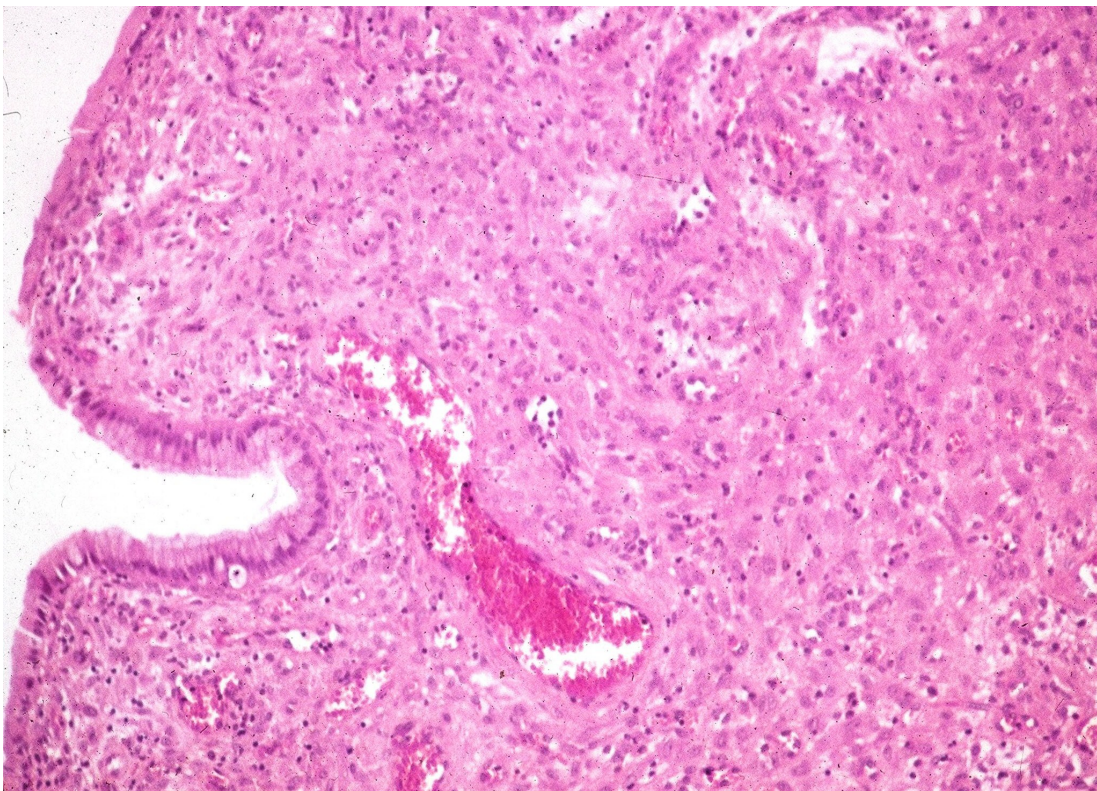
P 19-18. Necrotic Ewing's sarcoma. Ischemic coagulative necrosis (Rt field) is peripheral in location away from the blood vessels.



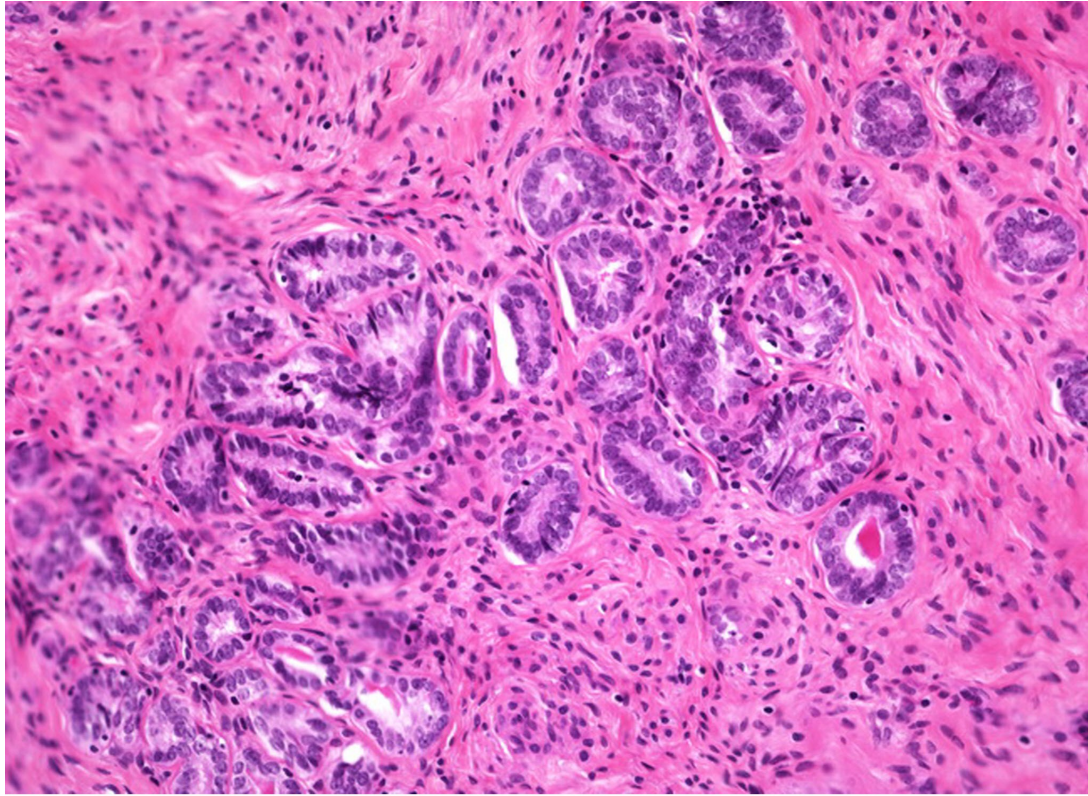
P 19-19. Breast microglandular adenosis. Pseudo-infiltrating very small, uniform glands lacking myoepithelium and lined by single epithelial cell layer with bland nuclei.



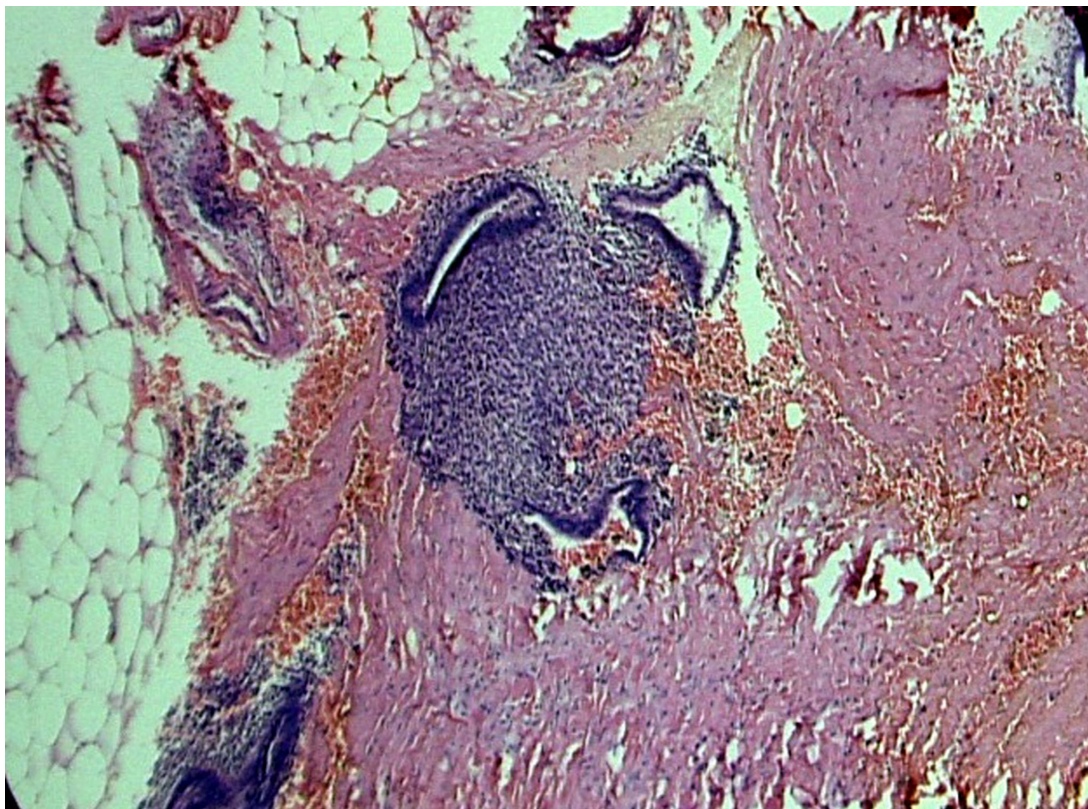
P 19-20. Pleural mesothelial hyperplasia. Papillae covered by mesothelial cells, simulates mesothelioma but the lesion is of a microscopic size (2-3 mm) with no mass lesion by CT.



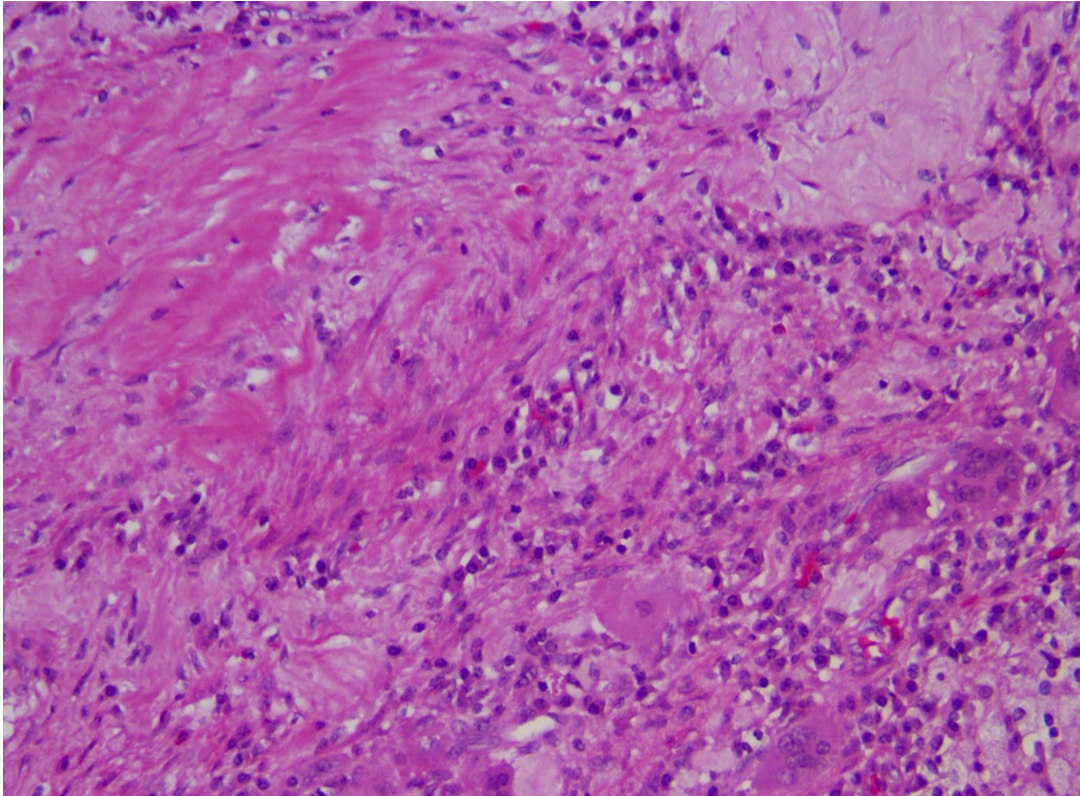
P 19-21. Endocervix, ectopic decidual tissue. Polygonal cells with abundant cytoplasm & bland nuclei, may be confused with squamous cell carcinoma, but cells are CK -ve and CD56 +ve.



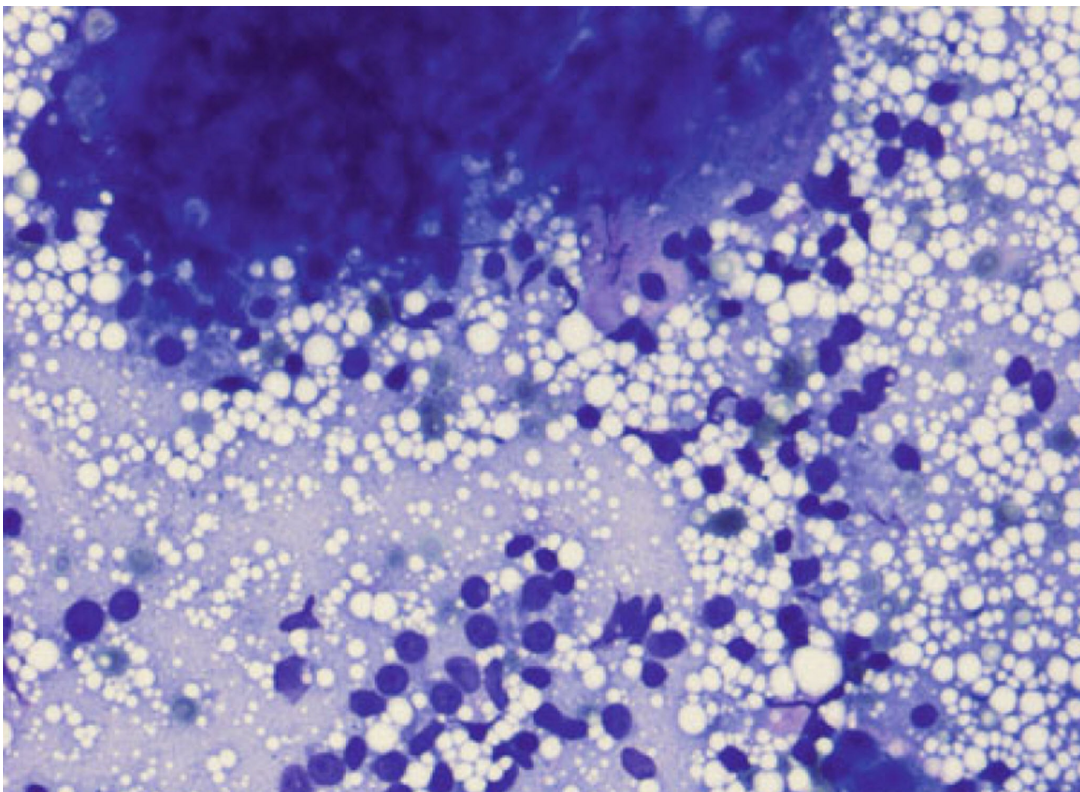
P 19-22. Cervix, mesonephric remnants. Small tubules of cuboidal cells with eosinophilic secretions. This developmental lesion may be misdiagnosed as adenocarcinoma.



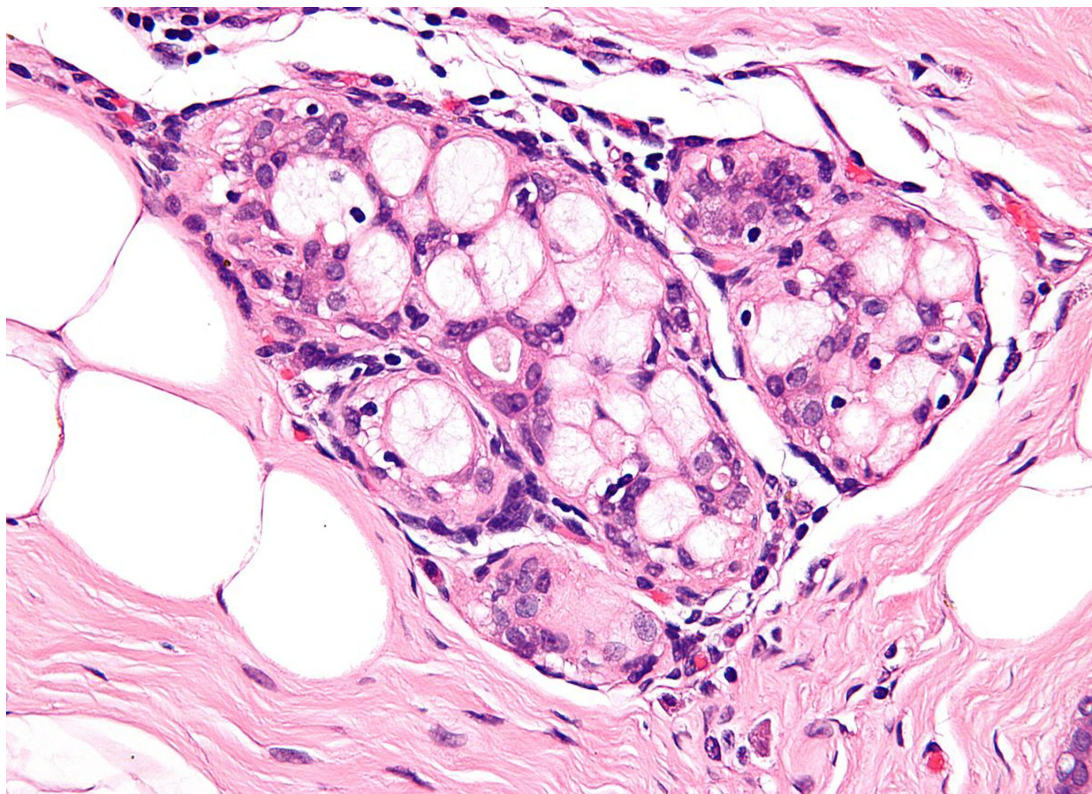
P 19-23. Abdominal wall endometriosis. Islands of endometrial glands and stroma with related hemorrhage are seen within abdominal wall fibrofatty tissue.



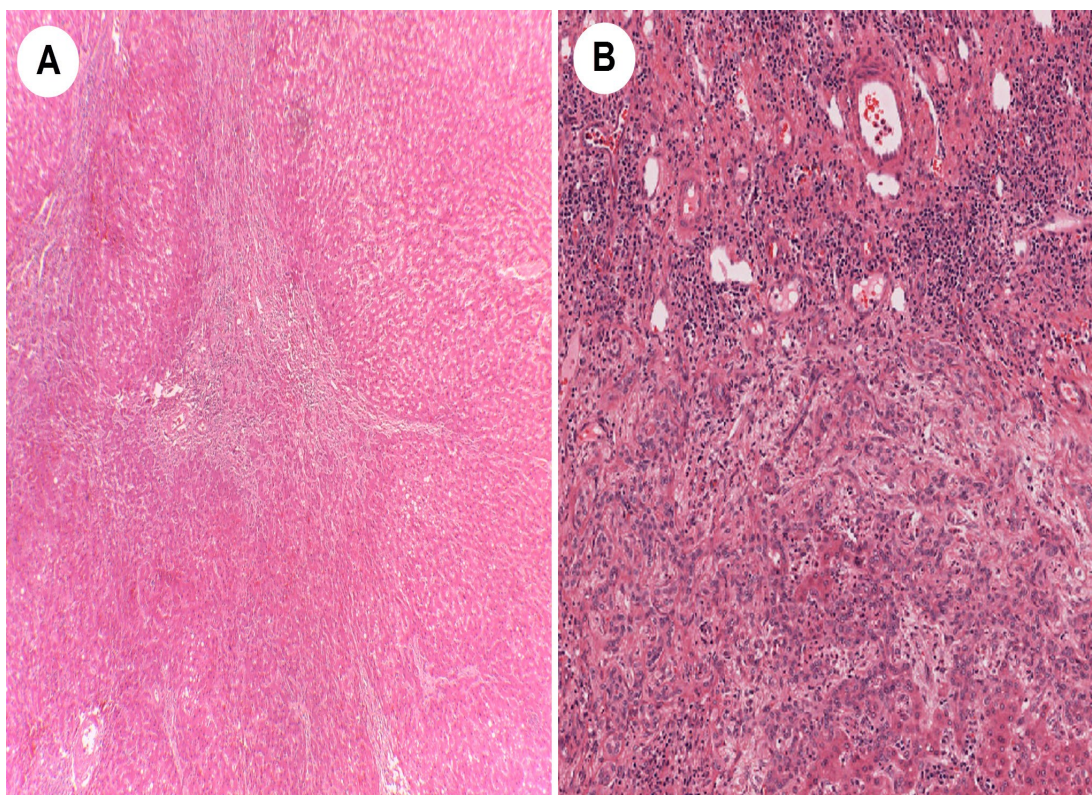
P 19- 24. Xanthogranulomatous pyelonephritis. Crowded histiocytes may be misdiagnosed as clear cell carcinoma, but associated inflammation and negative CK reaction avoid this pitfall.



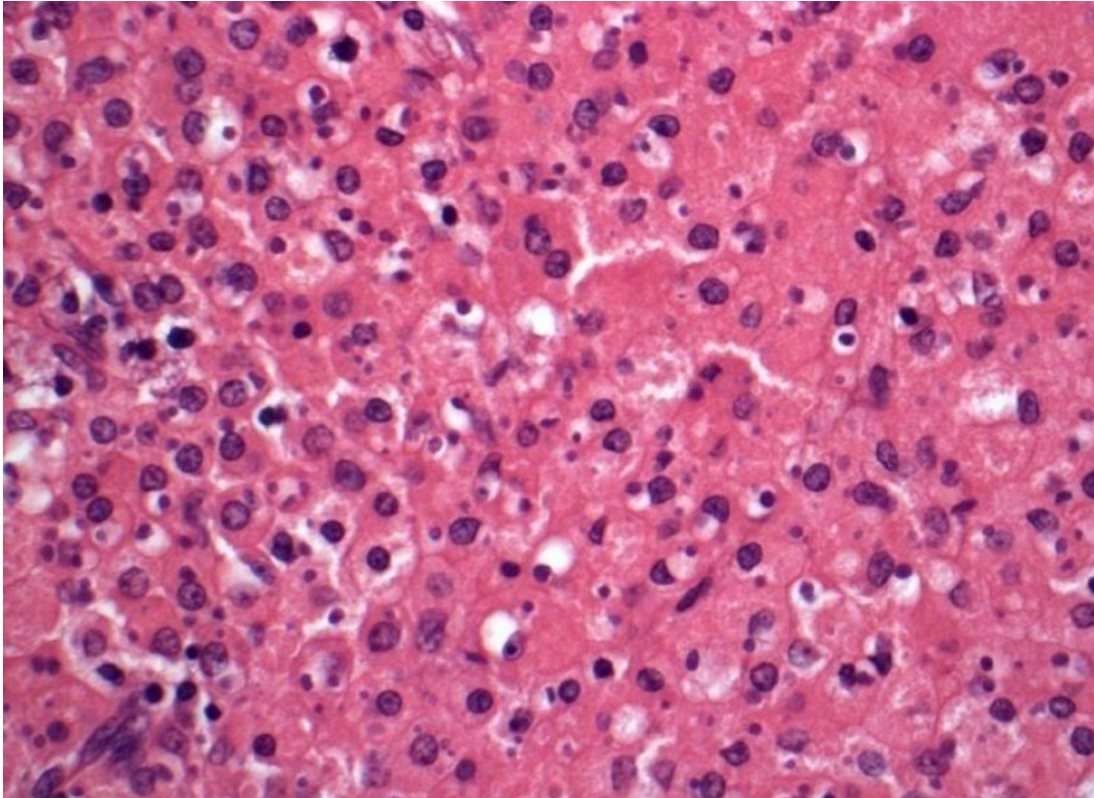
P 19- 25. Lactational mastitis, cytology. Hyperplastic ductal epithelium may be misdiagnosed as malignant, history of lactation and associated inflammation will help to avoid this error.



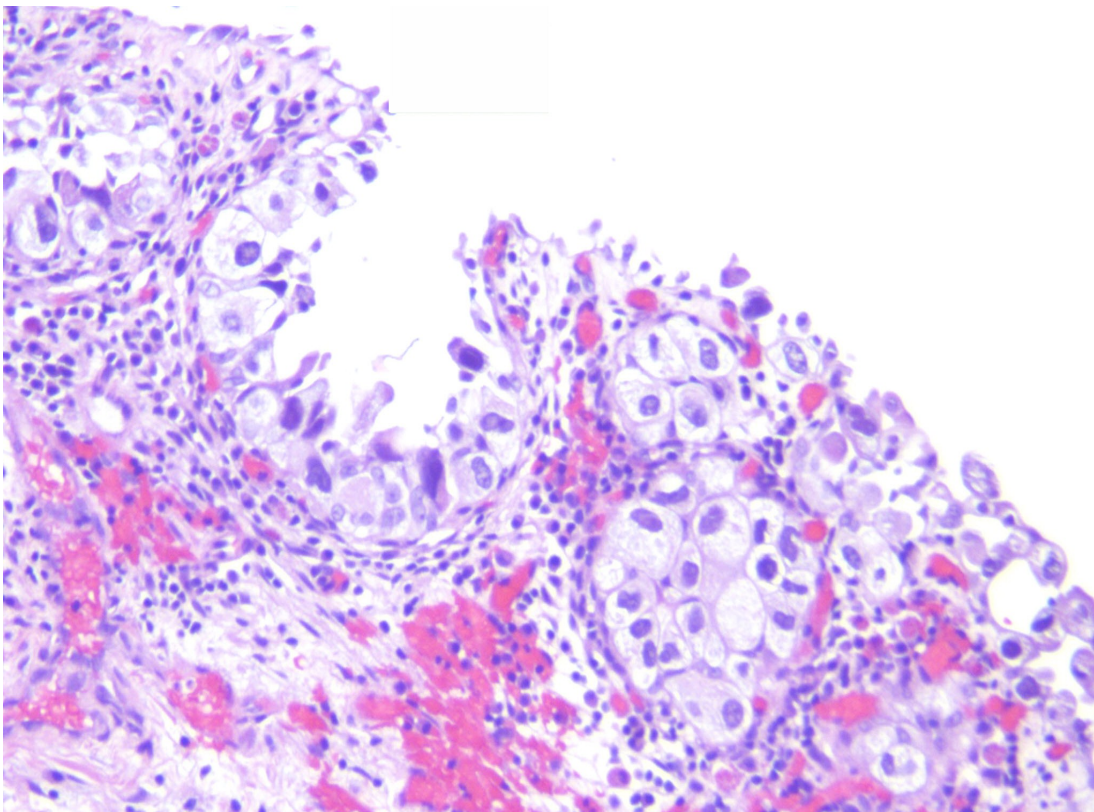
P 19- 26. Breast collagenous spherulosis, may be misdiagnosed as carcinoma, but presence of myoepithelium (p63 +ve) confirms the benign nature of the lesion.



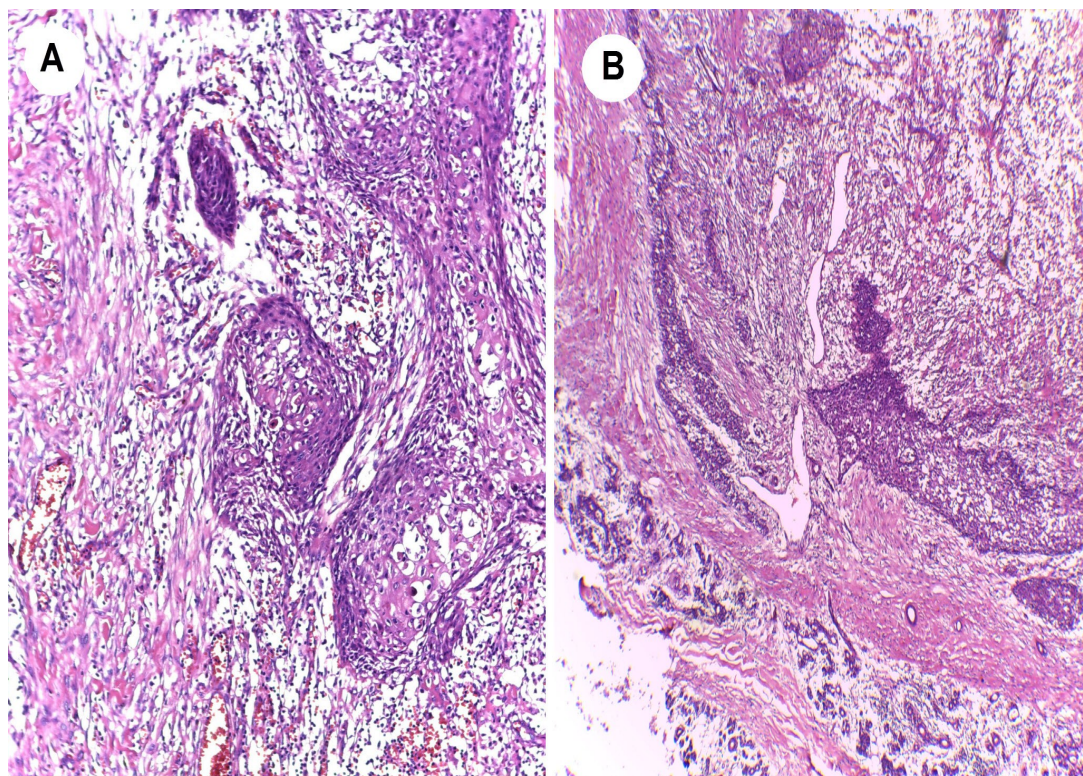
P 19-27. Liver, focal nodular hyperplasia. **A** Preserved lobular pattern with a central stellate scar. **B** Portal tracts are preserved



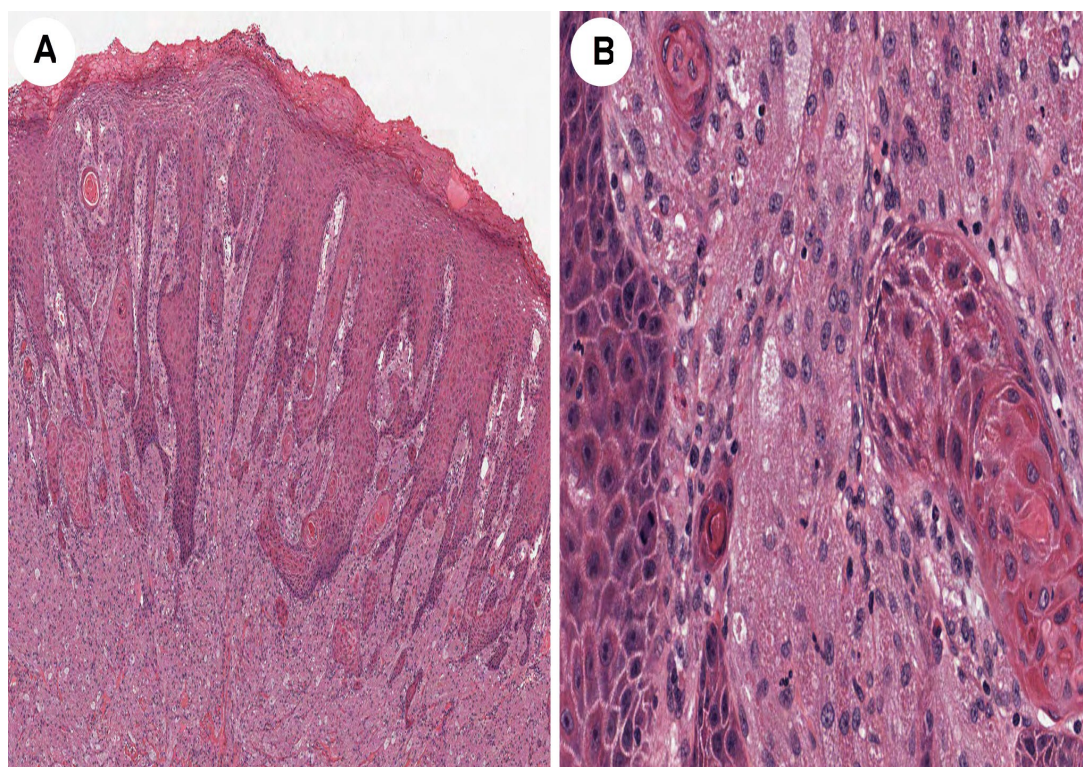
P 19-28. Urinary bladder malakoplakia. Epithelioid histiocytes may be confused with carcinoma but they contain non-digested bacteria and Michaelis-Gutmann bodies and are CD68 +ve.



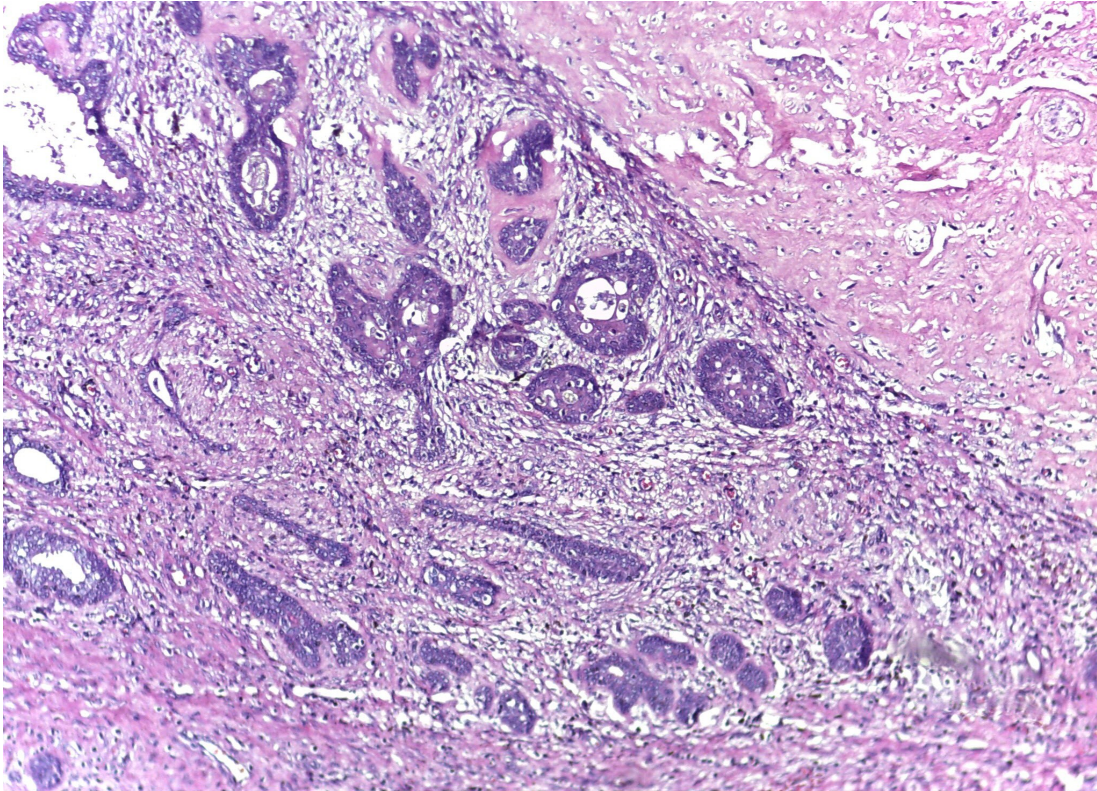
P 19-29. Urothelial dysplasia post cyclophosphamide.



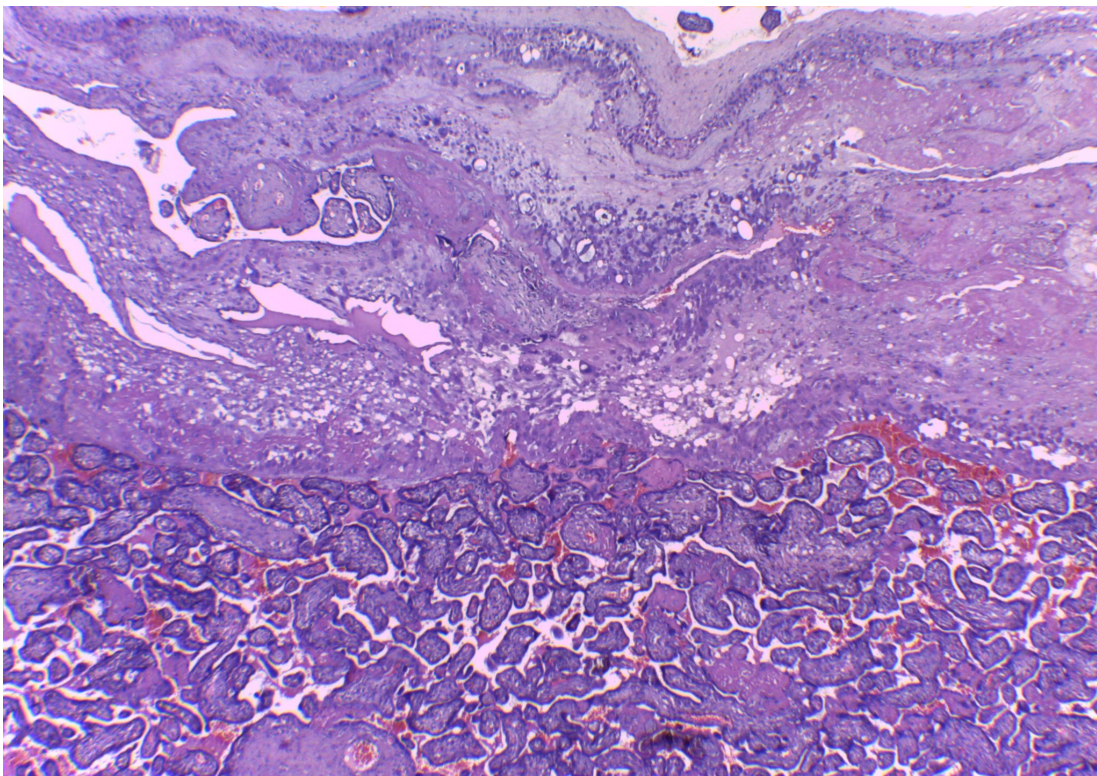
P 19-30. Necrotizing sialometaplasia of minor salivary glands. **A and B,** Squamous metaplasia of ductal epithelium, a reaction to necrosis, may be misdiagnosed as squamous cell carcinoma.



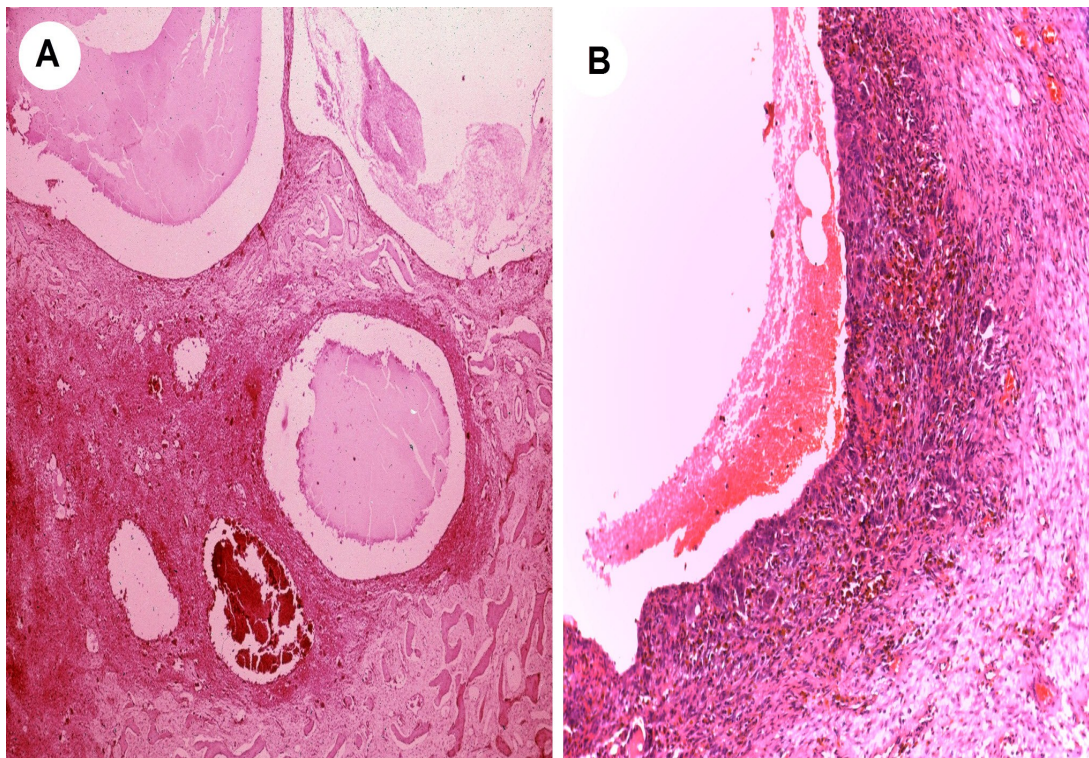
P19-31. Pseudoepitheliomatous hyperplasia overlying granular cell tumor may be misdiagnosed as squamous cell carcinoma. The presence of cross-bridges between epithelium **A** and associated granular cell tumor **B** will help to avoid this pitfall.



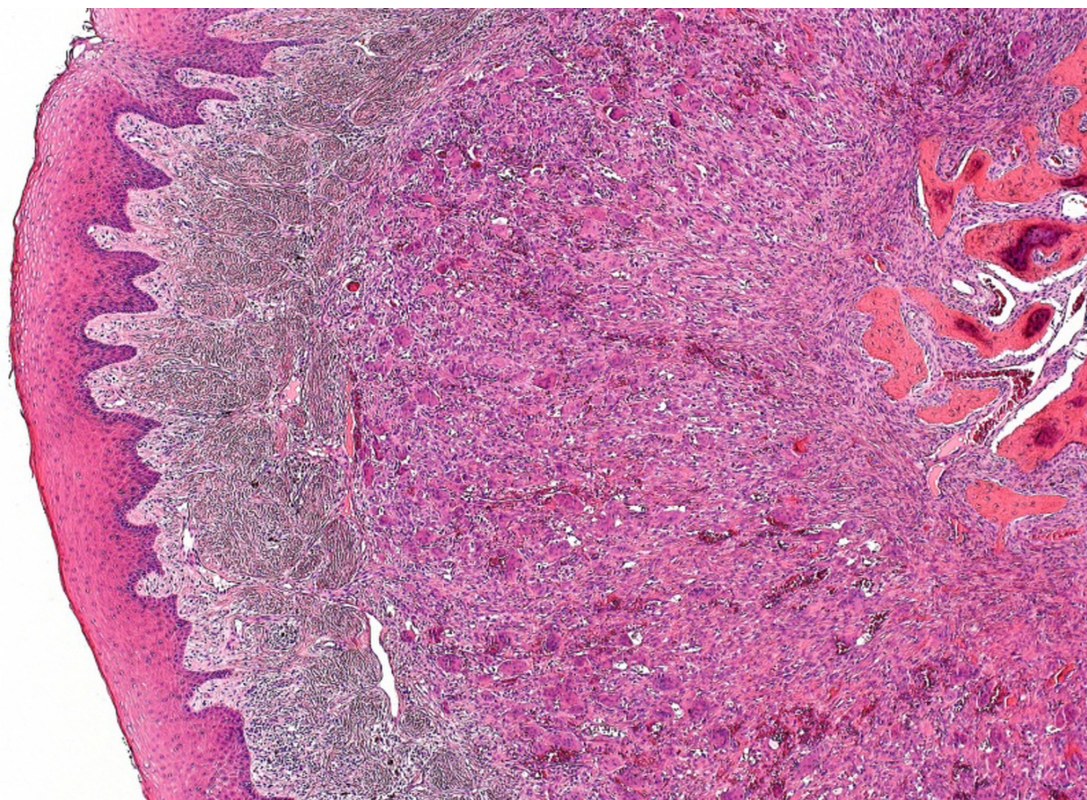
P 19-32. Prostatic infarction, the associated squamous metaplasia of ducts may be misdiagnosed as carcinoma. The presence of infarcts (upper Rt field) is against malignancy.



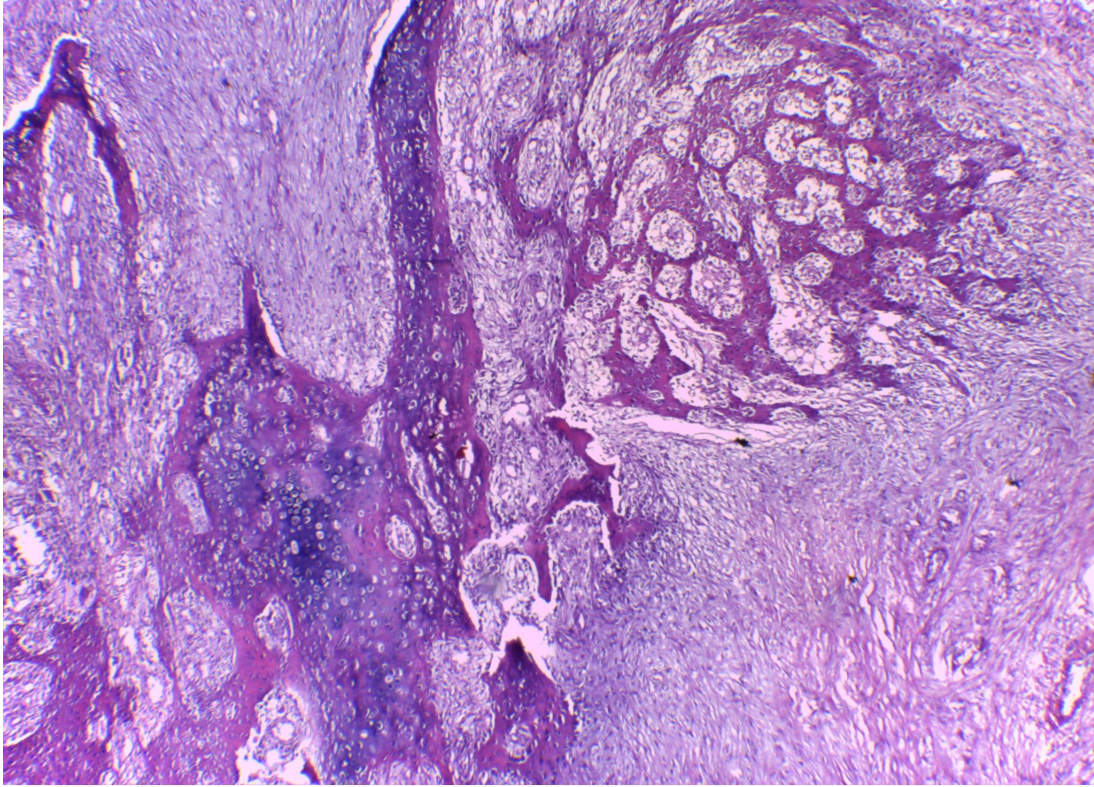
P 19-33. Exaggerated placental site. Intermediate and syncytiotrophoblasts (upper), associated with mature placenta (lower), the lack of cytotrophoblast is against the diagnosis of choriocarcinoma.



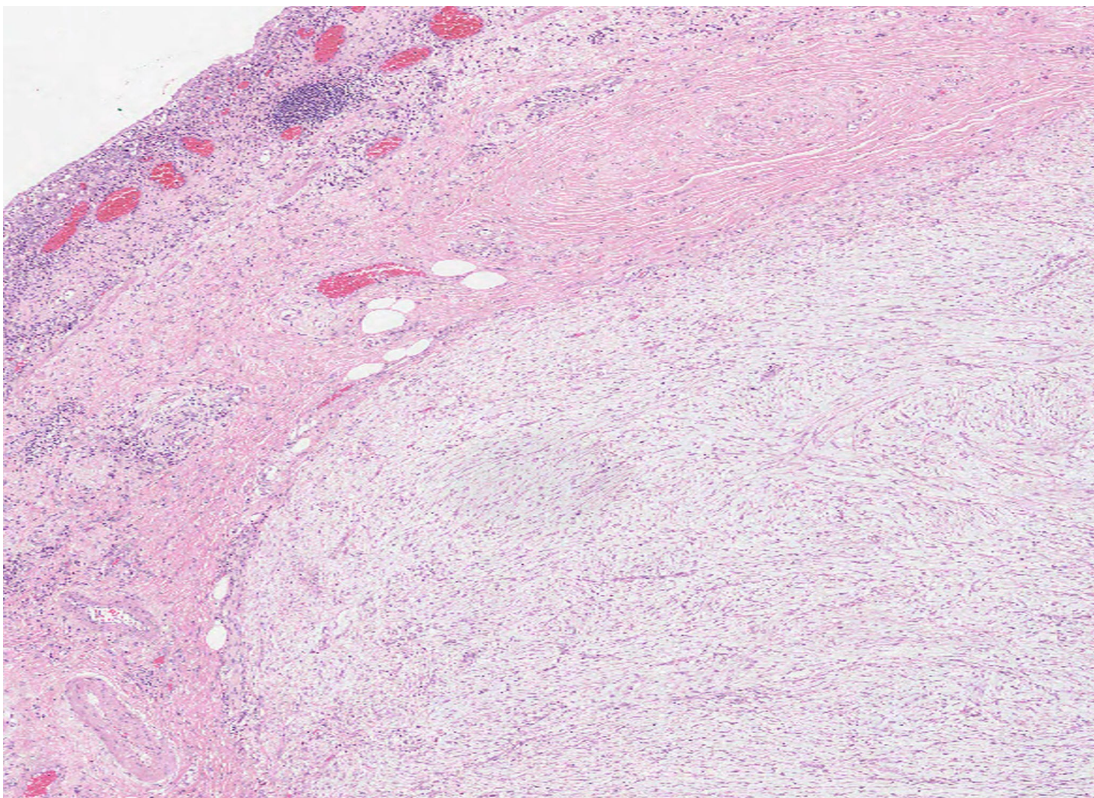
P 19-34. Aneurysmal bone cyst. **A** and **B** vascular spaces lacking endothelial lining with fibrotic wall rich in multinucleated giant cells. The lack of neoplastic osteoid and the bland stromal cells are against the diagnosis of telangiectatic osteosarcoma.



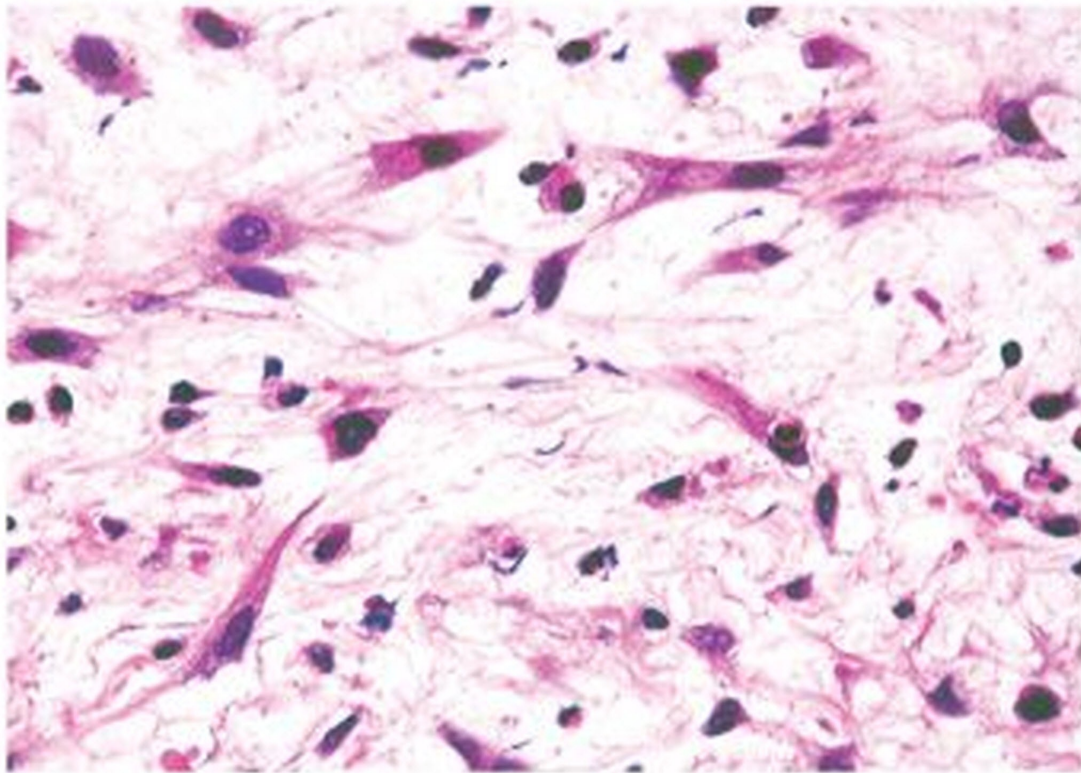
P 19-35. Gingival peripheral giant cell lesion (epulis). The presence of multinucleated giant cells may lead to the diagnosis of giant cell tumor, but this neoplasm does not affect the skull.



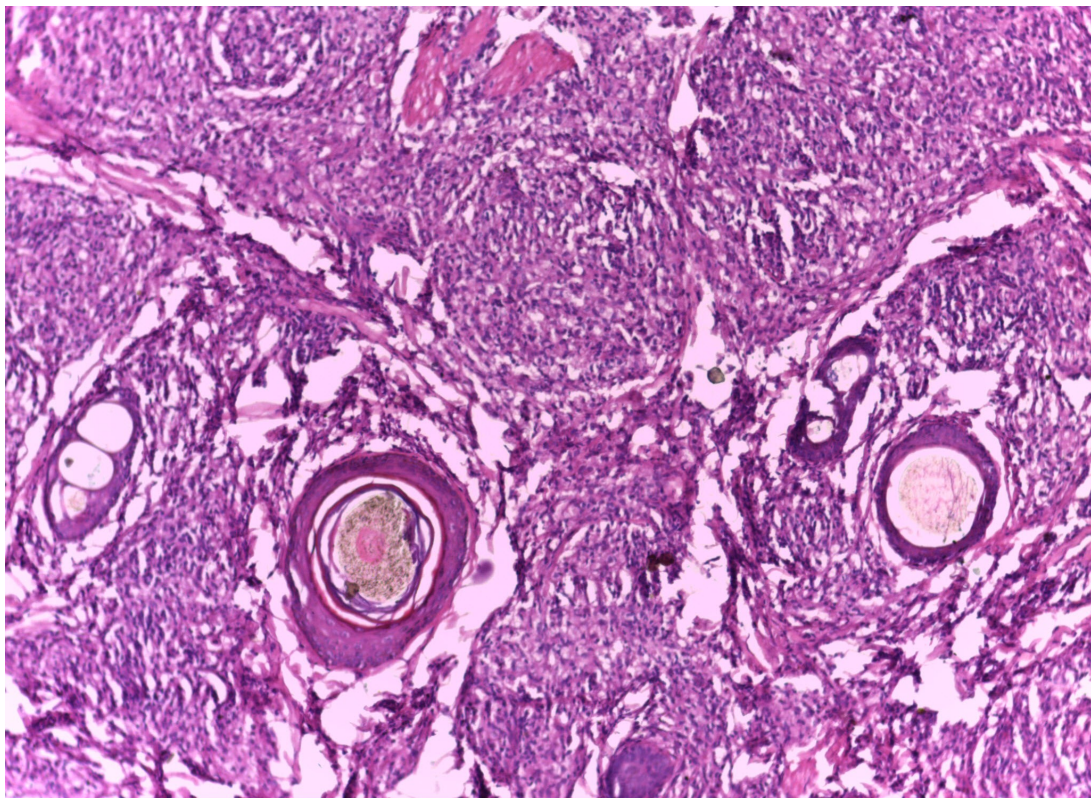
P 19-36. Myositis ossificans. Composed of fibroblastic stroma, bone and cartilage. The presence of osteoblastic rimming of bone trabeculae is against osteosarcoma.



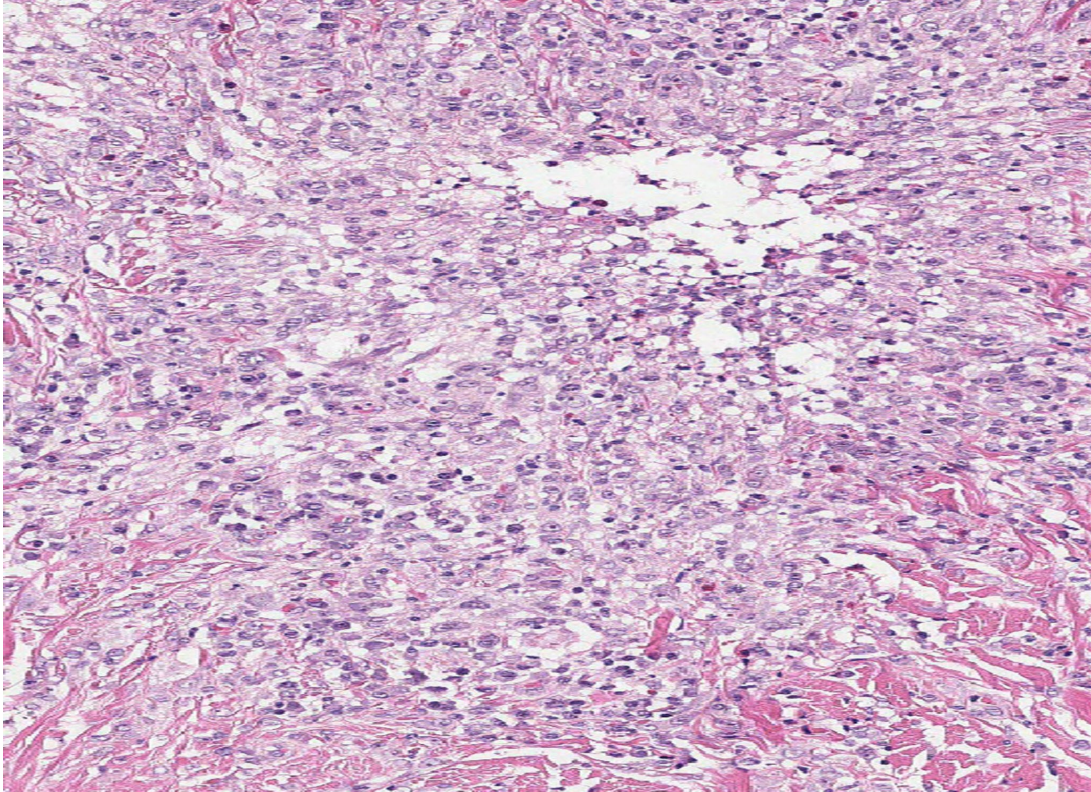
P 19-37. Urinary bladder, post-instrumentation pseudotumor. The fibroblastic proliferation may be mistaken for a sarcoma, however history of the procedure will help to avoid this pitfall.



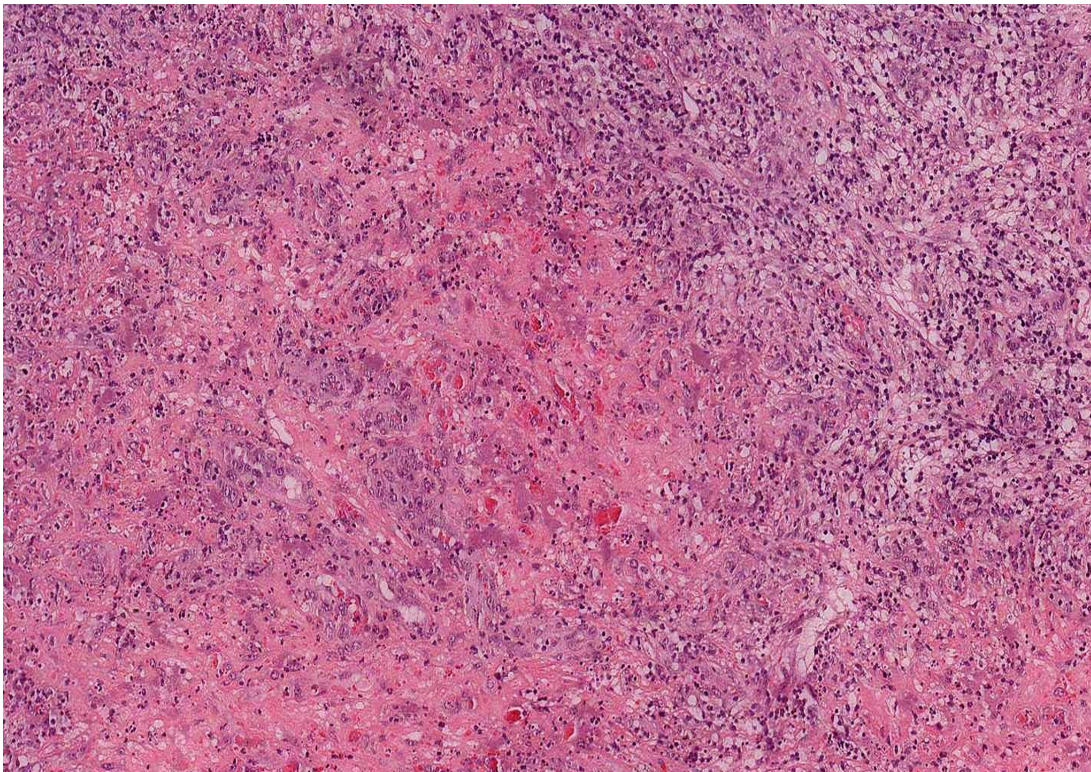
P 19-38 Post irradiation fibroblastic atypia, this should not be confused with fibrosarcoma. This lesion is not associated with mass lesion.



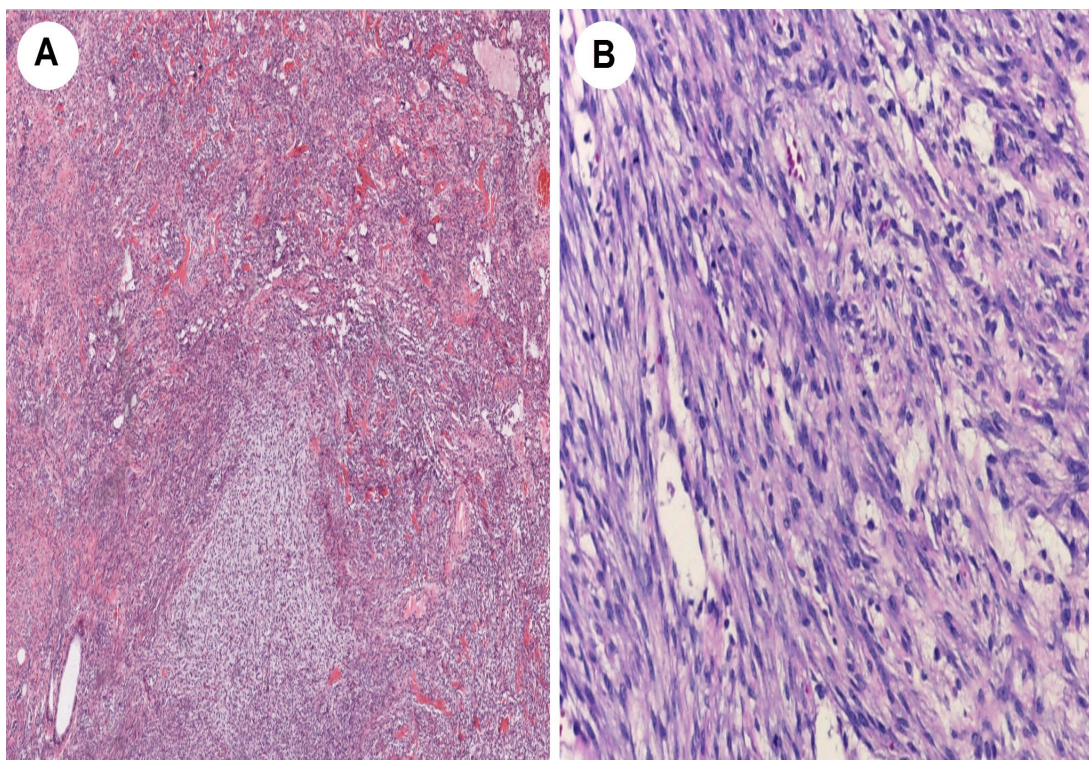
P 19- 39. Leprosy. Macrophages are found in poorly circumscribed masses in the dermis, with few lymphocytes. This lesion may be misdiagnosed as a neural tumor.



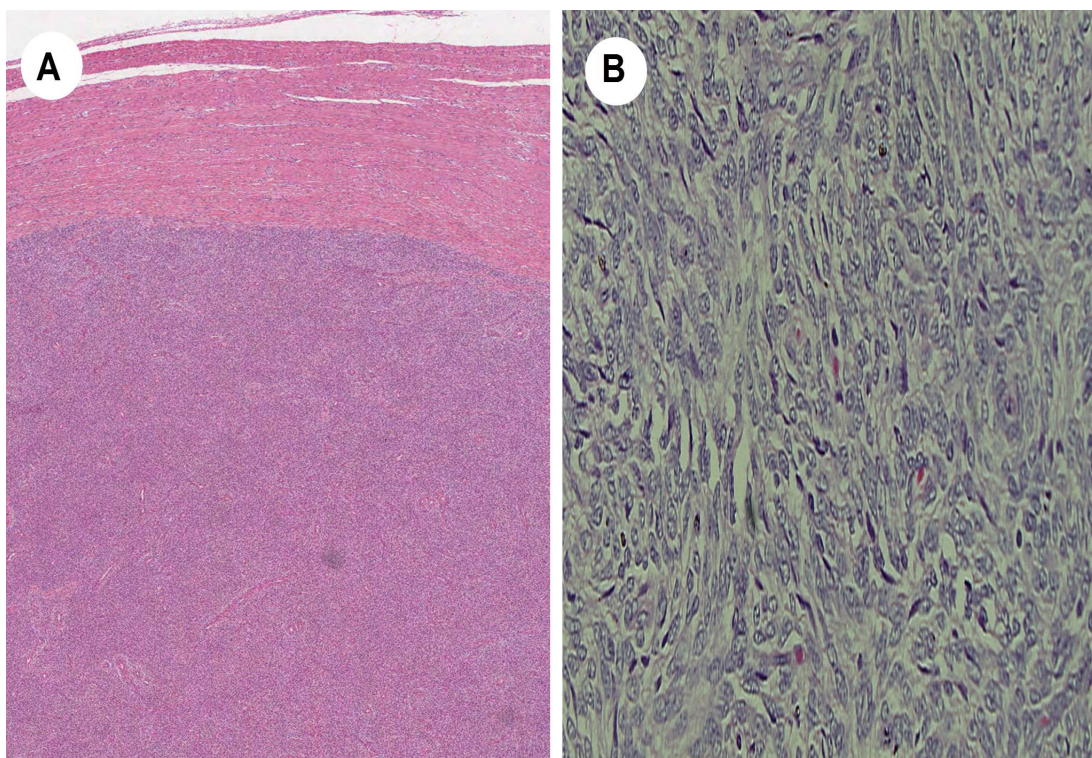
P 19-40 Lymph node, atypical *Corynebacteria*. This should not be misdiagnosed as Kaposi sarcoma or denteritic neoplasm. Special stain will reveal the acid fast bacilli.



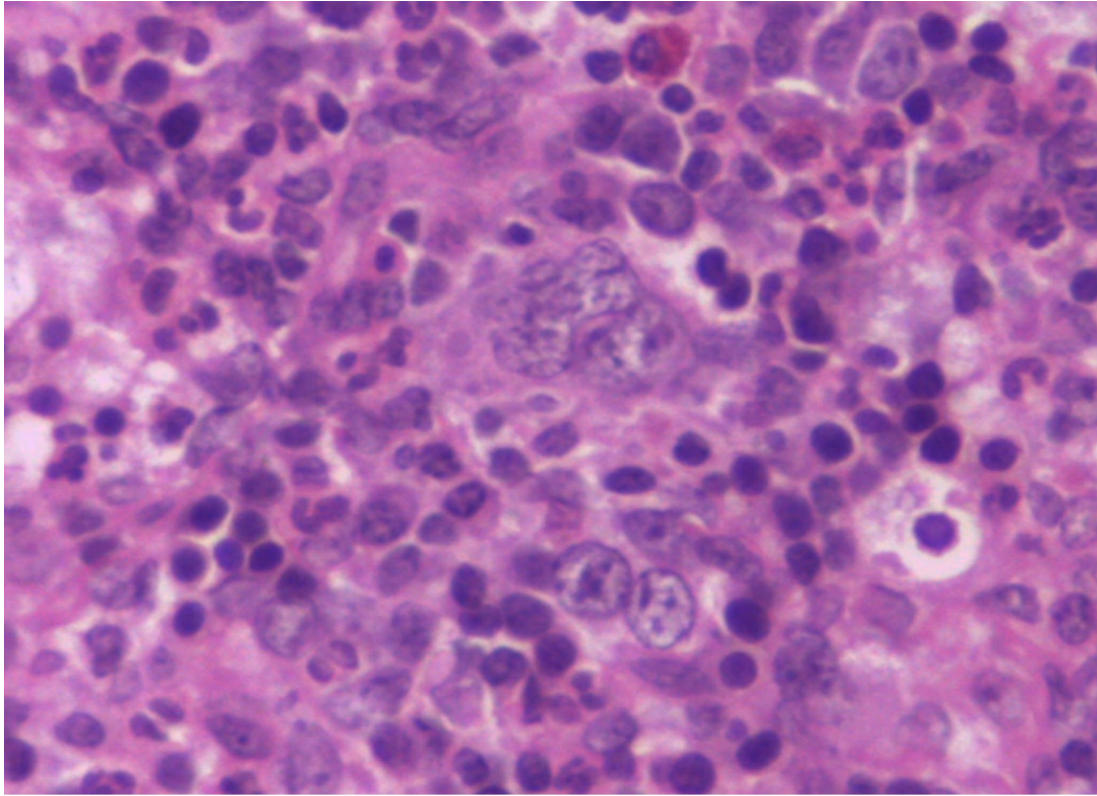
P 19-41. Bacillary angiomatosis. Proliferation of capillaries in sinuses may be mistaken for endothelioma but associated inflammatory reaction and demonstration of bacilli are helpful in the differentiation.



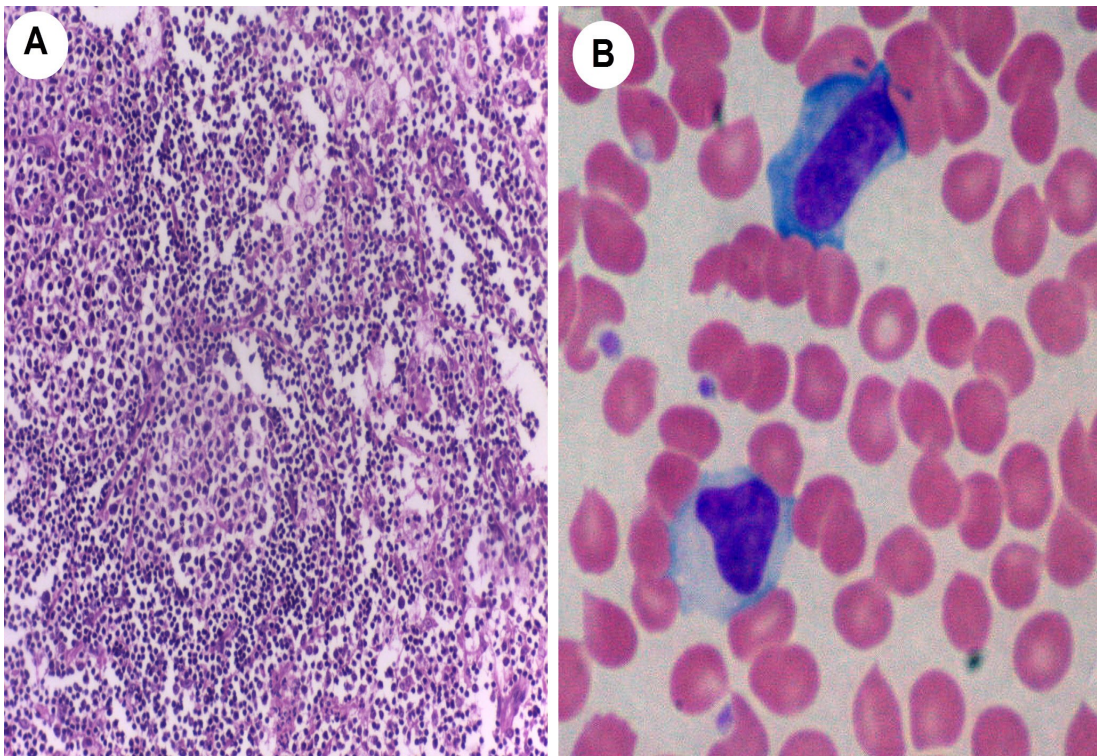
P 19-42. Soft tissue of arm, nodular fasciitis **A** Hypocellular and hypercellular areas composed of spindle to stellate cells without atypia. **B** Tissue-culture like growth pattern and focal myxoid change.



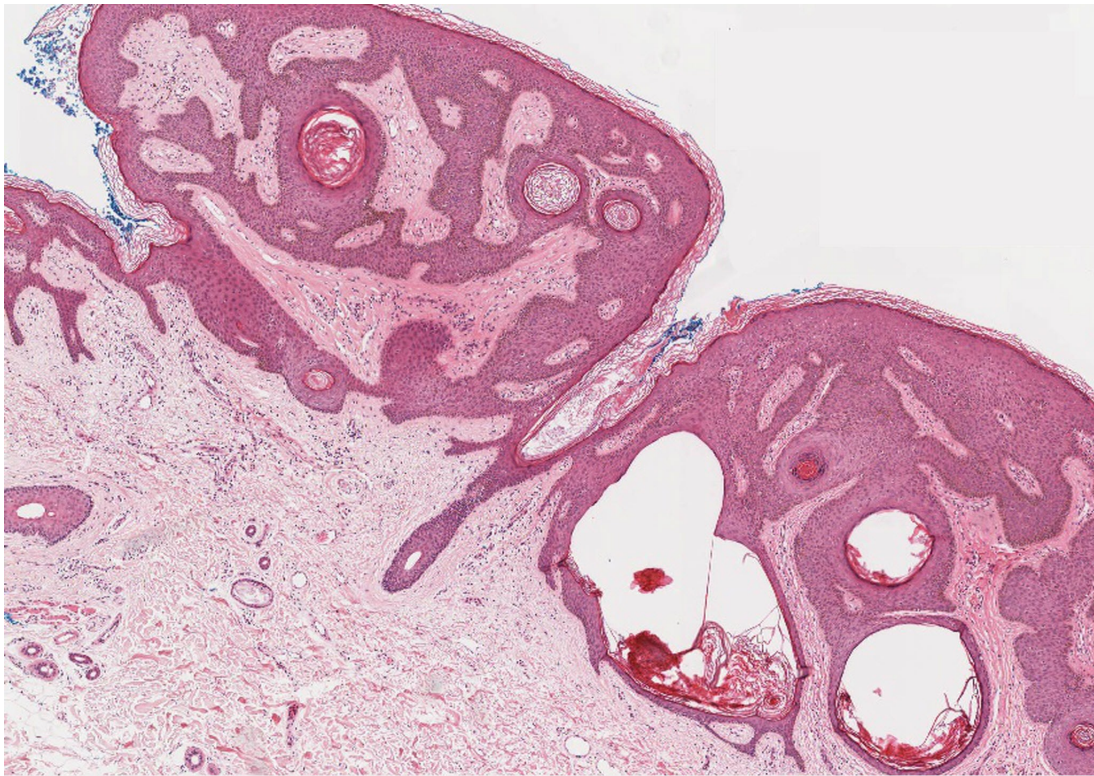
P 19-43. Uterine corpus endometrial stromal nodule. **A** Scanning power showing well defined encapsulated growth. **B** High power showing bland-looking spindle cells. The endometrial stromal origin of the tumor is confirmed by positivity for CD10.



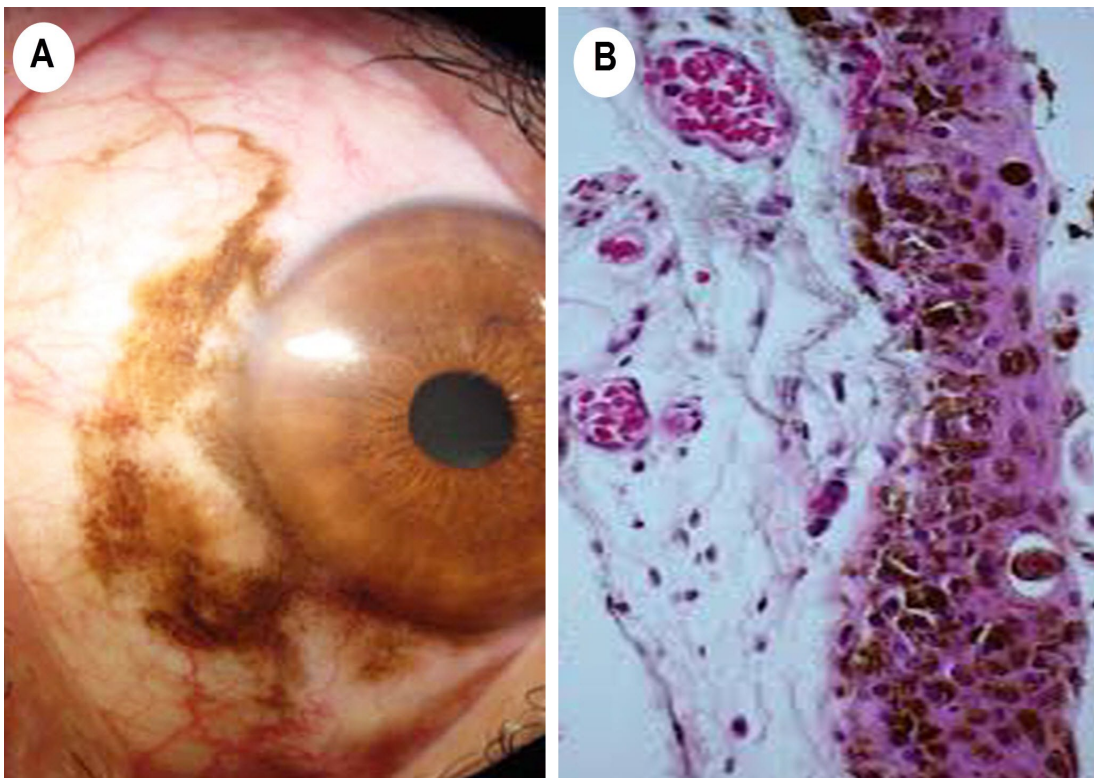
P 19-44. Lymph node, myeloid metaplasia. The megakaryocytes may be mistaken for Hodgkin Reed-Sternberg cells, but positivity for MPO and CD117 confirm the myeloid nature.



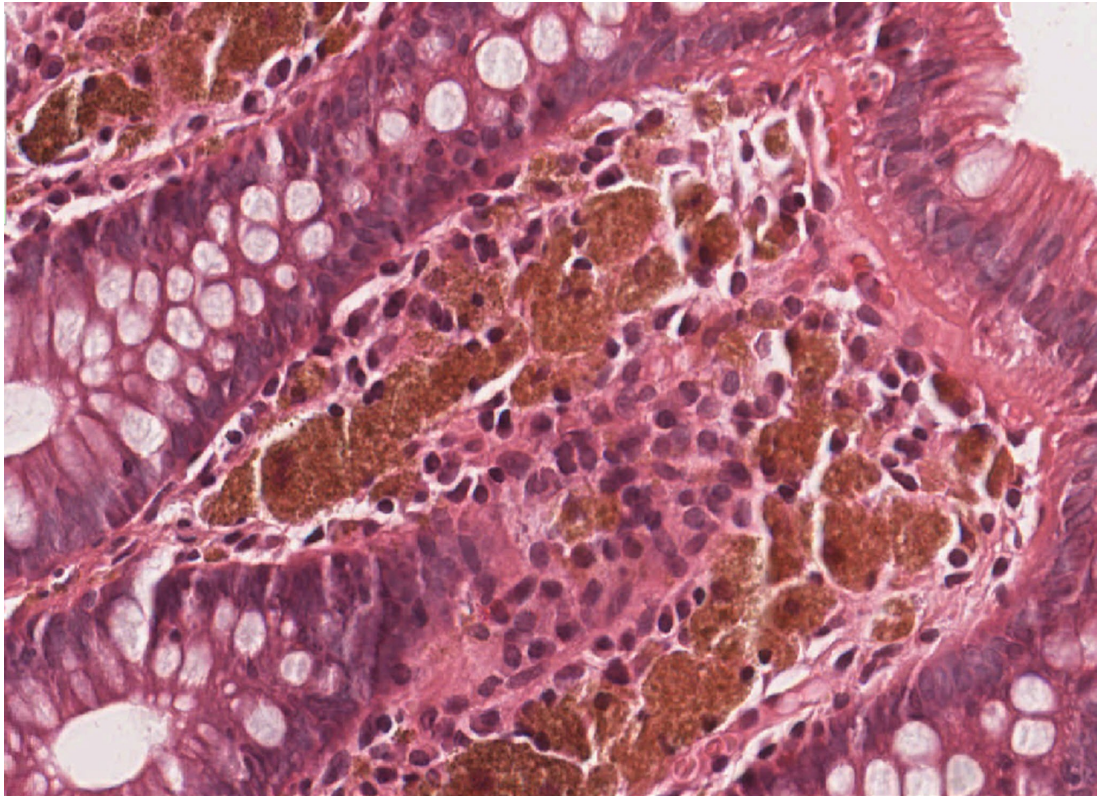
P 19-45. Infectious mononucleosis. **A** Lymph node with paracortical expansion rich in immunoblasts (Reed-Sternberg like). **B** Peripheral blood smear, large immunoblastic lymphocytes. EBV infection is confirmed by PCR.



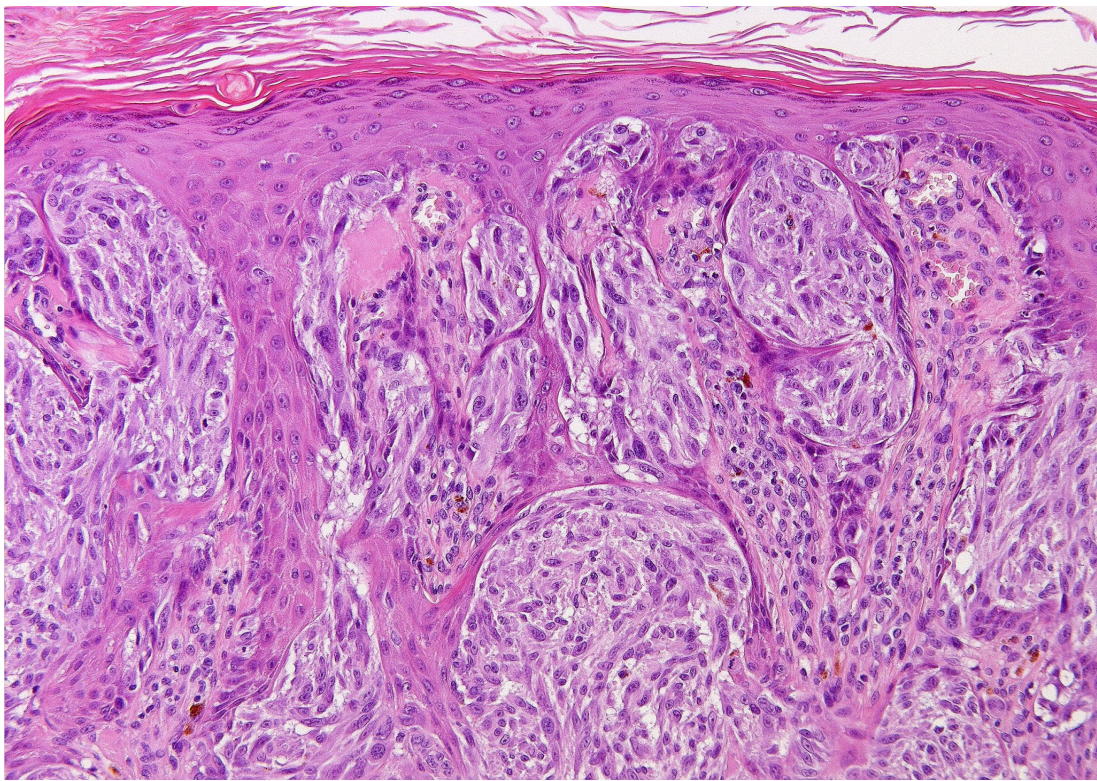
P 19-46. Seborrheic Keratosis. Epidermal hyperplasia with keratotic nests, may be mistaken for a squamous neoplasm, however this lesion is superficial and composed of uniform bland basaloid cells.



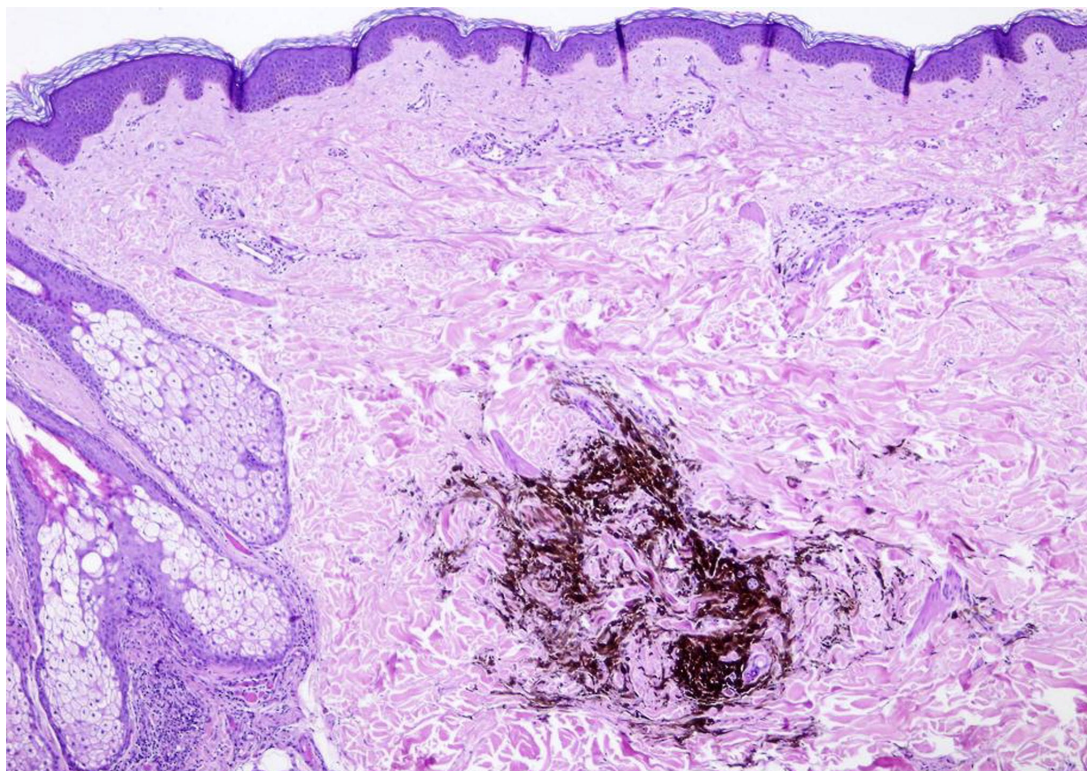
P 19-47. Conjunctival melanosis. **A** Gross brown discoloration of the bulbar conjunctiva. **B** showing melanin pigment in conjunctival epithelium but no proliferation of melanocytes.



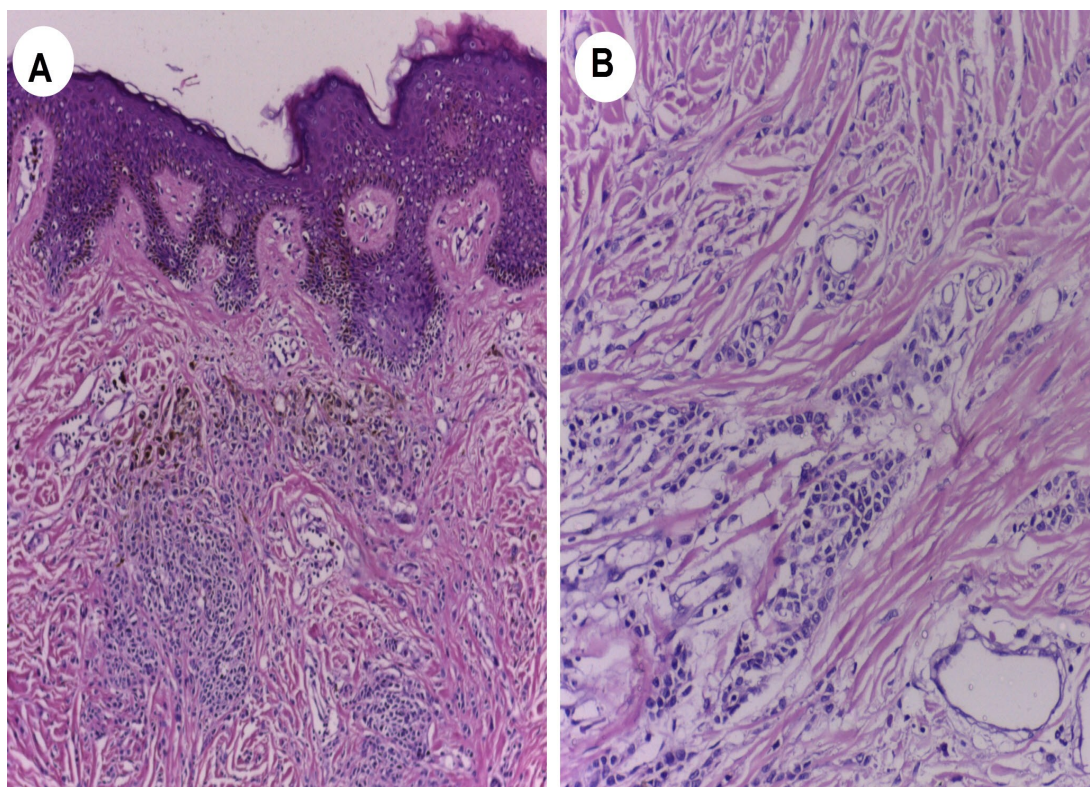
P 19-48. Melanosis coli. Diffuse deposition of melanin-like pigment (lipofusin) in macrophages of lamina propria. This may be misdiagnosed as melanoma, but (S100 negative).



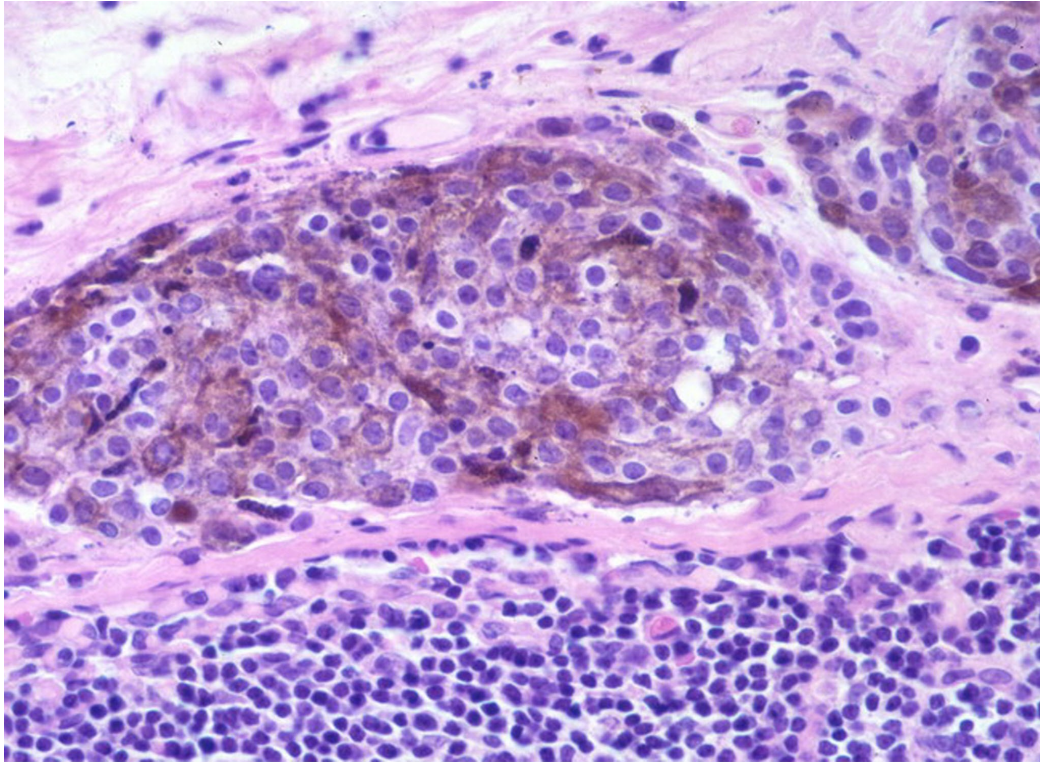
P 19-49. Spindle cell nevus of Spitz. Nests of spindled and giant melanocytes at dermo-epidermal junction may be misdiagnosed as melanoma. Pediatric age of the patient is against the diagnosis of melanoma.



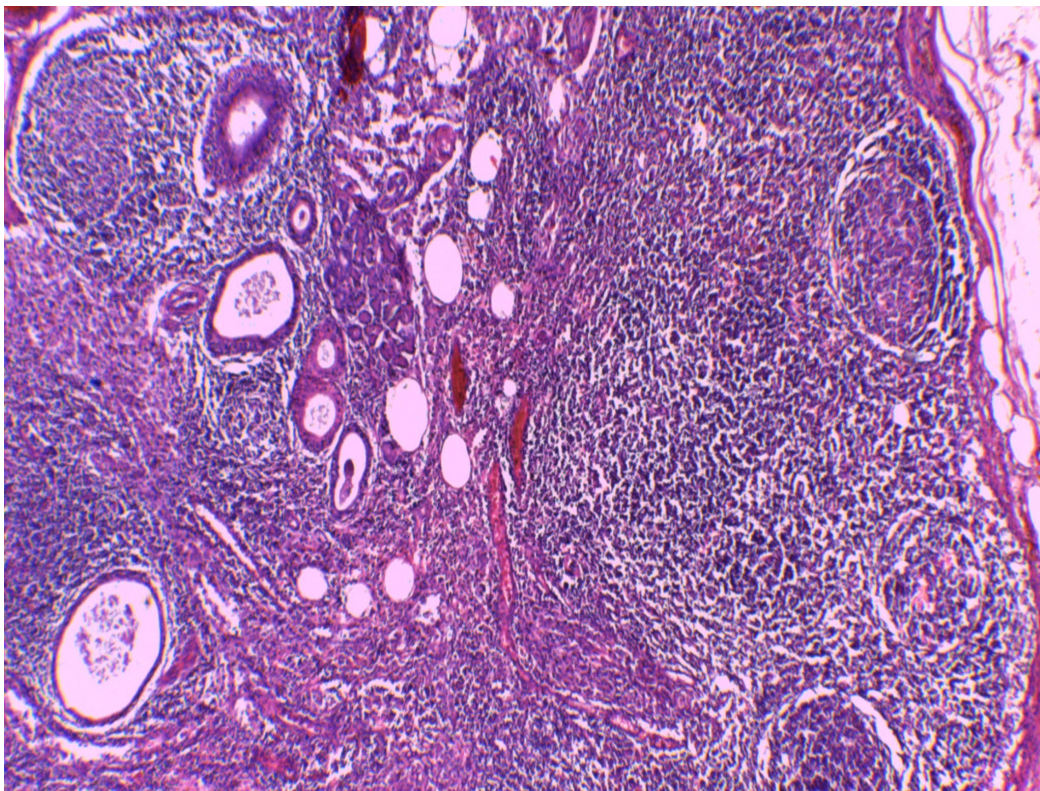
P 19-50. Cellular blue nevus. Collection of heavily pigmented spindle cells in the deep dermis. This may be misdiagnosed as melanoma. Depigmentation of tumor cells by potassium permanganate should be done before any immunophenotyping.



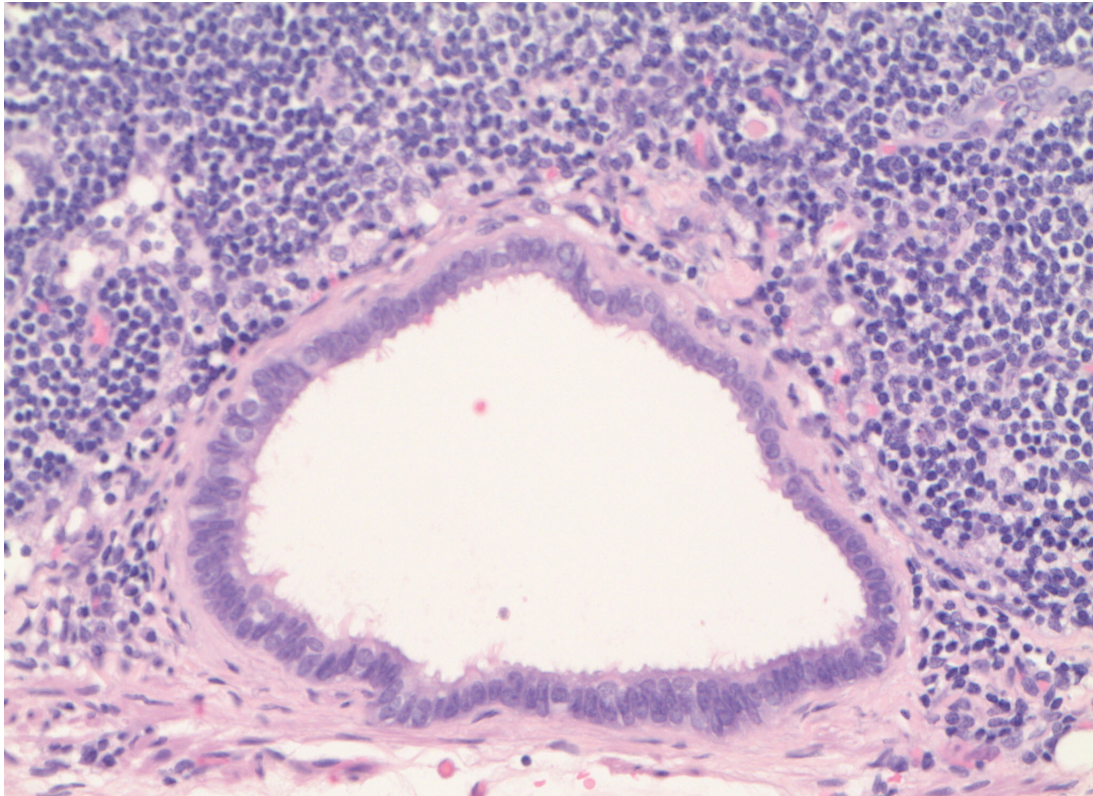
P 19- 51. Deep penetrating nevus. **A** Pigmented nevus cells in the upper dermis. **B** Higher power show extension into reticular dermis and absent maturation.



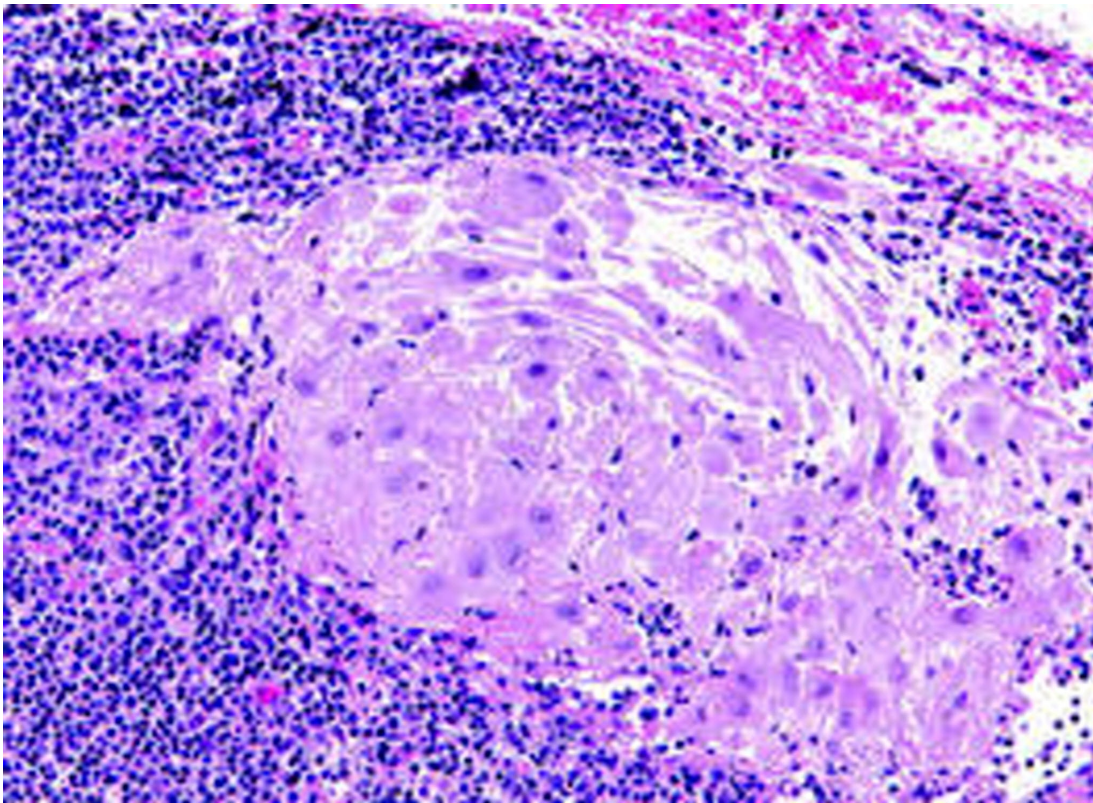
P 19-52. Ectopic pigmented nevus cells in the capsule of lymph node . The nuclei lack mitosis and no primary melanoma was found elsewhere. This developmental disorder may be mistaken for metastatic melanoma.



P 19-53. Upper cervical lymph node, salivary duct inclusions. The well differentiated and cystic epithelium should no be mistaken for metastases.



P 19-54. Pelvic lymph node mullerian duct inclusion. Subcapsular cystic inclusion lined by bland-looking mullerian type epithelium. This may be confused as metastatic carcinoma.



P 19-55. Ectopic decidual tissue in a lymph node. Positivity for CD56 and negativity for CK will confirm the decidual nature of the cells.