

Case #1 The images for this case come from a 5cm thyroid mass in a 50 y/o female. Based on the findings, what is the best diagnosis?

- A. Hashimoto's thyroiditis
- B. Lymphocytic thyroiditis
- C. Follicular lymphoma
- D. Marginal zone lymphoma
- E. Papillary carcinoma

Answer: D. This case represents a MALT lymphoma (marginal zone lymphoma), which is supported by a monomorphic lymphoid infiltrate and lymphoepithelial lesions. MALT lymphoma commonly arises in the background of Hashimoto's thyroiditis, which can only be differentiated by lymphocytic thyroiditis with the appropriate laboratory tests and clinical setting.

Case #2 Images from a thyroidectomy are shown. Based on the morphology, what is the best diagnosis?

- A. Papillary thyroid carcinoma
- B. Follicular thyroid carcinoma
- C. Signet ring cell carcinoma
- D. Signet ring cell change
- E. None of the above

Answer: D. These findings represent signet ring cell change, which is a benign finding.

Case #3 A thyroid mass was found in a 40 year old female. A thyroidectomy was performed and representative images are shown. Which of the following is not likely to be positive in this tumor?

- A. CEA
- B. Thyroglobulin
- C. Calcitonin
- D. Congo red
- E. Chromogranin

Answer: B. Thyroglobulin is usually negative in medullary carcinomas. Medullary carcinomas are associated with amyloidosis and are congo red positive.

Case #4 An invasive rapidly growing neck mass was identified in a 75 year old male. The mass was excised, and representative images are shown. IHC for thyroglobulin, chromogranin, and cytokeratins are negative. What is the most likely diagnosis?

- A. Metastatic squamous cell carcinoma
- B. Osteosarcoma
- C. Giant cell tumor
- D. Anaplastic thyroid carcinoma
- E. None of the above

Answer: D. Anaplastic Thyroid Carcinoma. This tumor has giant cells, which have been described in anaplastic thyroid carcinomas. They usually don't stain with any thyroid markers, but may have evidence of another malignant thyroid carcinoma. This can be supportive in the diagnosis.

Case #5 A thyroid was removed from a 40 year old female. Grossly, the gland was black, and representative histologic images are shown. Based on the findings, what is the best diagnosis?

- A. Diffuse hemosiderin deposition
- B. Melanosis of the thyroid
- C. Minocycline effect
- D. Linazolid treatment
- E. None of the above

Answer: C. This case represents “Black Thyroid,” which may be found in patients treated with minocycline.

Case #6 A patient is found to have a laryngeal mass represented by the image for this question. Based on the morphology and lack of PAS staining, which of the following is the best diagnosis:

- A. Granular cell tumor
- B. Epitheloid squamous cell carcinoma
- C. Rhabdomyoma
- D. Chondrosarcoma
- E. Rhabdomyosarcoma

Answer: C. This is an example a rare lesion: rhabdomyoma (desmin + and other muscle markers). These are often confused with granular cell tumors (S-100 + & PAS + diastase resistant). Morphologically granular cell tumors tend to have nuclei more in the center of the cytoplasm compared to rhabdomyomas, which are usually to the periphery (analogous to normal skeletal muscle). This lesion is benign and should not be confused with rhabdomyosarcoma (look nothing alike). (“Head and Neck Pathology.” Adair, C. *The Osler Institute*. 2004.)

Question #1 Which of the following are not found in angiolymphoid hyperplasia with eosinophilia

- A. Regional lymphadenopathy
- B. epitheloid vascular proliferation
- C. Peripheral eosinophilia
- D. Both A and C
- E. All of the above

Answer: D. Angiolymphoid hyperplasia with eosinophilia is an inflammatory process with an epitheloid vascular proliferation located in the soft tissue. The inflammatory infiltrate is often rich in eosinophils giving it the name. This lesion is often confused with Kimura’s disease, which is usually found in Asians with regional lymphadenopathy and peripheral eosinophilia. (“Head and Neck Pathology.” Adair, C. *The Osler Institute*. 2004.)

Notes for question set:¹

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