

Endocrine & Neuroendocrine Tumours										
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Head & Neck Pathology	BFF: Best Features Forever
<ul> <li>Virtual whole diagnosis</li> </ul>	e slide case for each
•All reference number	s link to PubMed ID
•Online version that were not	on will have more images published in the book







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#### Multinodular hyperplasia

Multinodular hyperplasia refers to non-inflammatory and nonmalignant enlargement of the thyroid gland due to benign follicular cell proliferations.

Essential:

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- Follicular cell proliferations lacking invasive growth
- Lacking nuclear features of papillary thyroid carcinoma
- There is often an admixture of follicular and papillary growth patterns along with varying degrees of degenerative and reparative changes

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#### Follicular adenoma with papillary architecture ad & Neck Patholog A benign non-invasive encapsulated follicular-cell-derived neoplasm that is characterized by an intrafollicular papillary architecture, lacks nuclear features of papillary thyroid carcinoma, and is often associated with autonomous hyperfunction. Most patients have subclinical hyperthyroidism and present with a thyroid mass; however, 15-60% of patients present with symptoms of hyperthyroidism

- Essential:
- Encapsulated thyroid neoplasm
- Follicular epithelial cells with organized intrafollicular papillary architecture
- Sub-follicle formation · Broad papillae with edematous cores
- No nuclear atypia, capsular invasion and psammoma bodies

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#### Slide 17

LT1 Lester Thompson, 6/21/2021



































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rollicular cell-derived neoplasms
Malignant neoplasms
Follicular thyroid carcinoma
Invasive encapsulated follicular variant papillary carcinoma
Papillary thyroid carcinoma
Oncocytic carcinoma of the thyroid
Follicular-derived carcinomas, high-grade
Anaplastic follicular cell derived thyroid carcinoma
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Read Entropy Diagnostic criteria for high grade follicular cell derived thyroid carcinomas						
Feature	Poorly differentiated thyroid carcinoma (Turin proposal)					
Architectural pattern	Solid/trabecular/insular growth required					
Nuclear features	<b>Absence</b> of nuclear features of papillary thyroid carcinoma (PTC) required					
Necrosis, mitosis and convoluted nuclei	At least <u>one</u> of the following three features: Mitotic count ≥3/2 mm <sup>2</sup> Tumor necrosis Convoluted nuclei					
Anaplastic features	None	55				











































Head Black Bathology Diagnostic criteria for high grade follicular cell derived thyroid carcinomas							
Feature	Poorly differentiated thyroid carcinoma (Turin proposal)	High Grade Differentiated Thyroid carcinoma					
Architectural pattern		Papillary, follicular, solid					
Nuclear features	<b>Absence</b> of nuclear features of papillary thyroid carcinoma (PTC) required	Any					
Necrosis, mitosis and convoluted nuclei	At least <u>one</u> of the following three features: Mitotic count ≥3/2 mm <sup>2</sup> Tumor necrosis Convoluted nuclei	At least <u>one</u> of two present: Mitotic count ≥5/2 mm <sup>2</sup> Tumor necrosis					
Anaplastic features	None	None					









Head & Neck Pathology	Studies to help with lymphovascular invasion
<ul> <li>I <u>NEVER</u> use a invasion</li> </ul>	any IHC to document lymphovascular
♦ CD34	<ul> <li>von Willebrand Factor</li> </ul>
◆ CD31	♦ GLUT1
♦ FVIIIRAg	◆ VEGF-R
♦ ERG	♦ PROX1/2
♦ FLI1	♦ WT-1
♦ D2-40	
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Head & Neck Pathology	Common molecular alterations in high-grade non anaplastic follicular cell-derived carcinoma						
Subtype	<i>BRAF</i> V600E	RAS	TERT	TP53	EIF1AX	PTEN	РІКЗСА
Poorly differentiated thyroid carcinoma (PDTC)	6%	44%	44%	15%	15%	6%	2%
High grade differentiated thyroid carcinoma (HGDTC)	81%	6%	39%	3%	3%	0%	3%













 Secretory carcinoma (SC) is a salivary gland-type carcinoma that is often composed of microcystic, tubular, and solid structures with abundant eosinophilic homogeneous or bubbly secretions. It is usually characterized by a specific rearrangement of the *ETV6* gene

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Thymic Tumors in Thyroid Gland							
Markers	Thymic Ca	HGFDC	Anaplastic	Medullary	Met LCNEC	Met NPC	Foll Den Sarc
CD5	+	-	-	-	-	-	-
KIT (CD117)	+	+/-	-	+(≈25%)	+(>70%)	+(≈33%)	-
p63, p40	+	-	+/-	-	_/+	-	-
Pan-cytokeratin	+	+	+	+	+	+	-
Thyroglobulin	-	+	-	-	-	-	-
PAX8 (m) <sup>a</sup>	-	+	+/-	-	-	-	-
Calcitonin	-	-	-	+	rare	-	-
Synaptophysin, chromogranin A	+/-	-	-	+	+	-	-
p53	+(≈78%)	+/-	+(≈80%)	-	+	+	-
CD21, CD35	-	-	-	-	-	-	+
EBER <sup>b</sup>	-	-	-	-	-	+	-
TC: Instruction of aprice consistence. IEEEC, high grade following-tension introducing parshy differentiated frequid carcisome, the Constitution of the structure of the stru							



Head & Neck Pathology

### **Embryonal tumors**

Embryonal thyroid neoplasms

#### Thyroblastoma

Thyroblastoma is an embryonal high-grade thyroid neoplasm composed of primitive thyroid-like follicular cells surrounded by a primitive small cell component and mesenchymal stroma with variable differentiation

- Previously malignant thyroid teratoma
- Those tested have DICER1 variants

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