

Fine Needle Aspiration Cytology, Do cytology technicians make the difference?



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Topic: Thyroid cancer & Thyroid

Introduction

Fine needle aspiration cytology (FNAC) of thyroid nodules is the procedure of choice in the diagnostic approach of nodular thyroid disease. Despite showing a sensitivity of 83% and a specificity of 92%, many of the results are non-diagnostic. One of the factors that can contribute to this number is the proper procedure of the smear.

Objectives

To assess whether there are significant differences in the results of FNACs with and without the contribution of an expert Cytology Technician (CT).

Methods

All FNACs results were registered in the period of 2 consecutive years in our hospital, according to Bethesda classification. The results were distributed between 2 groups:

- Group A: 01/2013 to 12/2013 without CT support.
- Group B: 01/2014 to 12/2014 with CT support. The results were then analyzed and compared using the PASW statistics and Chi-square test.

Results

A statistical relationship between the presence of a CT and the Bethesda classification in the evaluation of FNACs was obtained (χ^2 test, $p < 0.001$). There were also a significantly more nodules with a non-diagnostic result in the Group A (χ^2 test, $p < 0.001$) than in Group B (33% versus 25% respectively).

The categories II (benign lesions) and IV (follicular tumors) had significantly more results in Group B (59.1% and 1.5%) when compared to Group A (53.0% and 0.6%), (χ^2 test, $p < 0.001$ for category II; $p < 0.02$ for category IV). The presence of a CT had an impact on results of FNAC, diminishing the number of non-diagnostic results and increasing the results of benign lesions and follicular tumors.

Group / Bethesda	I	II	III	IV	V	VI	Total
Group A	510	815	173	9	6	25	1538
Group B	384	928	205	23	12	17	1569
Total	894	1743	378	32	18	42	3107

Table 1 – Total results of FNACs sorted by group A and B

Conclusions

A CT should be integrated in the cytology team, if possible, in order to reduce the number of non-diagnostic results and consequently the number of patients that need to repeat the FNAC.

The reasons that probably contributed to decrease the number of non-diagnostic lesion were the more promptness in the smear preparation, better smear technique, the macroscopic recognition of inadequate samples and better communication between the CT and the one who performs the FNAC.

References:

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