

Bethesda III Thyroid Cytopathology – An Unpopular But Necessary Category

Cases 2020-2024 revisited.

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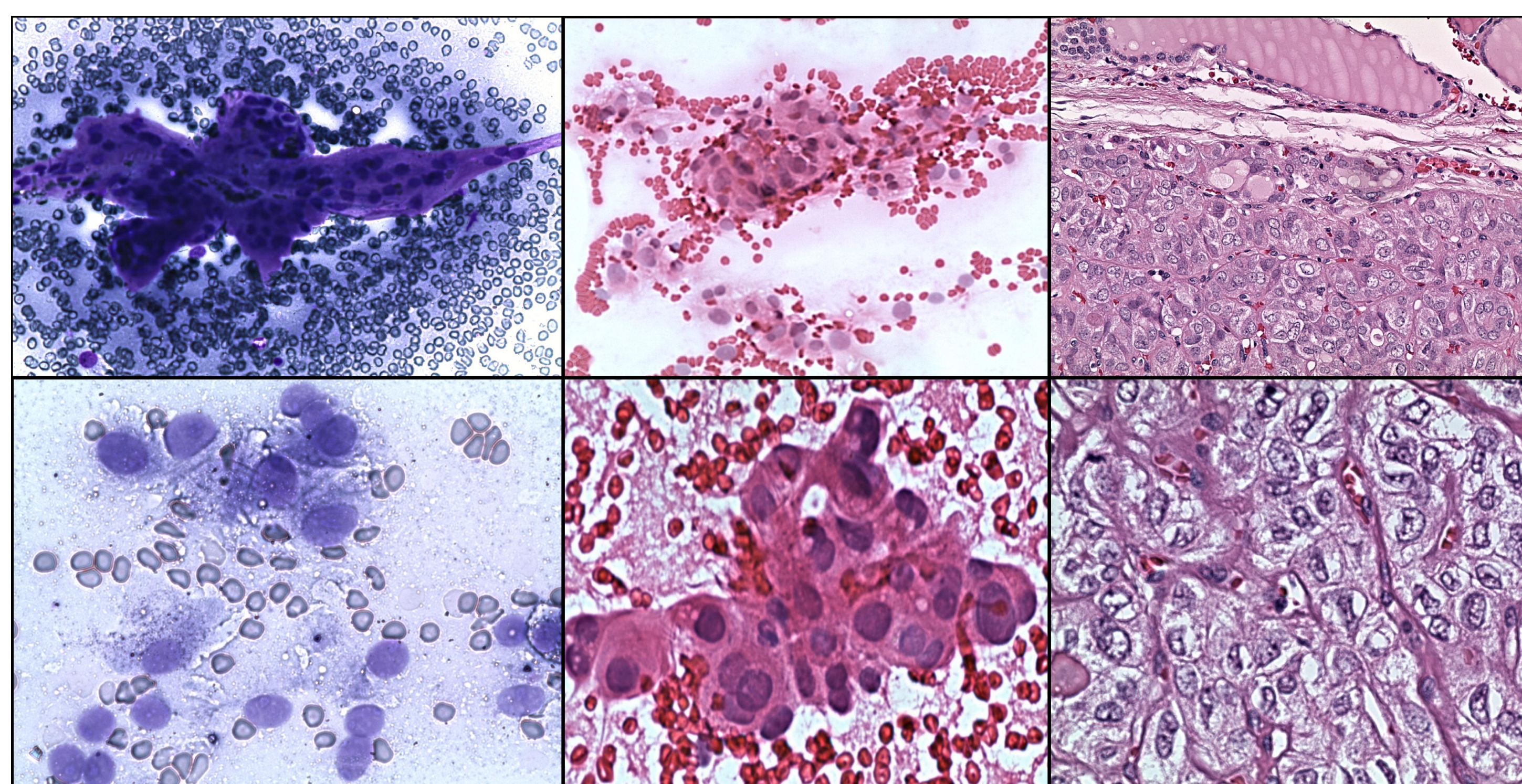
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Introduction: The BIII category refined in the new edition of the TBSRTC (2022), allows for easy reclassification of previously diagnosed BIIIs. Our study focused on reviewing the frequency and types of BIIIs over a five-year period (2020-2024) comparing a faculty postgraduate training centre site with two diagnostic laboratories staffed by the same senior pathologist consulting also the training centre cases.

Results: The overall incidence of BIII in the period was 4.6 % (196 cases out of 4263 diagnoses; females 84%) for both compared groups, higher at the faculty workplace 6.1 % (84 cases out of 1370 diagnoses) compared to the private laboratory 3.9 % (112 cases out of 2893 diagnoses). The subtype distribution was BIIIo 58.6%, BIII n 28.6%, combined BIII n/o 12.9%. Biopsy was performed in 41 patients (20,9%), 16 biopsy diagnoses were malignant (ROM 8.2%). The higher incidence of BIIIs in a training centre with less experienced evaluating cytopathologists leads to a higher incidence even with regular consultation of BIII cases by an experienced consultant compared to laboratories with primary evaluation by a single experienced cytopathologist.

Illustration case 1: F34, nodule diam. 10 mm in the isthmus.



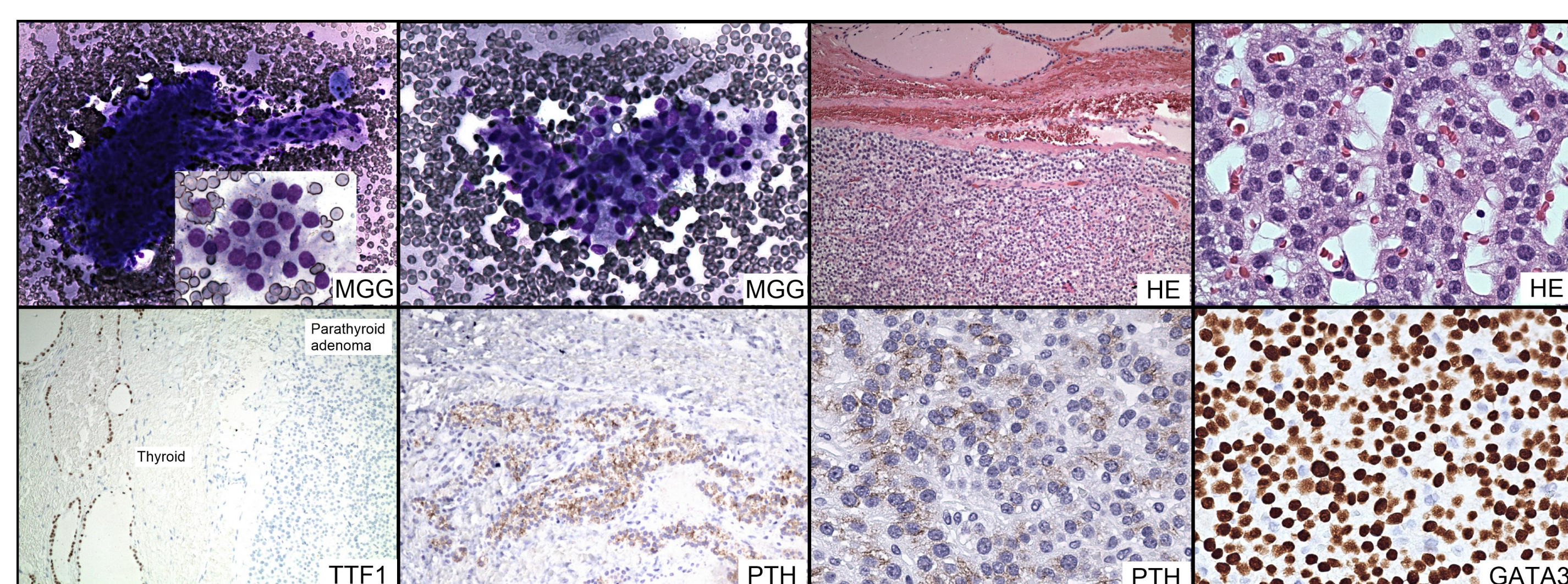
FNAC: Nuclear features of papillary carcinoma (WHO score 2). Oncocytic features.
BIII/n. Nuclear atypia.
Diff. dg. Papillary ca /NIFTP/ oncofollicular neoplasia.

Biopsy: NIFTP.
Oncocytic subtype
(WHO 2022)

Materials and methods: All FNABs classified as BIII were reviewed and subtyped. Clinical endocrinologists provided follow-up in cases where histopathological examination was not performed. An analysis of preanalytical and analytical factors influencing incidence was performed. Typical and didactically most beneficial cases were included in a postgraduate workshop.

Illustration case 2: F40.

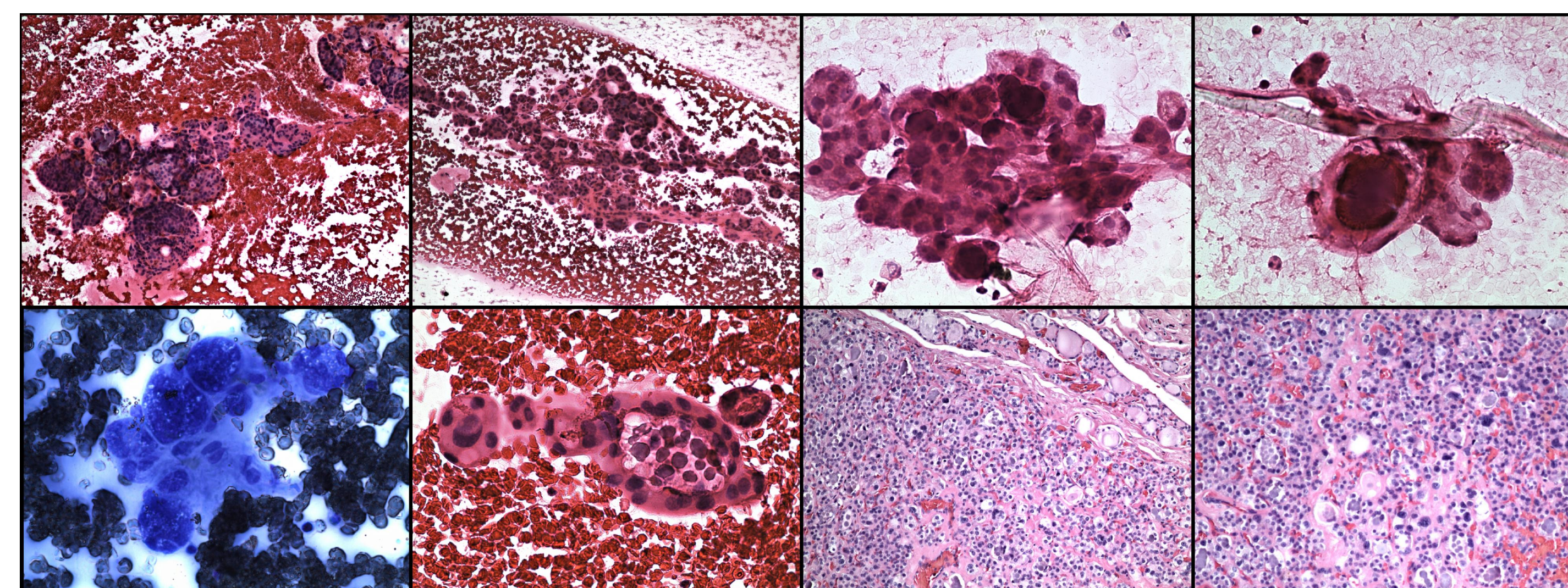
Nodule diam. 16 mm in the upper right lobe.



FNAC: Medium cellularity. Capillarized microfollicular microfragments. BIII/o. Follicular nodule diff. dg. hyperplastic / autonomous.

Biopsy:
Parathyroid adenoma

Illustration case 3: M76. Dominant nodule 35 mm in the right lobe.



FNAC: Overall low cellularity, single microfollicular microphragment with calcifications and striking anisokaryosis. BIII n/o .

Biopsy.
Follicular adenoma with bizarre nuclei

Comment:

The higher incidence of BIII in a training centre with a spectrum of less experienced evaluating cytopathologists leads to a higher incidence even with regular consultation of BIII cases by an experienced consultant compared to laboratories with primary evaluation by a single experienced cytopathologist.

•Conclusion: Strict application of diagnostic criteria for individual BIII subtypes and close interdisciplinary communication are tools for maintaining the sensitivity of thyroid FNAB and keeping the incidence of BIII within the range corresponding to the actual limits of the diagnosed sample.

References

- [1] Ali SZ, VanderLaan PA: The Bethesda system for reporting thyroid cytopathology. Definitions, criteria, and explanatory notes. 3rd ed: Springer, 2023
- [2] WHO Classification of Tumours Editorial Board. Endocrine and neuroendocrine tumours [Internet]. Lyon (France): International Agency for Research on Cancer; 2025 [cited 2025 04 01]. (WHO classification of tumours series, 5th ed.; vol. 10). Available from: <https://tumourclassification.iarc.who.int/chapters/53>.