

FINE-NEEDLE ASPIRATION CYTOLOGY IN THE MANAGEMENT OF THYROID NODULES: A PRELIMINARY RETROSPECTIVE REVIEW OF 53 CASES AT KING FAISAL HOSPITAL

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ABSTRACT

Introduction: This is a retrospective review of 50 thyroid nodules investigated by fine-needle aspiration cytology (FNAC). On clinical grounds alone, it is not easy to differentiate between benign and malignant lesions. The use of FNAC in the preliminary investigation of cases assisted in the clinical management of these nodules in ruling out malignancy and in helping to avoid unnecessary open biopsies and surgery. Its cost-effectiveness and rapidity of results and attendant relief of anxiety to the patient make it acceptable to both physician and patient.

Materials and Methods: 53 thyroid nodules were evaluated clinically and sampled by FNA using 23G and 25G needles and 10 ml syringes. Ethanol fixed and air-dried methanol –fixed smears were prepared for Papanicolaou and Diff-Quik staining, respectively. Stained preparations were evaluated on the light microscope.

Results: Cytodiagnoses included 24 nodular goitres, 19 colloid goitres, 5 cystic lesions, 1 hyperplastic lesion, 1 thyroiditis, and 1 fungal infection.

Conclusions: FNAC was useful in ruling out malignancy and avoiding unnecessary surgery. Benign thyroid nodules were more frequent than thyroid carcinoma. Thyroid nodules were more frequent in female patients than male patients with a ratio of 6:1. Further studies are required to unravel any related aetiological factors, if any.

Key words: fine-needle aspiration - thyroid nodules - lesions - goitre - nodular - colloid - malignant

RESUME

Introduction: Il s'agit d'une revue rétrospective de 53 nodules thyroïdiens investigués par cytologie après aspiration à l'aiguille fine (CAAF). Il est parfois difficile de faire la différence entre les lésions bénignes et malignes sur base clinique seulement. L'usage de la CAAF comme moyen d'étude de ces cas a été utile dans la prise en charge clinique de ces nodules, en éliminant la malignité et en évitant des biopsies à ciel ouvert et une chirurgie inutile. Son très bon rapport coût-efficacité, la rapidité des résultats et donc l'absence de l'anxiété en attendant ceux-ci font que cette méthode est bien acceptée aussi bien par le médecin que par le patient.

Matériels et Méthodes: 53 nodules thyroïdiens ont été évalués cliniquement et aspirés en utilisant une aiguille 23G et 25G ainsi qu'une seringue de 10ml. Des frottis humides fixés à l'éthanol et des frottis secs fixés au méthanol ont été préparés puis colorés par la méthode de Papanicolaou et au Diff-Quik. Les lames colorées ont été analysées au microscope optique.

Résultats: Les résultats de l'analyse cytologique comprenaient 24 goitres nodulaires, 19 goitres colloïdes, 5 lésions kystiques, 2 cas suspects de malignité, une hyperplasie, une thyroïdite et une infection mycosique.

Conclusion: La CAAF a été utile en éliminant la malignité et en évitant une chirurgie inutile. Les nodules thyroïdiens bénins ont été plus fréquents que les carcinomes thyroïdiens. Ces nodules thyroïdiens intéressaient plus souvent les femmes que les hommes avec une ratio de 6:1. Des études ultérieures sont nécessaires à la recherche de tout facteur étiologique s'il en existe.

Mots clé : Aspiration à l'aiguille fine - nodule thyroïdien - lésion - goitre - nodulaire - colloïde - malin - bénin - kystique - néoplasme.

INTRODUCTION

This is a preliminary retrospective review of 53 cases of thyroid nodules, evaluated clinically and cytologically with performance of fine-needle aspiration technique before clinical management options.

Thyroid nodules are very common disorders which have obvious cosmetic effect of large neck masses. The clinical presentation of thyroid nodules does not differentiate between benign and malignant lesions with certainty as it may mask or mimic neoplastic disease, so it raises the suspicion of cancer [1-3].

As an important aid in the investigation of thyroid nodules, fine-needle aspiration cytology (FNAC) can give clinically

important information for management of patients, and thereby lends itself into the first line of investigative sequence [1-6].

In addition, the cost-effectiveness of FNAC, being easy to perform, safe, cheap and rapid in getting results appeals favourably to both physician and patient [5-11].

Fine needle aspiration cytology results were useful to the attending surgeon in making options of management.

This was a retrospective review of the utility of fine-needle aspiration cytology of all thyroid nodules seen in the outpatient and investigated by FNAC over a period of two years.

MATERIALS AND METHODS

All the thyroid nodules were clinically evaluated by ENT

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Surgeons, who also performed the fine-needle aspirations (FNAs). FNAs were performed on 53 thyroid nodules employing 23G and 25G needles and 10ml syringes. Ethanol-fixed and air-dried-methanol-fixed smears were prepared for Papanicolaou and Diff-Quik staining, respectively. The stained preparations were cytologically evaluated on the light microscope.

RESULTS

Cytodiagnoses made included 24 nodular goitres, 19 colloid goitres, 5 cystic lesions, 2 suspicious for neoplasm, 1 hyperplastic lesion, 1 thyroiditis, and 1 fungal infection. Tables 1, 2 and 3 figures 1, 2 and 3 are illustrations and photomicrographs of the diagnoses.

Table 1: Cytodiagnoses of thyroid nodules

N=53

Diagnosis	Number of cases
Nodular goitres	24
Colloid goitres	19
Cystic lesions	5
Suspicious for neoplasm	2
Hyperplastic	1
Thyroiditis	1
Fungal infection	1
Total	53

The two cases of suspicious for neoplasm were later confirmed on histology as papillary carcinoma

Table 2: Thyroid nodules by sex

N=53

Sex	Number with nodules
Female	46
Males	7

Thyroid nodules show a female to male ratio of 6.5:1

Table 3: Thyroid nodules by age

Age range	Number of cases
11 -20 years	2
21 -30 years	8
31 -40 years	18
41 -50 years	13
51 -60 years	8
61 -70 years	2
71 -80 years	2

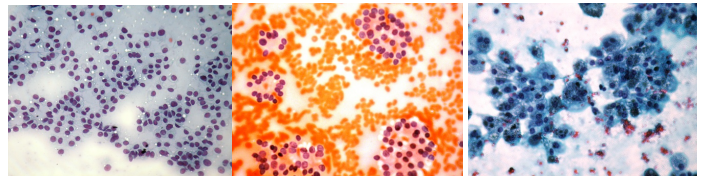


Figure 1: Photomicrographs of some benign lesions: A, Colloid goiter, Diff-Quik, X40; B, Nodular Goitre, PapX40; C, Cystic degeneration, PapX40.

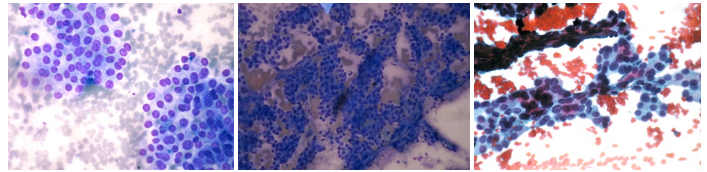


Figure 2: Photomicrographs of hyperplastic and suspicious lesions: D, Hyperplastic lesion, Diff-QuikX40; E, Suspicious for papillary neoplasm, PapX40, F, Suspicious for papillary neoplasm, PapX40.

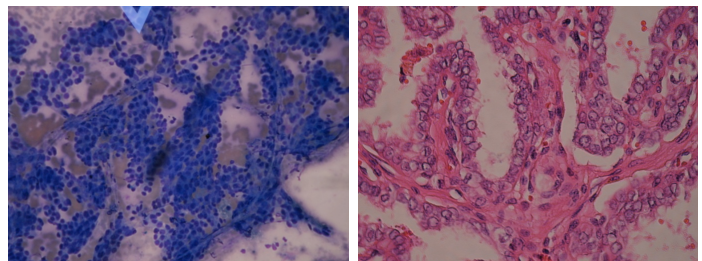


Figure 3: A, Cytology, Suspicious for papillary neoplasm, PapX40, B, Same case as A, Histology papillary carcinoma, H and E, X40.

DISCUSSION

FNAC was performed on 53 thyroid nodules, 51 were benign and 2 suspicious for neoplasm. The suspicious lesions were later confirmed malignant on tissue biopsy histology. There may be a prevalence of thyroid nodules in the general population, but the observed ratio in this study shows a predominance of the lesions in the female population. Patients may respond variably to the disfiguring effect of thyroid nodules, many by seeking medical attention. For clinical management, FNAC reduced and in the majority of the cases eliminated the need for excisional biopsies. The age of the patients ranged from 14 to 79 years. The age of the female patients ranged from 14 to 70 years, while the males ranged from 32 to 79 years. The two lesions suspicious for neoplasm, one was male and the other female. From this, it appears that not only are the lesions more frequent among females but that they also develop earlier in life among females than among males.

CONCLUSION

Fine needle aspiration cytology results were useful in making options of management. This study showed that the frequency of thyroid carcinoma is much less than the frequency of benign lesions. The study showed the prevalence of benign thyroid nodules,

predominantly nodular and colloid goitres. The ratio of nodules in females to nodules in males was 6.5:1. The use of FNAC reduced or eliminated anxiety and the need for open biopsies and surgery. Further studies are necessary for linking the prevalence of thyroid nodules to any aetiological factors.

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