Fine Needle Aspiration Cytology (FNAC) correlation vs. Histology in the Management of Thyroid Nodules. 3-year experience from District General Hospital.

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Background:

FNAC is currently the gold standard for preoperative diagnosis of clinically suspicious thyroid lesions. However, it has a reasonably low rate of definitive diagnosis with Thy5, meaning many diagnoses of thyroid cancer are only made following surgery, mainly hemi-thyroidectomy. We aim to present our experience at a district general hospital.

Method:

A total of 76 thyroid surgeries performed between July 2013 and September 2016 were studied. Case notes were reviewed and data was subsequently collected and transcribed onto a Microsoft Excel® database. Parameters were predetermined and in strict accordance with the 2014 British Thyroid Association guidelines [1]. Data analysis was carried out manually.

Results:

Mean patient age was 55.1 years and 80% were female. 100% (n=76) underwent preoperative FNAC: 35% (n=27) were non-diagnostic (Thy1), 15% (n=11) were non-neoplastic/benign (Thy2), 30% (n=23) had atypical features present (Thy3a), 16% (n=12) were follicular neoplasm suspected (Thy3f) and 4% (n=3) were suspicious of malignancy (Thy4). 16% (n=6) of Thy1/Thy2 cases were diagnosed as cancer postoperatively. Overall false negative 11% (n=8) and false positive 5% (n=4). Sensitivity 57.89% [95% CI 0.3350 to 0.7975]. Specificity 92.98% [95% CI 0.8300 to 0.9805].

References:

- [1] - Guidelines for the management of thyroid cancer, Third Edition, British Thyroid Association (2014).
- [2] - Allan R. Accuracy of FNA at identifying thyroid malignancy in Tayside. Scottish Universities Medical Journal. 2012.
- [3] - Sukumaran R, Kattoor J. Fine needle aspiration cytology of thyroid lesions and its correlation with histopathology in a series of 248 patients. Indian association of surgical oncology. 2014.
- [4] - Yeung MJ, Serpell JW. Management of the solitary thyroid nodule. Oncologist. 2008; 13(2): 105-112.

% of US reports with U classification mentioned

Suspicious features on ultrasound report (vascularity, calcification and size)

N=76

Discussion:

Recommendations: 1. Adoption of U classification reporting for better patient selection and histology correlation. 2. Patient and US review by member of neck lump/thyroid MDT prior to FNAC request. 3. Repeat FNAC for all Thy1 and Thy3a nodules, with local MDT discussion of borderline or non-diagnostic cytology. 4. Repeat all Thy2 in 3-6 months for continuity. 5. Use of core biopsies technique to minimise inadequate samples. 6. One stop neck lump clinics with the histopathologist present at time of FNAC. 7. Use of other technologies to enhance FNAC reporting including immunohistochemistry and cytogenetic analysis.

Conclusion:

Our results are comparable with both UK and international studies, regarding false negative rate (11% vs 1-10%) [2] [3] [4].

On re-audit the number of ultrasound reports containing a **U-classification** rose from 15% to 76% and **sensitivity of FNAC** rose from 57.89% to 71.43% [95% CI 0.2904 to 0.9633] after implementing recommendations.

FNAC Outcome Versus Surgical Histology

N=76