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Commentary

Pouch and Protuberance-Cystadenoma Salivary Gland

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Cystadenoma of salivary gland is an exceptionally discerned neoplasm preponderantly composed of papillary articulations or demonstrating a cystic architecture. Tumour emerges as a unilocular or multicystic lesion wherein constituent cystic cavities delineate frequent papillary projections. Oncocytic cells are commonly discerned although lymphoid tissue is minimal to absent. Foci of cellular or nuclear atypia, mitotic figures or neoplastic invasion into circumscribing tissue is absent.

Alternative nomenclature of lymphocyte poor Warthin tumour, monomorphic adenoma, cystic duct adenoma or intra-ductal papillary hyperplasia is not recommended.

Of obscure pathogenesis, cystadenoma of salivary gland expounds a mild female preponderance. Lesion is commonly encountered within fifth decade to seventh decade. Tumour comprises an estimated 1% to 4% of salivary gland neoplasms [1,2].

Cystadenoma of salivary gland demonstrates distinct subtypes as oncocytic cystadenoma or mucinous cystadenoma. An estimated 45% neoplasms are confined to the parotid gland and clinically simulate diverse primary benign, cystic salivary gland lesions [1,2].

Minor salivary glands aggregated within lip or buccal mucosa commonly delineate the emergence of cystadenoma. Tumours occurring within minor salivary glands may recapitulate lesions of mucocele.

Clinically, tumours confined to major salivary glands represent with a painless lump or gradually progressive tumefaction. Neoplasms appearing within minor salivary glands are painless, compressible and recapitulate a mucocele [2,3].

Frozen section depicts a cyst wall layered with simple glandular cells, oncocytic cells or squamous epithelial cells. Neoplastic papillae appear to lack lymphoid cellular infiltrate. Tumour infiltration into circumscribing stroma, cellular or nuclear atypia or mitotic activity appears absent [2,3].

Occurrence of mucinous or intermediate cells indicate the presence of mucoepidermoid carcinoma. Oncocytic variant necessitates distinction from macrocystic secretory carcinoma [2,3].

Cytological examination delineates cohesive groups and aggregates of epithelial cells. Oncocytic variant is comprised of cells impregnated with abundant granular, eosinophilic cytoplasm with a distinct cellular perimeter and centric nuclei. Foci of squamous differentiation may be discerned. Emergence of focal squamous or mucinous differentiation indicates concurrence of low grade mucoepidermoid carcinoma [2,3].

Grossly, a well circumscribed, unicystic tumefaction or multicystic spaces enmeshed within salivary gland tissue is encountered [3,4].

Upon microscopy, a multilocular cyst or unicystic lesion is encountered. The well circumscribed neoplasm depicts simple papillary architecture wherein papillae are layered by an admixture of columnar, cuboidal or oncocytic epithelial cells. Besides, focal aggregates of mucinous, squamous or exceptionally ciliated epithelial cells may be discerned [3,4].

Low power examination demonstrates prominent multiloculated or multicystic tumour pattern, thereby indicating the occurrence of excessive lumens in contrast to epithelial cells. Simple papillary projections and true papillae are commonly encountered.

Foci of complex papillary architecture, mitotic activity or cellular and nuclear atypia are absent. Peripherally entrapped benign salivary gland tissue may be discerned [3,4].

Mucinous cystadenoma is exceptionally encountered wherein the lesion is devoid of architectural or nuclear atypia. Besides, demarcation from unicystic mucoepidermoid carcinoma is necessitated [3,4].

Occurrence of complex papillary tufting appears to indicate emergence of a malignant lesion as intraductal carcinoma. Cogent immunohistochemistry may be employed in order to exclude neoplasms as macrocystic secretory carcinoma or intercalated subtype of intraductal carcinoma [5,6].

Benign Epithelial Tumours	**Malignant Epithelial Tumours**
Pleomorphic adenoma	Mucoepidermoid carcinoma
Basal cell adenoma	Adenoid cystic carcinoma
Warthin tumour	Acinic cell carcinoma
Oncocytoma	Secretory carcinoma
Salivary gland myoepithelioma	Micro-secretory adenocarcinoma
Canalicular adenoma	Polymorphous adenocarcinoma
Cystadenoma of salivary gland	Hyalinising clear cell carcinoma
Ductal papilloma	Basal cell adenocarcinoma
Sialadenoma papilliferum	Intra-ductal carcinoma
Lymphadenoma	Salivary duct carcinoma
Sebaceous adenoma	Myoepithelial carcinoma
Intercalated duct adenoma and hyperplasia	Epithelial-myoepithelial carcinoma
Striated duct adenoma	Mucinous adenocarcinoma
Sclerosing polycystic adenoma	Sclerosing micro-cystic adenocarcinoma
Keratocystoma	Carcinoma ex pleomorphic adenoma
Sialolipoma (mesenchymal tumour of salivary gland)	Carcinosarcoma of salivary glands
	Sebaceous adenocarcinoma
	Lympho-epithelial carcinoma
	Squamous cell carcinoma
	Sialoblastoma
	Salivary carcinoma (NOS) and emerging entities

Table: *WHO classification of salivary gland tumors (5th edition) [4].*

Basal cells of cystadenoma appear immune reactive to p63 and CK8/18. Tumour cells appear immune non reactive to S100 protein, SOX10, mammaglobin or GATA3 [5,6].

Cystadenoma of salivary gland requires segregation from conditions as ductal ectasia, cystic oncocytic mucoepidermoid carcinoma, Warthin's tumour, cystic oncocytic myoepithelioma, macrocystic secretory carcinoma, low grade apocrine intraductal carcinoma, intraductal papilloma, salivary duct cyst, oncocytic salivary duct cyst, intercalated duct type intraductal carcinoma or mucocele [5,6].

Ultrasonography, computerized tomography (CT) or magnetic resonance imaging (MRI) depicts well circumscribed, cystic or solid tumour mass. Tumefaction may appear solid on account of internal haemorrhage or infection. Notwithstanding, neoplasm is devoid of distinctive imaging features. Specific diagnostic serological parameters are absent [6,7].

Upon radiography, a well circumscribed, cystic or solid tumefaction appears encompassed within a clear capsule. Lesion is devoid of internal flow. Infected lesions may delineate contrast enhancement of tumour capsule [6,7].

Neoplasm may be appropriately alleviated by simple surgical extermination. Tumour reoccurrence appears exceptional [6,7].

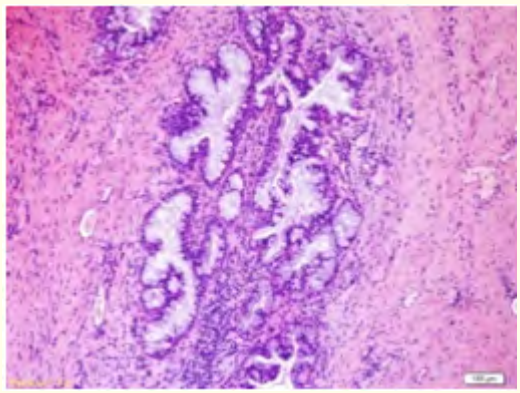

Figure 1: *Cystadenoma of salivary gland demonstrating cystic spaces with papillary projections lined by several layers of cuboidal to columnar epithelial cells. Surrounding stroma is fibrotic. Atypia or mitotic figures are absent [8].*

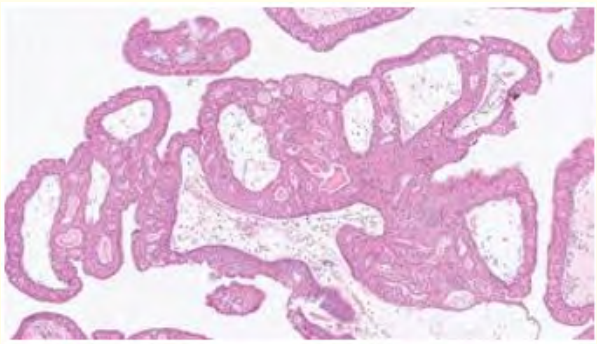

Figure 2: *Oncocytic variant of cystadenoma expounding cystic spaces with papillary projections lined by oncocytic epithelium composed of cells imbued with abundant granular eosinophilic cytoplasm and uniform nuclei. Surrounding stroma is loose and fibrotic. Atypia or mitotic figures are absent [9].*

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8. Image 1 Courtesy: Science direct.

9. Image 2 Courtesy: Nature.com.

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