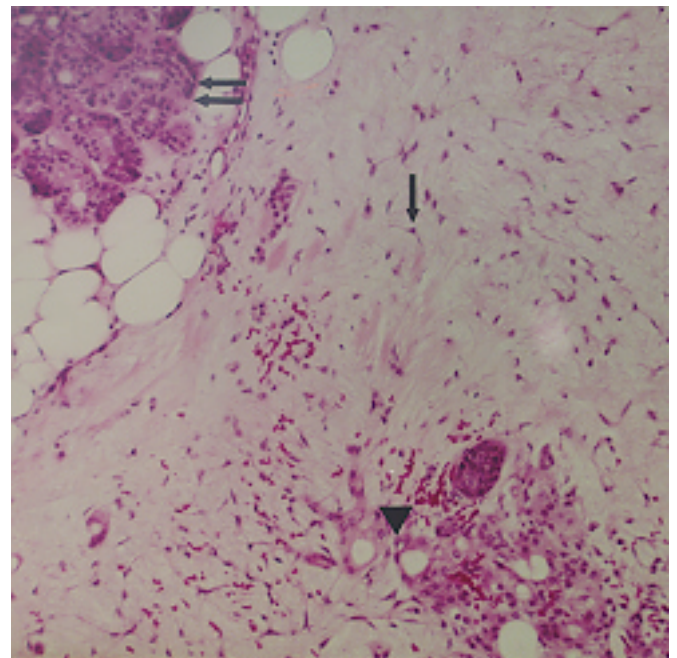


## PLEOMORPHIC ADENOMA ("BENIGN MIXED TUMOR")

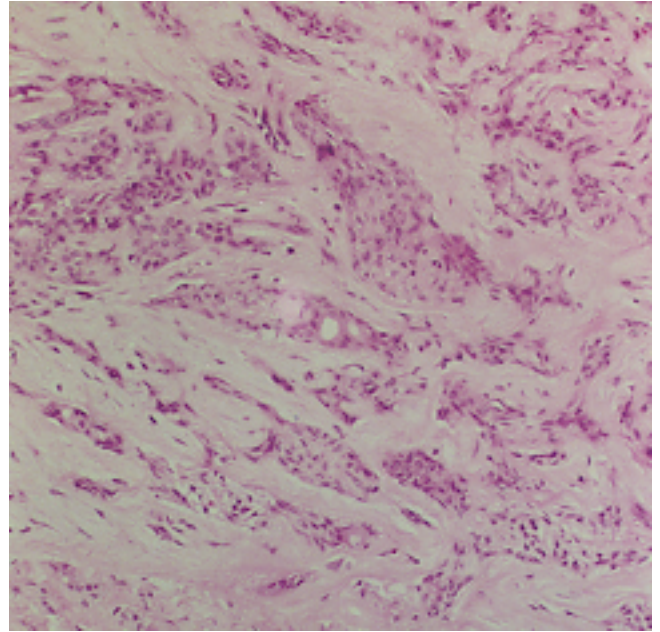
Grossly, the tumor is freely movable, solid, sometimes lobulated and occasionally cystic. If recurrent, multinodular masses are common.

Histologically, within a fibrous capsule, the pleomorphic adenoma is composed of an extremely variable mixture of epithelial and myoepithelial elements. Sheets of cells, papillary projections, cords, and individual cells are seen, often in the same tumor. Myxoid and chondroid areas are characteristic with bluish and pinkish sections intermingling. Individual cells with stellate appearance lying in a myxoid matrix and acinic structures are common. Mitoses and necrotic areas generally are not seen.

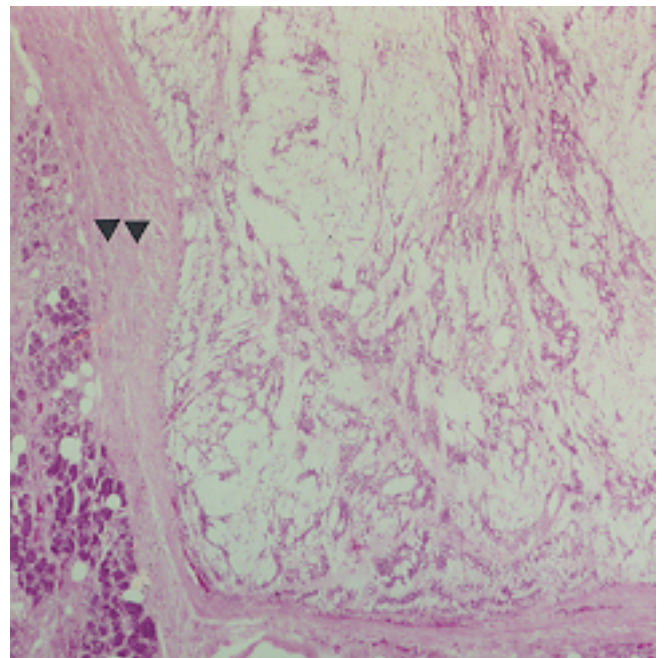
Pleomorphic adenoma, parotid; stellate cells in loose myxoid stroma (single arrow) with some acinar formation (triangle). Fat and normal parotid also seen (double arrows).

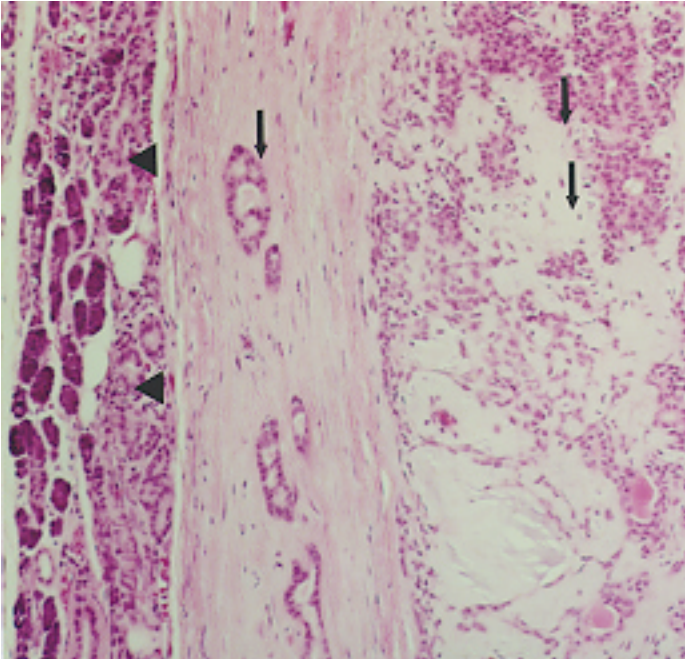


Pleomorphic adenoma, parotid; cords and islands of cells with basophilic nuclei. Cytoplasmic boundaries are not well seen.

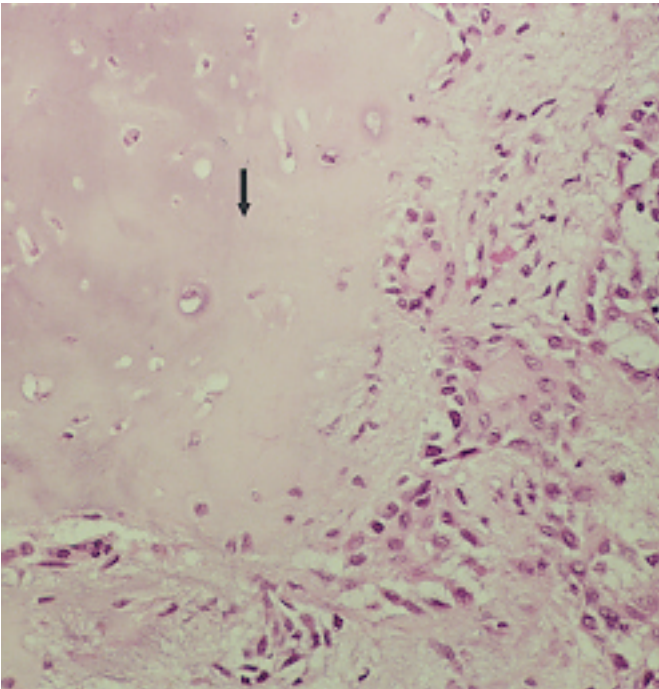


Pleomorphic adenoma, parotid; definite capsule (triangles) surrounds this pleomorphic adenoma and separates it from normal parotid. This section of the tumor has a loose edematous appearance with cords and nests of cells interspersed.





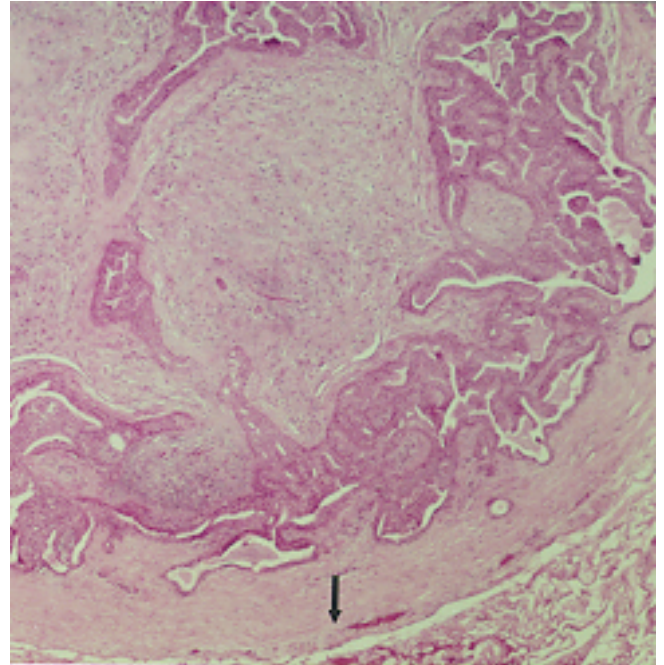
Pleomorphic adenoma, parotid; well-formed capsule separates tumor (double arrows) from parotid (triangles). Note invasion of capsule by tumor elements (single arrow).



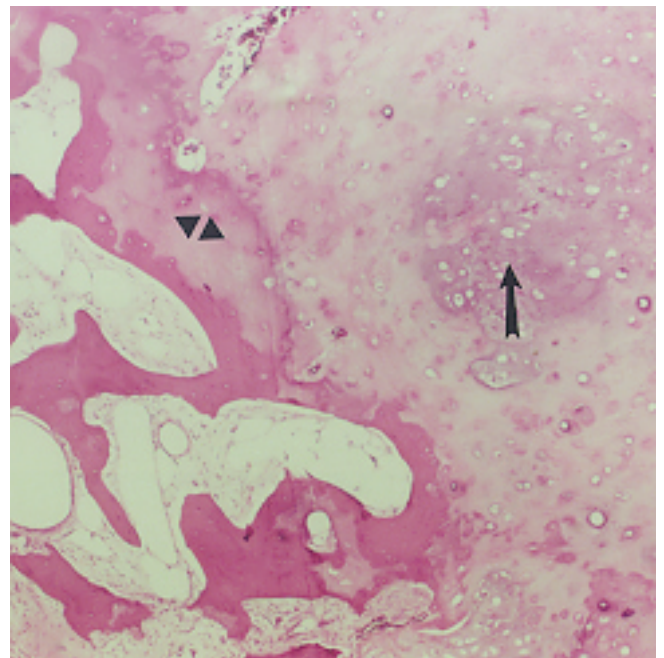
Pleomorphic adenoma, parotid; chondroid stroma (arrow) is common. The adjacent tissue is tumor arranged as single cells and small nests of cells.

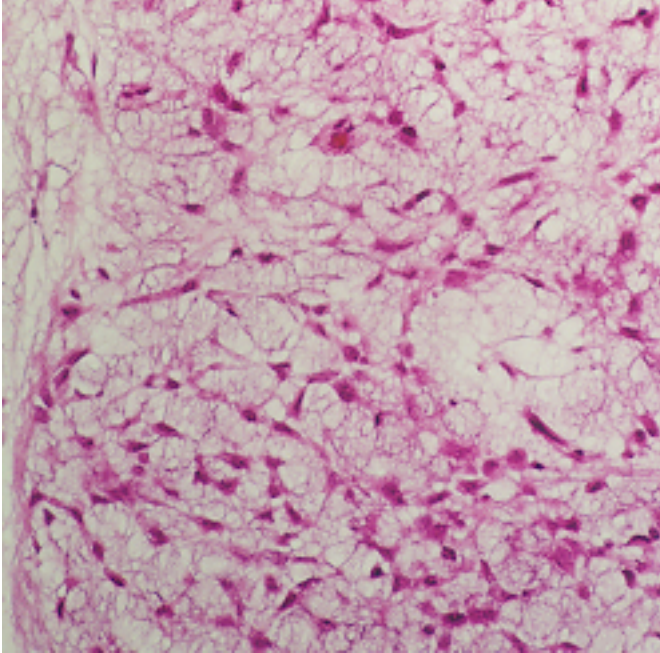


Pleomorphic adenoma, nose; tumor with papillary formations and capsule (arrow).

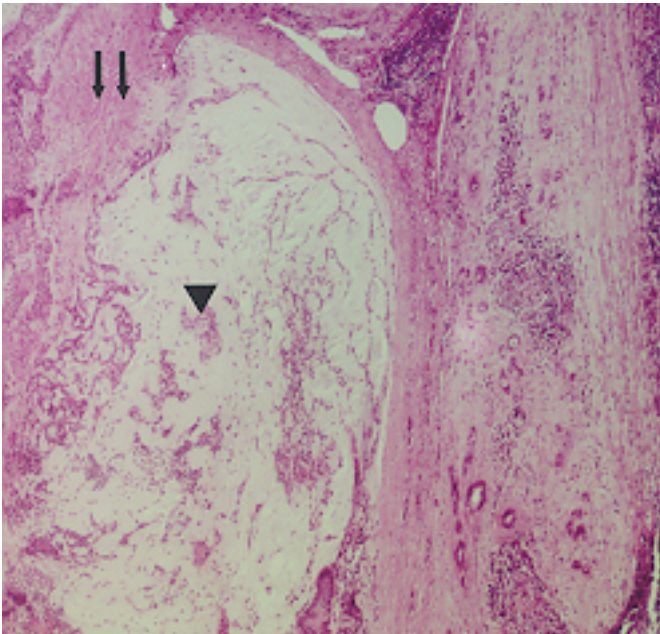


Pleomorphic adenoma, parotid; osseous metaplasia (triangles). Tumor had a large chondroid element (arrow).



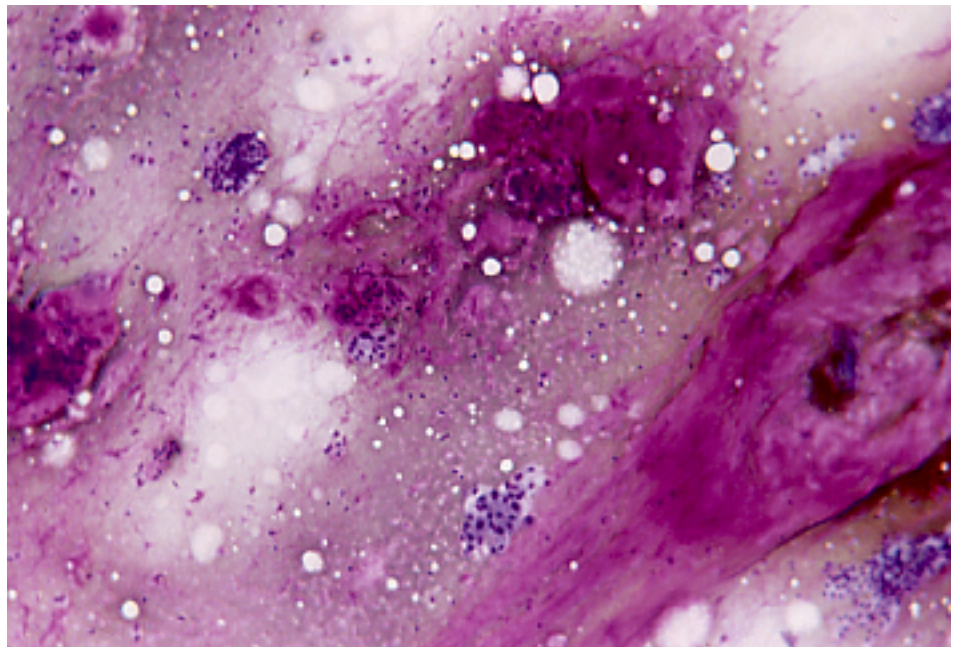
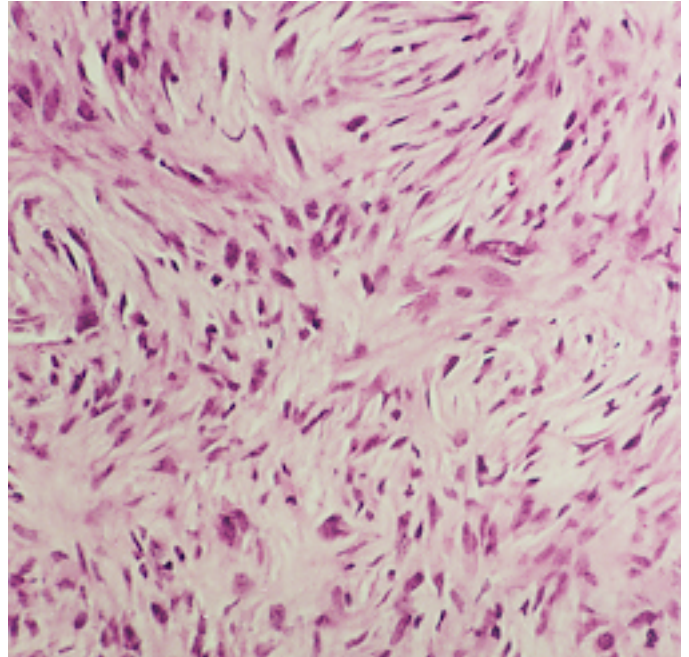


Pleomorphic adenoma, parotid; stellate cells are commonly found in multiple areas of many tumors.



Pleomorphic adenoma, palate, mixture of solid areas (arrows) and strands and nests of cells (triangle) in an area with edematous stroma.

Pleomorphic tumor, malignant (carcinoma ex pleomorphic adenoma), maxilla, high grade spindle cell tumor that was multinodular, with pleomorphic hyperchromatic nuclei. There are abnormal mitoses.



Pleomorphic Adenoma (Benign Mixed Tumor). FNAB of parotid. This low power image shows abundant metachromatic staining stroma mixed with small clusters of epithelial cells. This stroma represents the chondromyxoid matrix that is seen in tissue sections of this tumor. In some aspirates it can be so thick that it obscures the cellular component of the smear. Diff-Quik stain.

## CLINICAL ASPECTS

Pleomorphic adenomas are the commonest tumors of the salivary glands. They are benign except for a rare "carcinoma ex pleomorphic adenoma" but are not always completely encapsulated and show a definite tendency to recur after excision, in which case recurrence represents local growth because of incomplete excision and not malignancy. While the most common site is the parotid, the pleomorphic adenoma is seen in all major and minor salivary glands. Often small when first discovered, tumors may become as large as an orange. While surgical excision should cure the patient, recurrence is not uncommon particularly if an en bloc removal is not done, and this may be difficult because of the close association with the facial nerve. Preoperative facial paralysis due to stretching of the nerve is rare and preoperative facial paralysis should make one suspect malignancy.

In the case of carcinoma ex pleomorphic adenoma, there should be some remaining pleomorphic adenoma present to substantiate the diagnosis. Many types of carcinoma are seen with adenocarcinoma being the most common. Treatment is by radical excision, often followed by irradiation therapy. In general, prognosis is poor.