

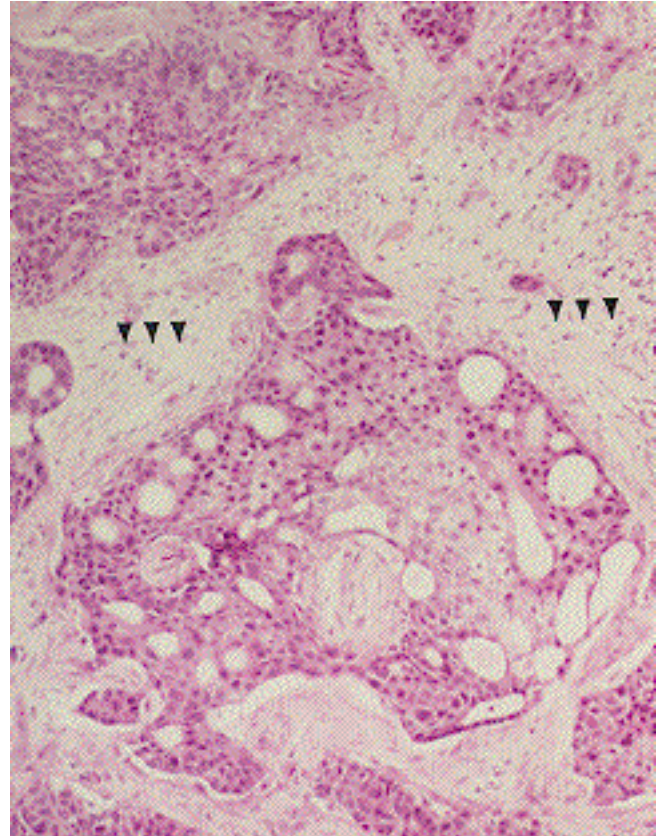
## MUCOEPIDERMOID CARCINOMA

Mucoepidermoid carcinoma is the most common malignant salivary gland neoplasm in both adults and children. It affects chiefly the parotid, but also other major and minor salivary glands. These tumors grow slowly and present as painless masses in most cases. They are unencapsulated or poorly encapsulated and infiltrate surrounding tissue freely.

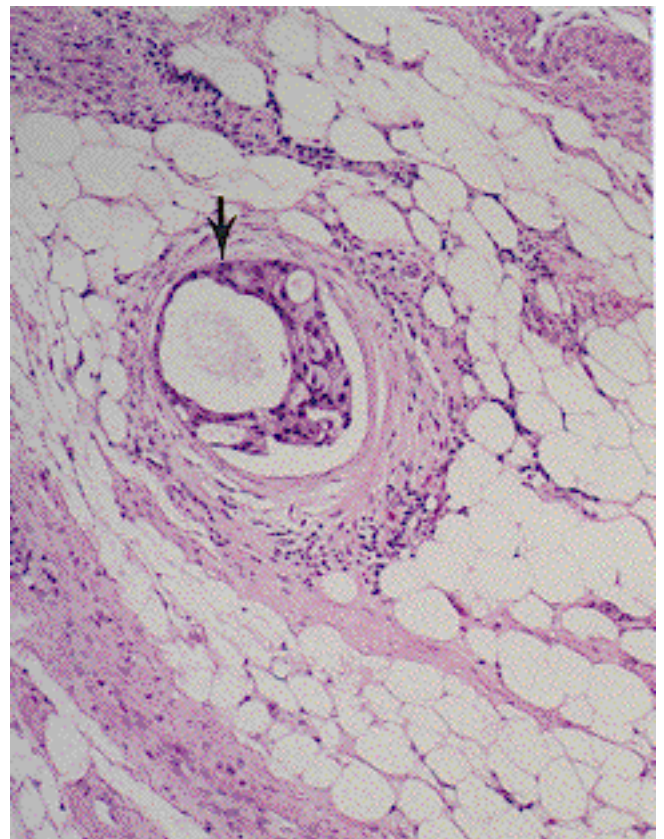
Microscopically, there are mucoid cells and epidermoid squamous cells. The mucoid cells are large with distinct borders and have a foamy cytoplasm that stains positively with special mucin stains. The epidermoid squamous cells may show large nuclei with prominent nucleoli and an eosinophilic cytoplasm. The squamous cells are arranged in nests or solid areas in conjunction with the mucoid cells. There may be some deposits of keratin in individual cells but ordinarily no large pearls form as in squamous carcinoma. Intercellular bridges are seen. In addition to mucous and epidermal cells there are "intermediate" cells which are round to oval and basaloid with scant pink cytoplasm.

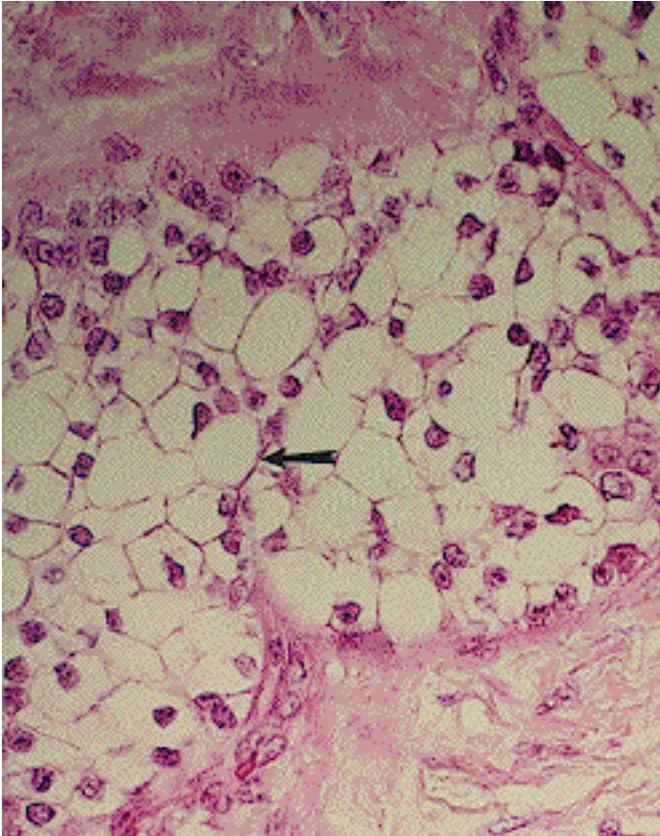
Low grade tumors show a preponderance of mucus cells and cyst formation with minimal atypia. High grade lesions may demonstrate considerable pleomorphism and mitotic activity and have more squamoid areas than mucinous areas. Such a lesion with few mucin cells may be mistaken for squamous cell carcinoma. Lymphatic involvement, necrosis, and hemorrhage are additional signs of high grade malignancy in mucoepidermoid carcinoma.

Mucoepidermoid carcinoma, high grade metastatic tumor; predominance of squamous cells admixed with large "balloon-like" mucous cells. Triangles indicate connective tissue.

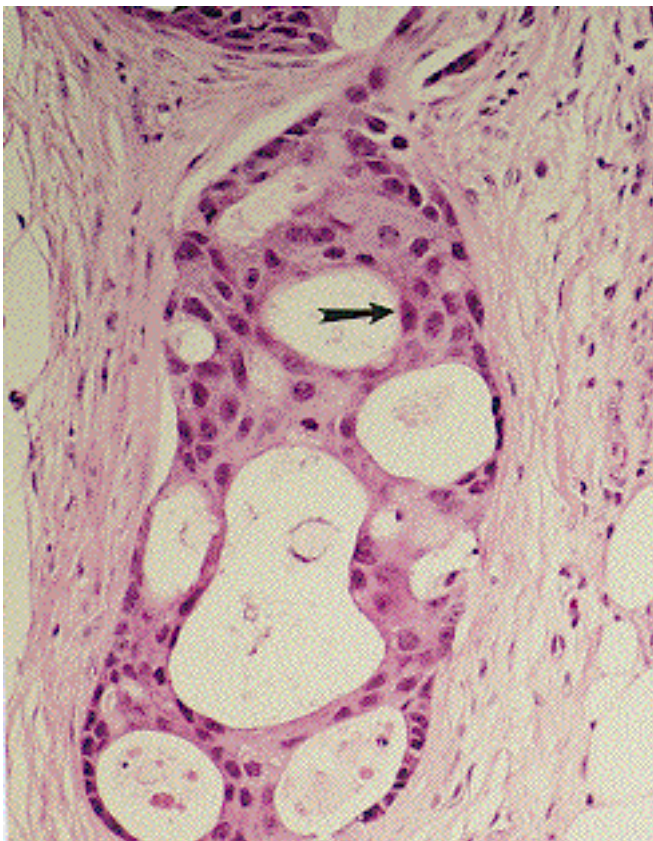


Mucoepidermoid carcinoma, metastatic, same tumor showing tumor situated in lymphatic vessel (arrow).



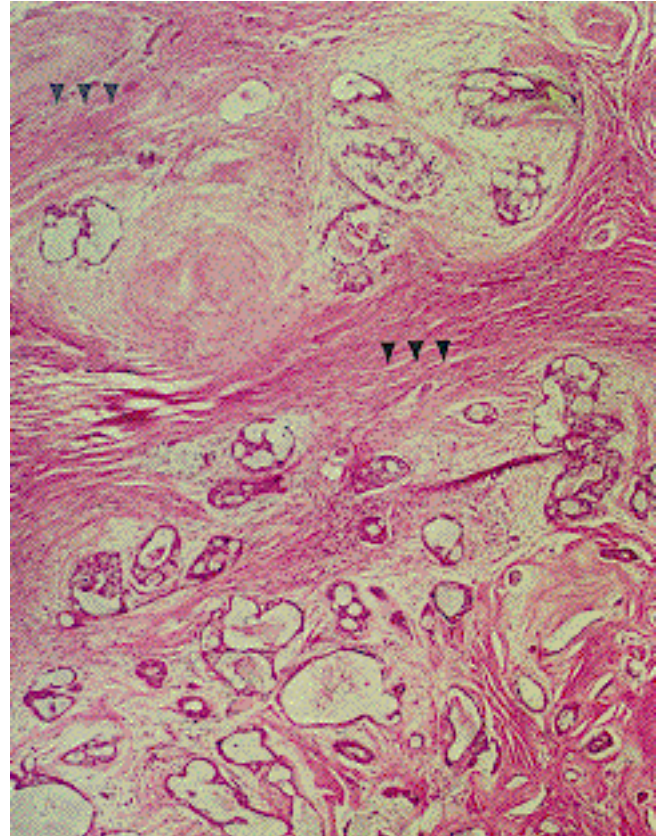


Mucoepidermoid carcinoma, clear-cell area. These cells which do not stain with mucin agent, represent hydropic squamous cells (arrow). This tumor was considered low grade overall.

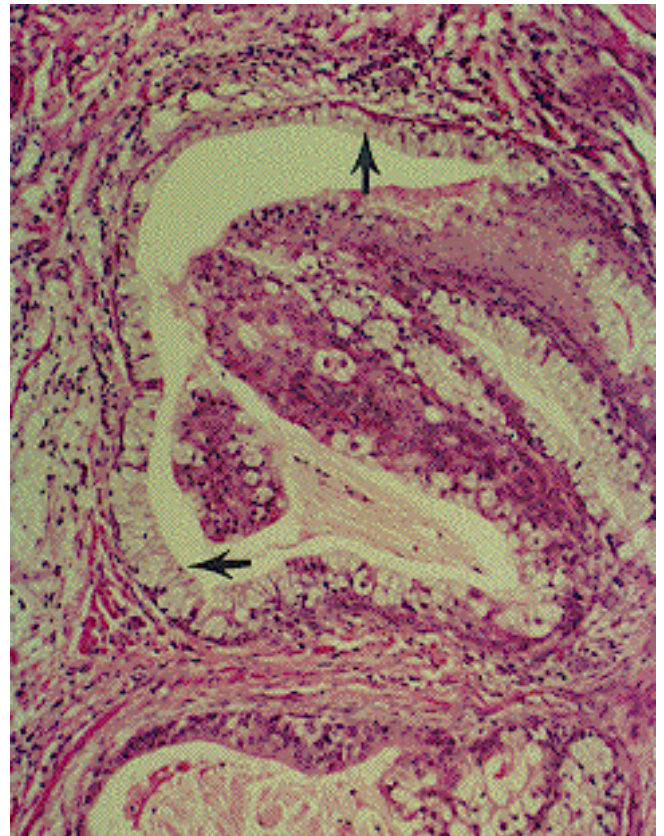


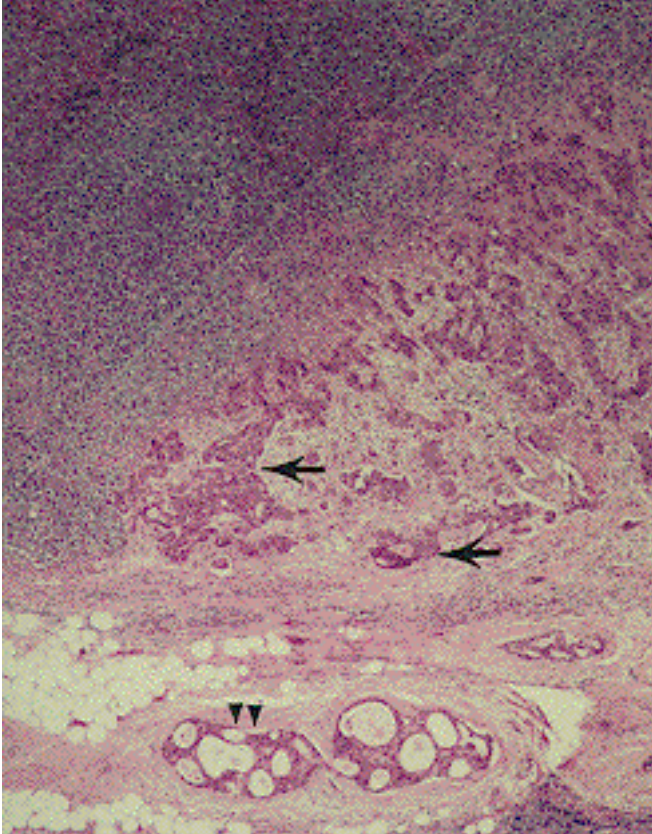
Mucoepidermoid carcinoma. This tumor is not in vessels. Although it fits the surrounding fibrous tissue so neatly that it appears to be confined to a lymphatic channel, no endothelium is seen. Squamoid cells show markedly hyperchromatic nuclei (arrows). Fibrous tissue surrounds the tumor nests. Mucous cysts are prominent.

Mucoepidermoid carcinoma, extensive desmoplasia (triangles) with mixed mucoïd and squamous elements. High grade overall.

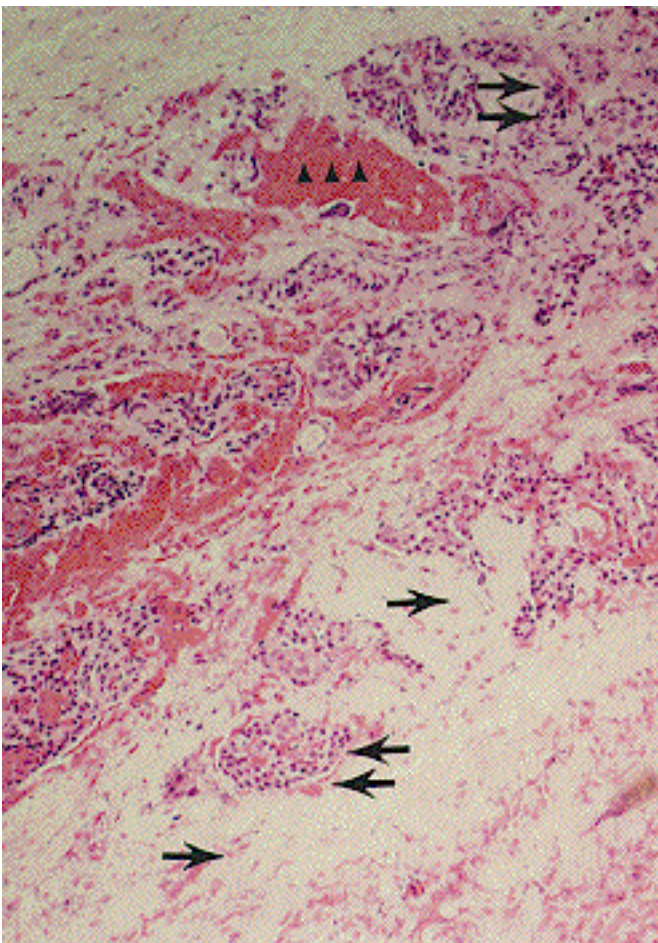


Mucoepidermoid carcinoma, columnar mucoïd secreting cells (arrows) as seen in parts of some tumors. Graded low to intermediate overall.



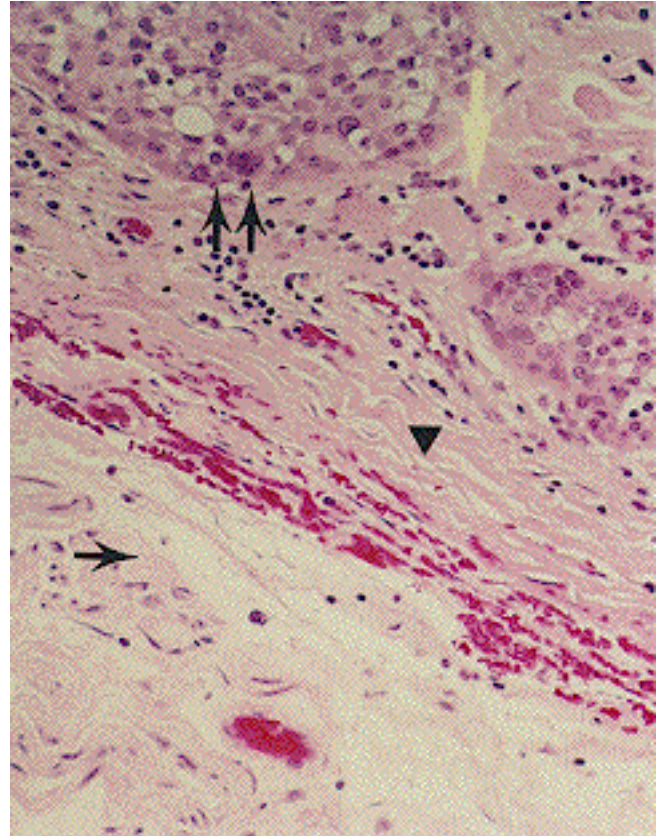


Mucoepidermoid carcinoma, metastatic, high grade. A predominantly squamous component (arrows) is invading a lymph node. An adjacent mucoïd component with some squamoid cells and cyst-like spaces (triangles) is also present and looks to be in lymphatic channels, but is not.

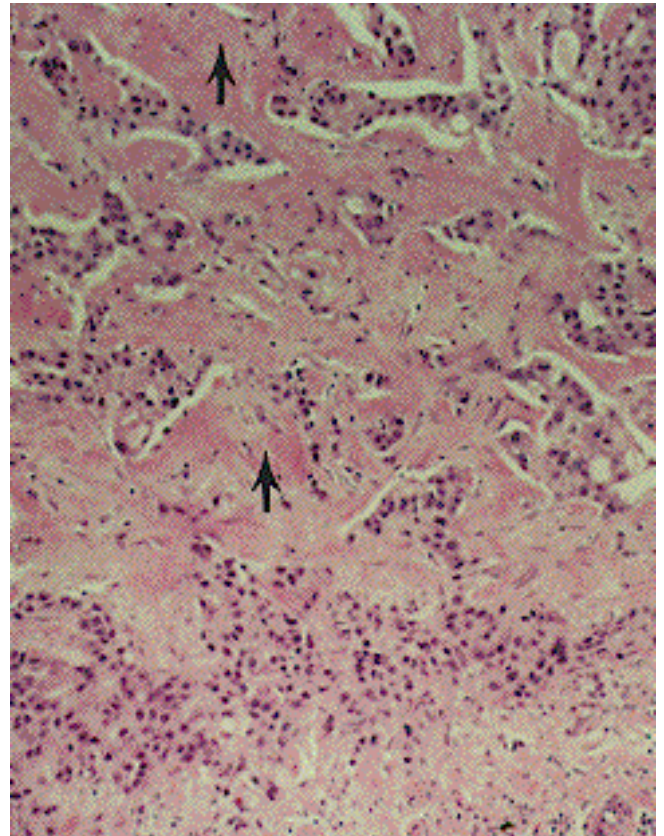


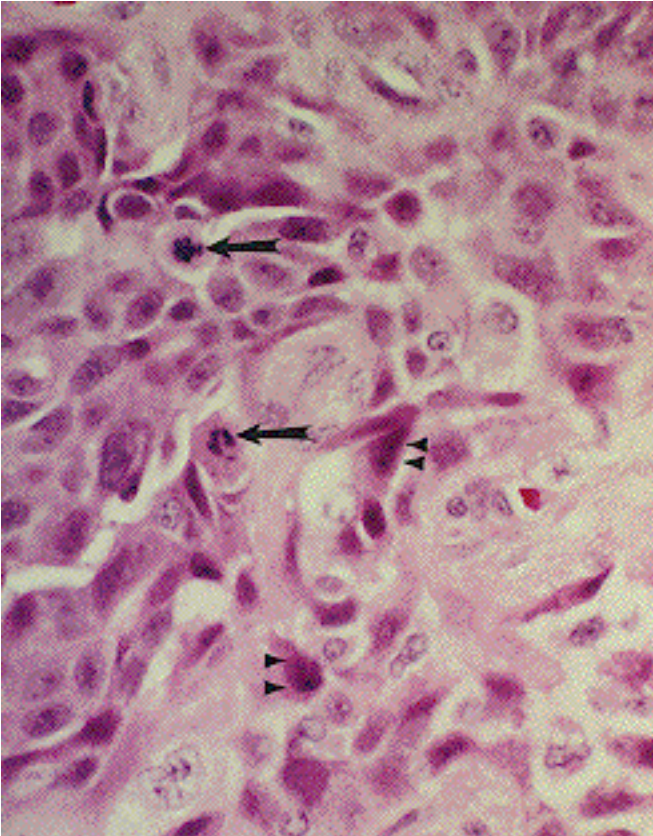
Mucoepidermoid carcinoma, showing hemorrhage (triangles) and necrosis (single arrows), features that are common in high-grade tumors. The cellular elements (double arrows) seen here are all squamous.

Mucoepidermoid carcinoma, neurotropism; proximity of tumor (double arrows) to nerve (single arrow) is a mark of hi-grade tumors. Chiefly squamous component seen here. Tissue immediately surrounding tumor nests represents desmoplasia (triangle). The pale arrow is photogenic artifact.



Mucoepidermoid carcinoma, individual cells and cords and islands of tumor with desmoplasia (arrows).





Mucoepidermoid carcinoma, high grade; note abnormal mitoses (arrows). Marked nuclear pleomorphism and hyperchromatism (triangles).

## CLINICAL ASPECTS

There is a wide range of biologic behavior for mucoepidermoid carcinoma. The majority of these tumors do not metastasize but metastases to regional nodes, bone, lung, and brain may be seen. Well-differentiated tumors have a ninety percent five year survival rate while those patients with poorly differentiated tumors may be at twenty percent.

Treatment is surgical and must include a margin of normal tissue, and preferably removal of the entire salivary gland. Radiotherapy is valuable if it seems not all of the tumor was removed.