Incidental Thyroid Carcinomas versus Benign Thyroid Cases: A Clinico-Radiological Comparison

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Introduction/Objective: We aim to identify the clinicoradiological characteristics unique to incidental thyroid carcinomas (ITCs) in comparison to benign thyroid cases. Previous studies show a positive correlation between ITCs and a euthyroid state. Currently nodules greater than 4 cm (N>4cm) with or without a negative fine needle aspiration (FNA) are excised because of a higher risk of malignancy.

Methods/Case Report: A 6-year retrospective study was performed on 227 thyroidectomy specimens collected during 2017-2022. 146 patients were benign. 26 patients with a negative/absent FNA were found to have ITCs. 55 patients had malignant thyroid (MTs). Age, gender, compressive symptoms, thyroid hormone status, presence of nodules, number of nodules, N>4cm, suspicious radiologic findings, personal history of other malignancies, family history of thyroid cancer (FHTCA) and a family history of thyroid disease were analyzed between the benign and ITC groups. A t-test was utilized for numerical variables and a chi-square test for categorical values. For any significant correlations, a maximum likelihood estimate was used to calculate the odds ratio.

Results (if a Case Study enter NA): Incidence of ITC amongst all specimen was 11.4% (26/227). 32% (26/81) of all reported MTs were ITCs. Papillary thyroid carcinomas accounted for 92.3% (24/26) of ITCs, follicular carcinomas accounted for 7% (2/26). 3/26 patients with ITC, 4/146 patients with benign thyroid and 5/55 patients with MT had a FHTCA. We found a significant correlation between FHTCA and thyroid malignancy [MT + ITC; odds ratio = 4.11 (CI = 1.198 – 14.154)]. A FHTCA was associated with more than a 4 times likelihood of having ITC compared to those without a family history (odds ratio = 4.77) (CI [1 - 22.782]). Other variables did not show any statistically significant differences between the ITC and benign groups.

Conclusion: Although previous studies report a correlation between ITCs and a euthyroid status and N>4cm, our study didn’t confirm it. However, this may be due to our smaller sample size. In our patient population, an FHTCA was associated with significantly higher incidence of ITCs which may outline a subpopulation that should be considered for more aggressive screening. No other variables were statistically significant.

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