Case Scenario 1: Thyroid

History and Physical

Patient is an otherwise healthy 80 year old female with the complaint of a neck mass first noticed two weeks ago. The mass has increased in size and is palpable. Ultrasound of the thyroid and lateral neck showed a large mass of the left thyroid, but no right or left neck lymphadenopathy. Chest x-ray identified no abnormalities in left or right lung and no lymphadenopathy. Fine needle aspiration (FNA) of neck mass was performed and diagnosed carcinoma. Patient will be admitted for total thyroidectomy.

Operative Report

Operation: Total thyroidectomy

Findings: Left thyroid lobe consisting of an ovoid pink-purple rubbery mass. The mass is lobulated and extends to the capsular surface. No residual disease is present. Right thyroid lobe is smaller and normal in appearance.

Pathology Report

Gross: The specimen is labeled left thyroid lobe and consists of an 8.0 x 6.5 x 4.5 cm mass weighing 135 grams. Cut section reveals tan-white, firm, fibrotic tissue that completely replaces any normal thyroid tissue. The right thyroid lobe is 4.0 x 4.8 x 1.0 cm and weighs 30 grams. Also received was a 2.5 x 2.0 x 0.5 cm portion of lobulated adipose tissue labeled para laryngeal lymph nodes. On dissection, it contained three rubbery tan lymph nodes, measuring 1.2 cm, 1.0 cm, and 0.5, in greatest dimension, respectively.

Final diagnosis: Left thyroid lobe with papillary carcinoma, 8 cm in size. There is extensive vascular invasion and focal extension into perithyroidal soft tissue. The right lobe is positive for multifocal follicular thyroid carcinoma. The largest foci measures 0.8 cm. One of the three lymph nodes submitted was positive for papillary carcinoma.

Oncology Notes

Patient with an 8 cm papillary carcinoma of the left thyroid was treated with a total thyroidectomy and excision of three central compartment lymph nodes. Post-operative lab tests indicated an elevated thyroglubin level (1.8 ng/mL). Basal calcitonin was undetectable and CEA level was within normal range. The patient went on to have adjuvant radioiodine ^{131}I treatment. Subsequent imaging did not show any uptake. The patient is currently taking levothyroxine as a TSH suppressant. She will have neck ultrasound as well as serum calcitonin and CEA tests in 6 months.

- **How many primaries are present in case scenario 1?**
- **How would we code the histology of the primary you are currently abstracting?**

Stage/ Prognostic Factors

(Print two copies of this page if patient has multiple primaries)

CS Tumor Size		CS SSF 9	
CS Extension		CS SSF 10	
CS Tumor Size/Ext Eval		CS SSF 11	
CS Lymph Nodes		CS SSF 12	
CS Lymph Nodes Eval		CS SSF 13	
Regional Nodes Positive		CS SSF 14	
Regional Nodes Examined		CS SSF 15	
CS Mets at Dx		CS SSF 16	
CS Mets Eval		CS SSF 17	
CS SSF 1		CS SSF 18	
CS SSF 2		CS SSF 19	
CS SSF 3		CS SSF 20	
CS SSF 4		CS SSF 21	
CS SSF 5		CS SSF 22	
CS SSF 6		CS SSF 23	
CS SSF 7		CS SSF 24	
CS SSF 8		CS SSF 25	

Treatment

Diagnostic Staging Procedure			
Surgery Codes		**Radiation Codes**	
Surgical Procedure of Primary Site		Radiation Treatment Volume	
Scope of Regional Lymph Node Surgery		Regional Treatment Modality	
Surgical Procedure/ Other Site		Regional Dose	
		Boost Treatment Modality	
Systemic Therapy Codes		Boost Dose	
Chemotherapy		Number of Treatments to Volume	
Hormone Therapy		Reason No Radiation	
Immunotherapy			
Hematologic Transplant/Endocrine Procedure			

Case Scenario 2: Thyroid

History and Physical

The patient is a 66 year old gentleman who presented with a left thyroid mass. The patient was evaluated at an outside facility. Fine needle aspiration was positive for carcinoma. The patient had a palpable prominent left thyroid area mass but also had prominent lymphadenopathy. The patient underwent MRI scan which revealed a large thyroid mass. In addition, there was a large zone II mass compressing the internal jugular vein. There also appeared to be lymphadenopathy in the jugular chain in zones III and IV.

Operative findings

Operation: Left thyroidectomy with ipsilateral modified neck dissection

Pathology

Gross: The specimen consisted of left thyroid weighing 42.34 grams and measuring 6.1 x 5.2 x 2.0 cm. The external surface appears shiny with attached perithyroidal fat. There is no evidence of gross extension of tumor to the thyroid capsule. On cut section, there is a 4.5 cm poorly circumscribed indurated lesion with infiltrating borders and foci of hemorrhage and necrosis. The rest of the thyroid is orange-yellow, fleshy with no evidence of nodules noted.

Microscopic: The tumor includes the histological features of medullary carcinoma, which include nests or chords of cells penetrating dense pink stroma with a lobular, trabecular or even solid growth pattern. The tumor can be seen to abut normal thyroid microscopically. There is focal staining of the stroma with Congo red. There is moderate cytoplasmic staining for Calcitonin. Staining for CEA is intensely positive in all tumor cells.

Final diagnosis: Moderately differentiated medullary carcinoma of the thyroid gland, 4.5 cm, with extension to capsular margins of resection. Focal angiolymphatic invasion was identified with four of 20 level III and level IV lymph nodes positive for metastasis.

Oncology Consult

Because of the abnormal CEA and elevated calcitonin, MRI of neck, chest and abdomen were performed post-operatively. All imaging was normal. Serum calcitonin and CEA levels will be tested again in 6 months.

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Treatment

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Case Scenario 3: Adrenal Gland

History and physical

This 27 year-old white man had an unremarkable medical history until 6 months prior to admission when he was found to have hypertension which was unresponsive to medical therapy. Three weeks prior to admission he developed bilateral gynecomastia and more recently, he began experiencing very severe right flank pain while on the job. Sonogram and Computerized Tomography revealed an adrenal mass which also appeared to extend into the inferior vena cava at the level of the right adrenal gland just below the hepatic vein. No enlarged lymph nodes or other abnormalities were identified. Resection was performed.

Pathology

Gross: The resected specimen consisted of the right adrenal gland and right kidney. A 10 cm tumor was found in the adrenal gland which weighed 250 grams. The vast majority of the adrenal gland was replaced by the neoplasm which appeared to be confined within the adrenal capsule. No invasion into the adjacent kidney was seen.

Microscopic: The resected neoplasm was confined to the adrenal gland. At the edges, infiltration through the capsule of the adrenal gland was noted. The neoplasm consisted of sheets of polygonal cells with a rich vascular stroma and areas of geographic necrosis. Cytologically, the vast majority of the cells were polygonal with eosinophilic cytoplasm, a moderate degree of nuclear pleomorphism, prominent nucleoli, and vesicular chromatin pattern. In the most active areas, 35 mitoses were counted in 10 high powered fields. Invasion into the adrenal vein seen grossly was confirmed histologically. In an attempt to confirm the adrenal cortical origin of this neoplasm, a battery of immunohistochemical stains was performed. Intense staining for Synaptophysin was appreciated. Vimentin stain was also positive. Immunohistochemical stains for AE1/AE3 (cytokeratin), CAM 5.2, Epithelial Membrane Antigen, and Chromogranin were negative.

Final diagnosis: Moderately differentiated adrenal cortical carcinoma with adrenal vein invasion (10 cm, 250 gm)

Oncology consult

The patient with adrenocortical carcinoma with adrenal vein invasion recently completed his final round of Mitotane. The patient is currently asymptomatic. Follow-up exam is scheduled in three months.

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