

Contribution Of Cytopuncture In The Management Of Thyroid Nodules: Sharing Of Experience.

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Summary :

The objective: To compare the data from thyroid puncture with anatomo-pathological results in order to evaluate the effectiveness of thyroid puncture in the diagnostic and therapeutic approach to a thyroid nodule.

Material and methods :

This is a retrospective study of 102 patients with thyroid nodules classified Eu-Tirads 3,4,5 in whom FNA was indicated during the period between 2021 and 2022.

Results :

*Of the 102 patients with thyroid nodules:
72 patients with nodules classified as Eu-TIRADS 3 (70.5%)
22 patients with Eu-TIRADS 4 nodules (21.5%)
08 patients with Eu-TIRADS 5 nodules (8%)*

Result of the cytopuncture:

*Eu-TIRADS nodule category 3: 05 patients (7%) had suspicious cytology classified Bethesda IV.
Category of Eu-TIRADS 4 nodules: 07 patients (31%) had cytology suspicious for Bethesda IV and 01 patient (4%) had cytology suspicious for Bethesda V malignancy.
Eu-TIRADS nodule category 5: No patients had benign cytology, 05 patients (62.5%) had cytology suspicious for Bethesda IV and 03 patients (37.5%) had cytology suspicious for malignancy Bethesda V. (Figure 3: Cytological data of Eutirads nodules 3,4,5).*

Conclusion :

The use of cytopuncture has become essential in the management of thyroid nodules. A multidisciplinary approach combining clinic, imaging and cytology seems to be the most promising way to improve the diagnostic and therefore therapeutic strategy.

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I. Introduction :

Thyroid aspiration cytology plays an important role in the management of thyroid nodules. It is a minimally invasive examination which makes it possible to differentiate between the benign or malignant nature of the nodule and thus to adapt the therapeutic approach. Its sensitivity and specificity vary widely in the literature.

The objective of our study was to compare thyroid aspiration cytology data with anatomo-pathological results in order to evaluate the effectiveness of thyroid aspiration cytology in the diagnostic and therapeutic approach to a thyroid nodule.

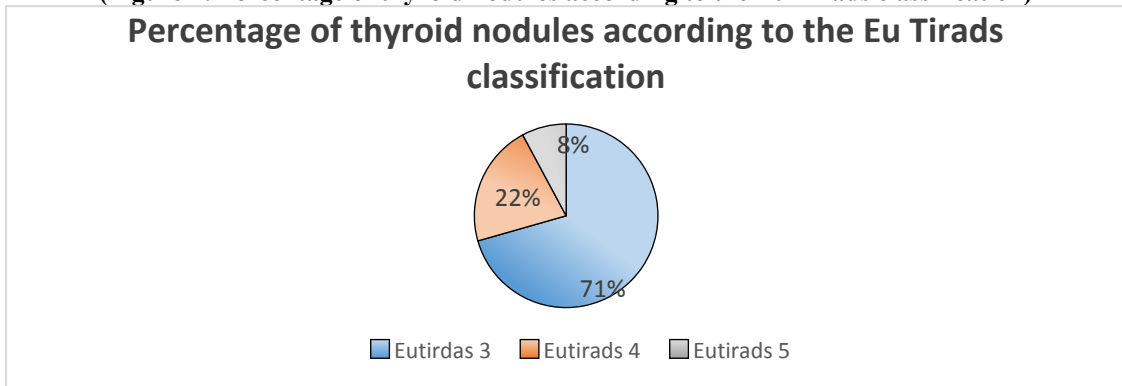
II. Material And Methods :

This is a retrospective study of 102 patients with thyroid nodules classified Eu-Tirads 3,4,5 in whom FNA was indicated during the period between 2021 and 2022.

III. Results :

Of the 102 patients with thyroid nodules:
72 patients with nodules classified as Eu-TIRADS 3 (70.5%)
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08 patients with Eu-TIRADS 5 nodules (8%)
Result of the cytopuncture:

(Figure 1: Percentage of thyroid nodules according to the Eu Tirads classification)

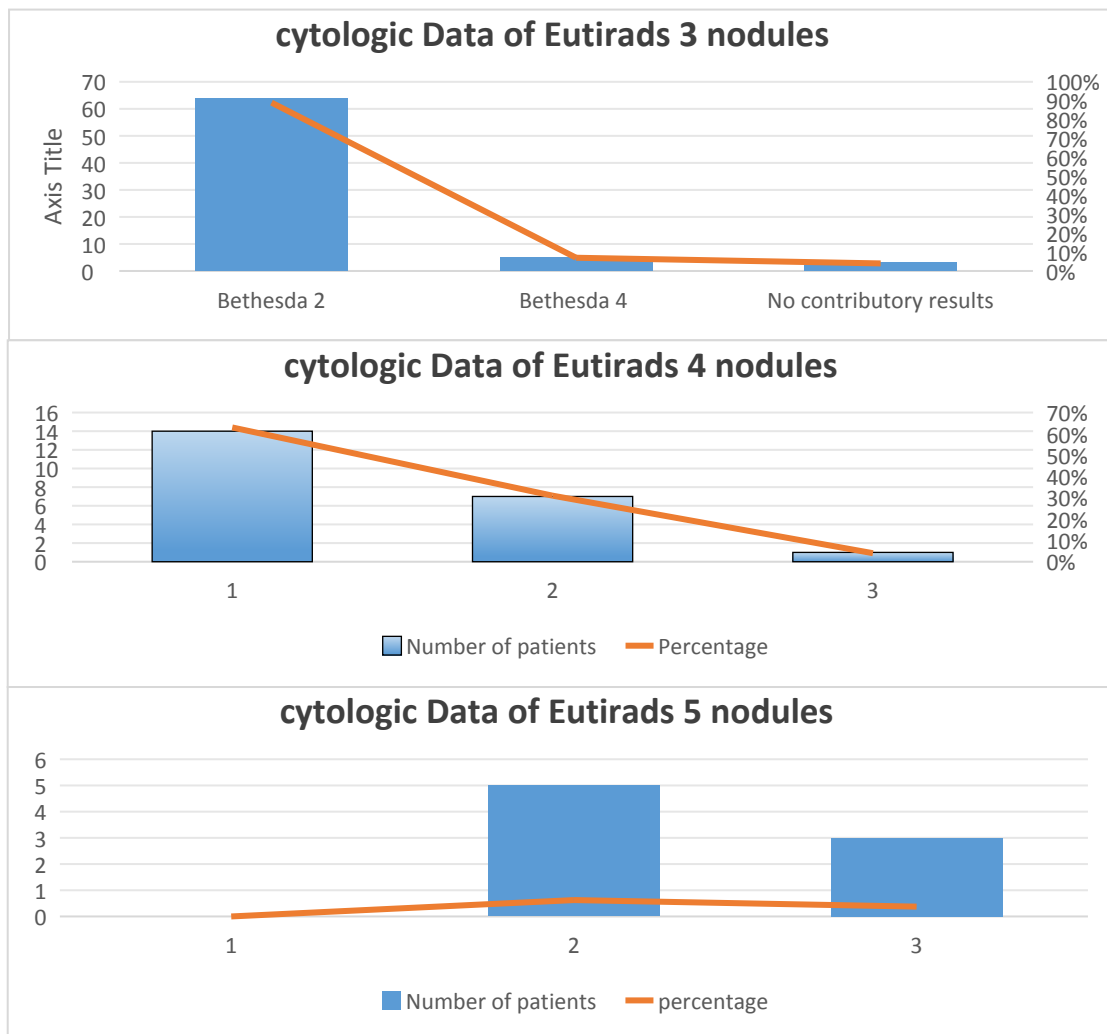


Eu-TIRADS 3 nodule category: 03 patients with non-contributory findings (4%), 64 patients (89%) had benign Bethesda II cytology and 05 patients (7%) had suspicious cytology classified Bethesda IV.

Category of Eu-TIRADS 4 nodules: 14 patients (63%) had benign Bethesda II cytology and 07 patients (31%) had cytology suspicious classified as Bethesda IV and 01 patient (4%) had cytology suspicious for Bethesda V malignancy.

Eu-TIRADS nodule category 5: No patients had benign cytology, 05 patients (62.5%) had cytology suspicious for Bethesda IV and 03 patients (37.5%) had cytology suspicious for Bethesda V malignancy.

(Figure 2: Cytological data of Eutirads 3,4,5 nodules).



After surgery:

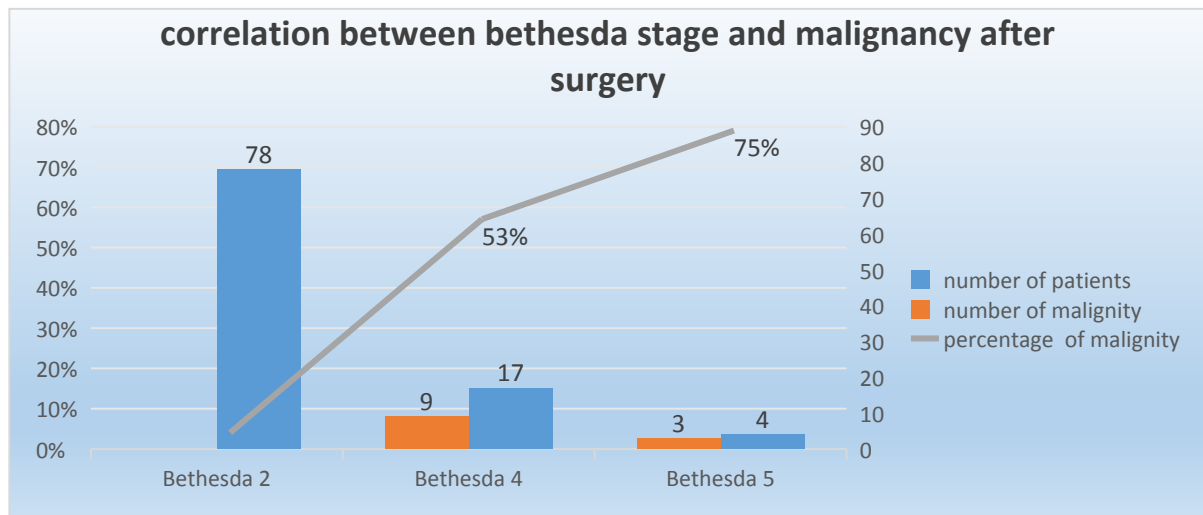
Of the 78 patients with benign Bethesda 2 cytology, we did not have any thyroid neoplasia on the pathological study of the surgical specimen.

Of the 17 patients with suspicious cytology classified Bethesda IV, we had 09 cases (53%) of thyroid neoplasia on the pathological study of the surgical specimen.

Of the 4 patients with suspicious cytology classified Bethesda V, we had 3 cases (75%) of thyroid neoplasia on the pathological study of the surgical specimen.

The sensitivity of thyroid aspiration was 90%; moreover, in 3% of cases this procedure was non-contributory.

(Figure 3: Bethesda Correlation – Malignancy After Surgery).



IV. Discussion :

Thyroid fine needle aspiration (FNA) has demonstrated its major contribution in the management of patients with thyroid nodules [1].

It is increasingly becoming a screening tool for thyroid cancer. Its advent has made it possible to reduce the number of interventions by 25 to 50% and to increase the incidence of cancers identified on an excision specimen by up to 30 or even 40% [2]. Indeed, only 14% of thyroid nodules resected were malignant on histology before the use of routine PAF, while this proportion rises to 50% (In our series 53% and 75% respectively for Bethesda nodules 4 and 5) if the excision was preceded by a prior cytological examination [3]. It can be done on a palpable nodule or ultrasound-guided for non-palpable or mixed-component nodules [4].

Its indications depend on the results obtained on ultrasound despite the fact that there is no universally accepted consensus. RUSS [5] proposed new recommendations for FNA based on the EU-TIRADS score and the size of thyroid nodules summarized in the table below

The size of the nodule indicates the cytopuncture			
≤10mm	> 10mm	> 15 mm	> 20 mm
Search for primary -distant metastasis -suspicious lymph node Score 5 if: -increase in size -juxta-capsular ≤2 mm -upper fleece -suspected multifocality -age less than 40	Eu- tirads 5	Eu-tirads 4-5	Eutirads 3 to 5 Simple cyst if compressive

The limits of PAF [7]: Well-differentiated gallbladder cancers are not identified by this method because their diagnosis is based on non-cytological criteria (intravascular tumor emboli, rupture of the thyroid capsule, lymph node metastasis), micro-cancers (not accessible) and large nodules (predominance of cystic and fibrosed forms). Note that this method does not in any way replace the extemporaneous histological examination carried out during the excision of a nodule considered malignant on cytopuncture.

The reliability of PAF has been demonstrated by several authors provided that its technique is rigorous and that the reading of the samples obtained is carried out by experienced cytologists.

According to a review of recently published data on guided thyroid cancer detection in the United States, the sensitivity was 76% to 98%, and the specificity was 71% to 100%, with a false negative rate of 0. % to 5%, and a false positive rate of 0% to 5.7% as well as an overall accuracy of 69% to 97% with the use of this method [8].

Practical implications:

- Fine needle aspiration plays a key role in the evaluation and surgical triage of patients with a thyroid nodule.
- The performance of PAF is variable and depends on many factors, in particular the experience of the clinician who performs the puncture as well as that of the cytopathologist who analyzes the material taken.
- The integration of molecular pathology into this technique will perhaps improve the performance of PAF.

V. Conclusion :

The use of cytopuncture has become essential in the management of thyroid nodules. A multidisciplinary approach combining clinic, imaging and cytology seems to be the most promising way to improve the diagnostic and therefore therapeutic strategy.

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