

Case #1 A 35 y/o black female presents with a tongue lesions illustrated in the histologic images for this question. Based on the findings, the best diagnosis is:

Answer: D. **Granular Cell Tumor (GCT)**. The GCT is presumably of Schwann cell origin and is characterized by S-100 positivity (congenital epulis, S-100 negative). While it can occur practically anywhere, the head and neck region comprises 30-50% of cases (the tongue is the most common location in the head and neck). GCTs usually occur in the 4<sup>th</sup> or 5<sup>th</sup> decade and is more likely to occur in blacks and has a female predominance. The most important take home point is to consider the possibility of a granular cell tumor in a patient who has an apparent squamous cell carcinoma. A granular cell tumor classically induces psuedoepitheliomatous hyperplasia, which closely mimics squamous cell carcinoma. Therefore, always make it a habit to look under the squamous epithelium for granular cells (Thompson, p. 38-43)

Case #2 A 20 y/o female presents with a palpable thyroid mass. Based on the histologic findings, what is the diagnosis?

Answer: B. **Papillary Thyroid Carcinoma (PTC)** PTC can have a varied appearance, but the nuclear morphology is the most important. While most cases have a papillary architecture, some cases have a follicular pattern that can be confusing (and the cause of many consultations). The most important basic features to keep in mind are the nuclear changes, which include clearing (also described as empty, Orphan Annie-eyed, and ground glass), enlargement, and hypochromasia. Intra-nuclear inclusions and grooves are also characteristic, but are not specific (Sternberg, 4<sup>th</sup> Ed., p. 564-572)

Case #3 A 20 y/o female with a “family history of thyroid cancers” presents with a thyroid mass represented in the images for this case. What is the most likely diagnosis?

Answer: A. **Medullary Thyroid Carcinoma (MTC)** This case is an example of someone with either MENIIa or MENIIb. The family history combined with the salt and pepper nuclei of the lesion should lead one to the correct diagnosis. In addition calcitonin staining and serum levels are helpful in confirming the diagnosis. In familial cases, the average age of presentation is about 20 y/o, while sporadic cases present at an average age of 50 y/o. (Sternberg, 4<sup>th</sup> Ed., p. 580-583)

Case #4 A 37 y/o man presents with an enlarge parotid gland. A mass was identified and removed. Based on the histologic findings, what is the best diagnosis?

Answer: A. **Pleomorphic Adenoma** PAs are the most common neoplasm of the salivary gland (54-76% of all tumors) and are benign. They are composed of epithelial glands, myoepithelial cells, and mesenchymal stroma. One of the most important things to remember is the large amount of morphologic heterogeneity that can occur with these tumors. Any one of the components may predominate, which may confuse the diagnosis. Many people believe that a myoepithelioma represent an extreme spectrum of pleomorphic adenomas. If carcinoma is present within the PA, then the term *carcinoma ex* is used. (Thompson, p. 295-300)

Case #5 A 50 y/o male presents with a rapidly growing parotid mass. Representative images are shown. Based on the findings, the best diagnosis is:

Answer: C. **Salivary Duct Carcinoma (SDC)**. SDC not uncommonly presents as a malignant component of carcinoma ex pleomorphic adenoma. It usually affects individuals over 50 y/o and has a male predominance (4:1). SDC closely mimics ductal carcinoma in situ, and breast carcinoma must be excluded in patients. (Thompson, p. 354-357)

Case #6 All of the following are true with regards to the lesion represented in the histologic images for this case EXCEPT.

Answer: A. **Warthin's Tumor** is the second most common benign salivary gland tumor. It is the most common bilateral salivary gland tumor (~10%). Many believe that it arises from entrapped salivary gland tissue within intra-parotid or peri-parotid lymph nodes. Histologically it is characterized by papillary and usually cystic structures with a double layered oncocytic epithelium with a surrounding dense lymphoid infiltrate. There will often be reactive germinal centers. If one performs an FNA, there will classically be a motor-oil like fluid present. (Thompson, p. 309-312)

Question #1 Which of the following tests is the most sensitive and specific for Wegner's Granulomatosis?

Answer: B. c-ANCA (antineutrophilic cytoplasmic antibody) is 85-98% sensitive and specific for Wegner's granulomatosis. ("Head and Neck Pathology." Adair, C. *The Osler Institute*. 2004.) Anti-AMA (M2) is the antimitochondrial antibody which is found in primary biliary cirrhosis, and anti-dsDNA is one of the more sensitive findings in lupus.

Question #2 All of the following are true with regards to nasopharyngeal carcinoma EXCEPT:

Answer: B. Nasopharyngeal carcinoma is divided into three subtypes: keratinizing, nonkeratinizing, and undifferentiated. The keratinizing is not associated with EBV infection and has the worst prognosis. The undifferentiated subtype is the most common (60%) and has the best prognosis because it is sensitive to radiation. The undifferentiated subtype may be completely obscured by the inflammatory infiltrate making a cytokeratin stain necessary to identify the neoplasm.

Question #3 Which of the following sub-classifications of sinonasal papillomas are most often associated with carcinomas?

Answer: A. Inverted papillomas are most commonly located on the lateral nasal wall, and are found to be malignant up to 10% of the time. It is important to look closely for areas of surface keratinization because the dysplasia is often underlying these areas.

**Question #4** A red-pink friable nasal polypoid lesion is biopsied in a 45 y/o Indian male. Histologic examination shows a hyperplastic epithelium with an underlying dense lymphoplasmacytic infiltrate containing scattered large cysts (~300µm), which have thick birefringent walls. Based on the description, the best diagnosis is:

Answer: E. Rhinosporidium is found more commonly in individuals from India or Sri Lanka. It is characterized by large spores (~300µm), which are visualized at low power. In contrast, Coccidioides is made up of smaller spores, in the range of 5-60µm. Coccidioides also typically has a granulomatous reaction associated with it. Once the spores are identified, the differential diagnosis becomes very limited. (Thompson, p. 102-104)

References:

*Head and Neck Pathology*. Thompson, LD, et al. First Edition. 2006.

**Notes for question set:**<sup>1</sup>

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<sup>1</sup> PathMD strives for the highest quality and accuracy. However, the *PathMD: Board Review Letter* is for review purposes and not meant for clinical decision making. It should not be used in place of review of primary reference texts and the current medical literature. If inaccuracies are identified, please notify us so that a correction may be published. (info@PathMD.com)