

Case #1 A 30 y/o male presents to an ENT doctor complaining of hearing loss. On examination white debris is found within the middle ear. Surgery is performed and a boney destructive lesion is found. Representative histologic sections are available for review. Based on these findings, the best diagnosis is:

D. Cholesteatoma

Answer: D. **Cholesteatoma**. Cholesteatomas (a.k.a. epidermal cyst or epidermal inclusion cyst of the middle ear) are not true neoplasms, but can behave in a very destructive and aggressive manner if not completely removed surgically. These lesions usually occur in men, and are most common in the third or fourth decade of life. Histologically, the diagnosis is based on finding keratinizing squamous epithelium in the middle ear. Keratin debris alone is not diagnostic. (Sternberg, 4<sup>th</sup> Ed., p. 1046-47)

Case #2 A nasal mass is removed from a 40 y/o male. Based on the image for this question, which of the following is the best diagnosis:

D. Both A or C are correct

Answer: D. This image represents a cylindrical cell papilloma which is also known as an **oncocyctic Schniderian papilloma**. These represent a small portion of sinonasal papillomas (~3%). Septal papilloma (50%) are exophytic and rarely undergo malignant transformation, but lateral wall papillomas (47%) tend to be inverted and may be malignant up to 10% of the time. (“Head and Neck Pathology.” Adair, C. *The Osler Institute*. 2004.)

Case #3 A 52 y/o man with facial nerve paralysis and a parotid mass undergoes a FNA. Representative images are shown. Based on the history and cytology findings, the best diagnosis is:

A. Adenoid Cystic Carcinoma

Answer: A. **Adenoid Cystic Carcinoma**. This case represents a classical case of adenoid cystic carcinoma with a cribriform pattern. These tumors are notorious for perineural invasion and hematogenous dissemination. The tumor almost always extends beyond the palpable margins. Often these lesions metastasize, usually to the lungs, where they may have an indolent course for years. (Sternberg, 4<sup>th</sup> Ed., p. 946-47)

Case #4 A 45 y/o female presents with a thyroid nodule. After examination and studies, it was decided to surgically excise the nodule. Representative images are available for review. Based on the findings, the best diagnosis is:

E. Hashimoto’s Thyroiditis

Answer: E. **Hashimoto’s Thyroiditis**. Hashimoto’s thyroiditis is characterized by an inflammatory infiltrate (usually with germinal center formation) and Hurthle cell changes in the follicular epithelium. This author prefers to use the term lymphocytic thyroiditis unless the clinical findings of Hashimoto’s thyroiditis is present. (Sternberg, 4<sup>th</sup> Ed., p. 560-61)

Case #5 A 50 y/o man presents with a palpable cervical lymph node and nasal fullness. Representative images from a nasal mucosal biopsy are shown. Cytokeratin stains are positive in the malignant cells. Based on the findings, all of the following are true EXCEPT:

D. Chemotherapy is first line treatment

Answer: D. This is an example of **Non-keratinizing Nasopharyngeal Carcinoma**. Nasopharyngeal carcinoma (NPC) is divided into three subtypes (non-keratinizing, keratinizing, and basaloid). The non-keratinizing has the best survival rate (55-60% at 5 years) and is very radiosensitive (first line therapy). 70% of cases present with metastatic disease, and local symptoms are a late manifestation. NPC is most common in Asians and is associated with EBV infection. In fact, EBV viral load can sometimes be monitored for possible recurrences. (Thompson, p. 170-174)

Case #6 The images for this case come from an invasive head & neck lesion. Based on the histology, the best diagnosis is:

D. Adenoid squamous cell carcinoma

Answer: D. **Adenoid Squamous Cell Carcinoma**. This case represents a rare variant of squamous cell carcinoma (adenoid squamous cell carcinoma). This lesion is characterized by acantholysis which results in a tubular appearance. This is presented to show a less common appearance of a very common diagnosis.

Question #1 Which of the following is not correct in the pathology of allergic fungal sinusitis:

A. May be caused by invasive Aspergillus

Answer: A. Allergic fungal sinusitis is not an invasive disease process. It is known to be caused by dematiaceous fungi and Aspergillus. Due to the inflammatory infiltrate which is rich in eosinophils, the mucus is thick and eosinophilic with Charcot-Layden crystals. Fungal elements may or may not be seen with special stains (GMS). ("Head and Neck Pathology." Adair, C. *The Osler Institute*. 2004.)

Question #2 Which of the following is the most common translocation partner with the *FKHR* gene in alveolar rhabdomyosarcoma?

B. PAX 3

Answer: B. *PAX 3* is translocated to join *FKHR* in the t(2;13)(q35;q14) and is the most common translocation in alveolar rhabdomyosarcoma. The (1;13)(p36;q13) which involves the *PAX7-FKHR* gene fusion is the second most common translocation in alveolar rhabdomyosarcoma. The other answers either do not exist (*PAX1* and *PAX 9*) in known rhabdomyosarcoma translocations or are involved in other diseases (*EWS*). (*Tumors of the Bone & Joints*. Unni, KK, et al. AFIP Tumor Fascicle Series #4. 2005.)

Question #3 All of the following are true with regards to spindle cell carcinoma of the larynx EXCEPT:

A. Must be positive for cytokeratin

Answer: A. Primary sarcomas of the larynx are exceptionally rare, and the absence of cytokeratin positivity should not prevent the diagnosis of spindle cell SCC of the larynx in the proper setting. (“Head and Neck Pathology.” Adair, C. *The Osler Institute*. 2004.)

Question #4 Which of the following lesions is associated with dust exposure in the wood or furniture industry?

E. Sinonasal adenocarcinoma

Answer: E. Sinonasal carcinoma is associated with multiple occupations exposures including wood dust, furniture making, and leather processing. (“Head and Neck Pathology.” Adair, C. *The Osler Institute*. 2004.)

References:

*Sternberg’s Diagnostic Surgical Pathology*. Mills, SE, *et al*. Fourth Edition. 2004.

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

*Head and Neck Pathology*. Adair, C. *The Osler Institute*. 2004.

*Tumors of the Bone & Joints*. Unni, KK, *et al*. AFIP Tumor Fascicle Series #4. 2005

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

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