

# Accuracy of repeated core biopsy (CB) after inadequate first CB in thyroid nodules

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## INTRODUCTION AND OBJECTIVES

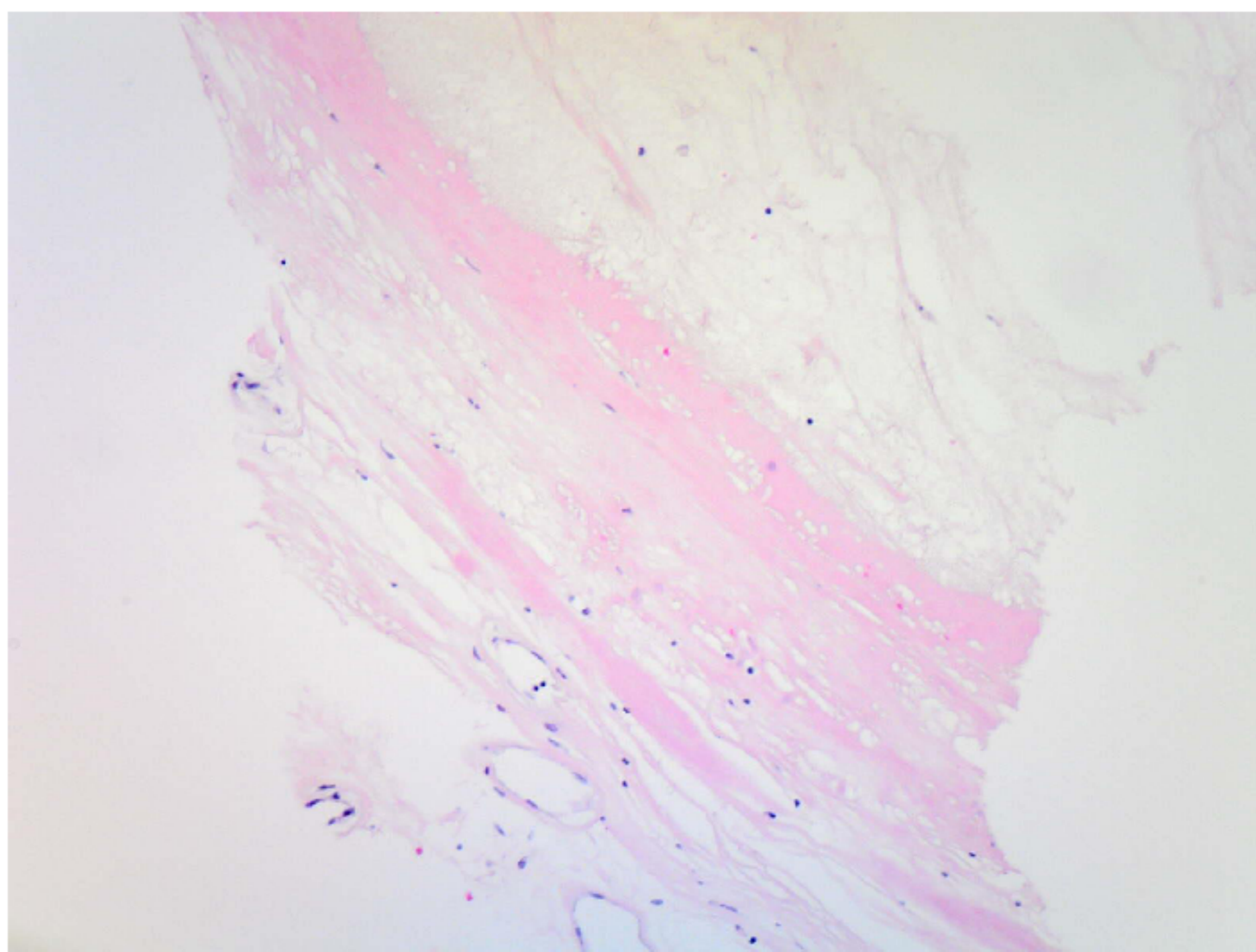
Diagnostic performance of thyroid FNA is hindered by non-diagnostic biopsies due to inadequate or scarce samples (first category of BSRTC).

International guidelines recommend repeating the FNA in these cases, with a yield rate about 50-60%.

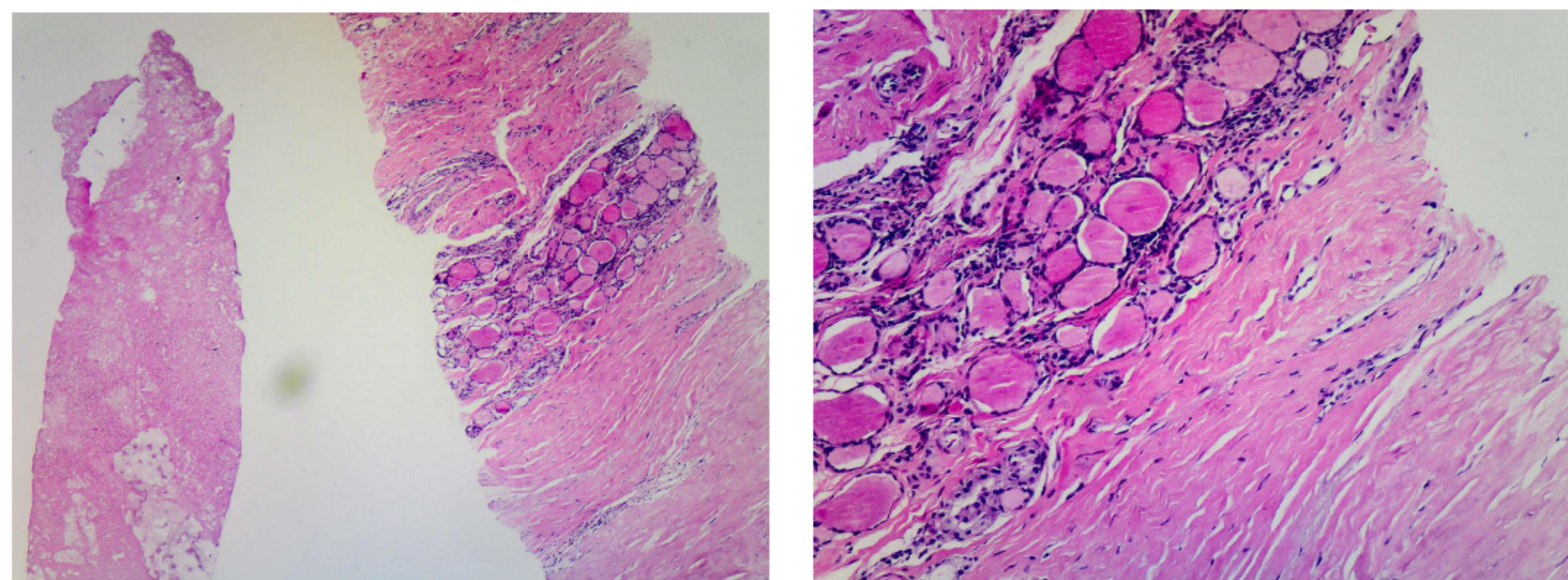
CNB has proved better results in these cases, but nothing has been published about in failed CB.

In Basurto University Hospital we use CNB for routine study of thyroid nodules since 2005. Here, we analyse our results in this setting.

Objective: To study the differences between nodules with inadequate and diagnostic thyroid Core Biopsy and the accuracy of repeating a CB after a previous inadequate result.



Fibrotic specimen from CB, useless for diagnosis



Second biopsy of the same patient, showing hyperplastic tissue next to fibrotic changes.

## METHODS

We include 3.972 CB along ten years (2005-2015) in 3.384 patients. CB were performed using an 18G spring-loaded device. We standardized four diagnostic categories: insufficient, benign, microfollicular proliferation and malignant.

Globally, 139 (3.5%) samples were considered inadequate for diagnosis, due to insufficient tissue, intense fibrosis (Figure) or bad processing. In 51 cases a second CB was performed.

## RESULTS

CB	INADEQUATE	ADEQUATE	p
n	139	3.833	-
Mean age (SD)	53.7 (15.2)	57 (14.6)	.012
% males	12,4	14,6	.06
Nodular size (mm)	20.6 (10.4)	25.9 (13.8)	<.001
Solid nodules (>75%)	50	70.5	<.001
Cystic nodules (> 75%)	21.7	5.4	<.001
Single nodule (%)	35.7	16.3	<.001
Isthmic localization (%)	19.5	7	<.001

Patients with inadequate CB were younger than patients with diagnostic biopsies. Mean nodule diameter was smaller in insufficient CB. Isthmic localization and cystic content were more frequent. They were more frequent in thyroids with solitary nodule. In 22 cases, all of them cystic nodules, simultaneous FNA was conducted, obtaining 11 diagnosis in cytological study, all benign.

In 51 cases a second CB was performed, being diagnostic in 48 cases (94.1%). Results of these 48 second CB were: hyperplastic tissue in 45 (Figure), follicular proliferation (FOL) in two and papillary thyroid cancer (PTC) in one. Surgery was performed in 10 of them: seven benign lesions, two follicular adenomas, both FOL in CB and one PTC, identical to CB.

## CONCLUSIONS

- Insufficient CB occurs in 3.5% of samples, more frequently in small solitary nodules of cystic content and localized in the isthmus.
- Second CB has 94.1% of successful sampling. Most nodules with non-diagnostic initial CB are benign. Combination of 2 thyroid CB allows a diagnosis in nearly all thyroid nodules.