Surgical correlation of thyroid nodules categorized as potential follicular neoplasms in core-needle biopsy (CNB)

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EP- 1099

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INTRODUCTION AND OBJECTIVES

Diagnostic performance of thyroid FNA is hindered by non-diagnostic biopsies due to indeterminate cytological patterns, including AUS/FLUS, and FN/SFN, third and fourth categories of BSRTC. CNB has proved to be useful in these cases.

We use CNB for routine study of thyroid nodules since 2005, with four diagnostic standardized categories for CNB´s results: insufficient; benign; follicular proliferation (FOL, including follicular and oncocityc neoplasms); and malignant. Diagnosis of FOL was defined according to the presence of microfollicular patterned biopsies with scant or absent colloid, sometimes with minimal pleomorphism or discrete nuclear changes. This category could be equivalent to AUS/FLUS and FN/SFN, III and IV categories in BSRTC, encompassing undetermined diagnosis leading to surgical evaluation. We review surgical results in operated patients with diagnosis of FOL in previous CNB.

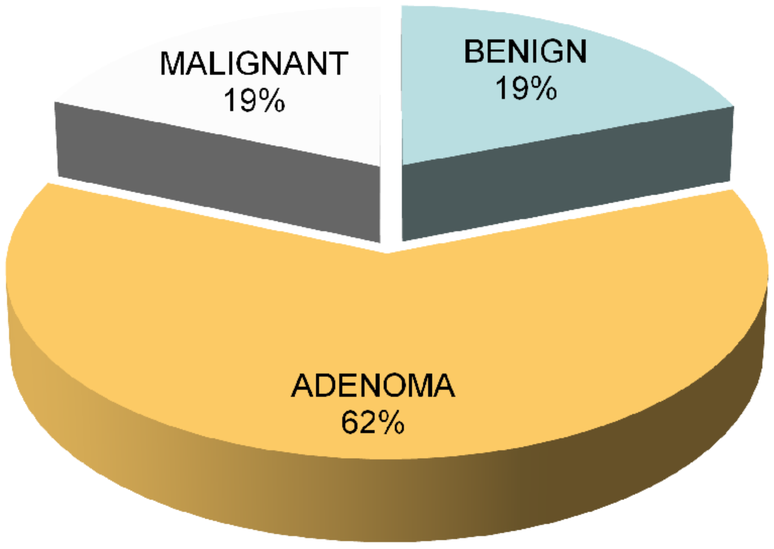
METHODS

We included 166 patients (33 men; 133 women), mean age, 52.8 years (+/-14.5) from 3.750 CNBs (207 FOL: 5.5%). All 166 cases underwent surgery, from October 2005 to December 2014. They included 102 diagnosed as pure follicular lesions and 64 oncocytic follicular proliferation. The false-positive rate, unnecessary surgery rate, and malignancy rate for the CNB patients according to the final diagnosis following surgery were evaluated.

RESULTS

	BENIGN	ADENOMA	MALIGN
n	32	103	31
Mean age (SD)	57.2 (13,5)	58.8 (14)	55 (15,8)
Nodular size (mm)	26.8 (18,1)	27.2 (13,7)	32.3 (11.8)
% males [a, b]	3.2 %	24.5 %	22.6 %
Solid nodules (>75%)	74.2 %	88 %	83.9 %
Mixed nodules [a,b]	22.6 %	11 %	9.7 %
Cystic nodules (> 75%)	3.2 %	1 %	6.5 %

[a] p<0.01 between Bening and Adenoma; [b] p<0.01 between Benign and Malign



102 Pure Follicular: 63 Adenomas; 9 FTC; 10 PCT FV; 1 PTC morular cribiform; 1 MTC; 18 Hyperplastic.

64 Oncocytic Follicular : 40 Adenoma; 7 Oncocytic FTC; 2 PTC oncocytic variant; 1 PDTC; 14 Hyperplastic

- In surgical specimens 32 patients (19.3%) had non-neoplasms (unnecessary surgery), all of which result in nodular hyperplasia.
- The remaining 134 nodules were true neoplasms, 31 of them (18.7%) malignant.
- Malignant included 16 follicullar carcinomas (FTC), 13 papillary carcinomas (PTC), 1 medullary carcinoma (MTC) and one poor-differentiated thyroid carcinoma (PDTC).
- In twenty-three cases there were incidentally discovered papillary carcinomas (1 to 12 mm of size) in the same or opposite lobe of the biopsied lesion. From 103 adenomas, 17 carried an incidental PTC (16.5%).
- Globally, there were 54 carcinomas with a CB of FOL (32.5%).

CONCLUSIONS

- CNB shows good precision in diagnosing follicular neoplasms, but as FNA, fail to distinguish adenomas from carcinomas, with a malignancy rate in biopsied nodule around 20%.
- Almost 20 % of thyroid nodules labeled as follicular proliferation in CNB, were hyperplasic lesions, and diagnostic mistake led to unnecessary surgery.
- We remark the frequent association of benign neoplasm (adenomas) with malignant lesions in the same thyroid gland (16.5%), supporting surgical treatment when this CB diagnosis is obtained.

References

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17 ECE
1099--EP
Endocrine tumours
Miguel Paja
DOI: 10.3252/pso.eu.17ece.2015
Poster presented at: ECE2015 16–20 May 2015 DUBLIN, IRELAND 17th EUROPEAN CONGRESS OF ENDOCRINOLOGY