



Diagnostic lobectomy is not routinely required to exclude malignancy in thyroid nodules greater than four centimetres

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Abstract

Background: Surgical excision has been recommended as a diagnostic test for thyroid nodules ≥ 4 cm, due to the supposedly higher rate of cancer in larger nodules and the higher reported false-negative rates of fine-needle aspiration cytology (FNAC) testing ($>10\%$). The aims of this study are to determine the prevalence of thyroid cancer in nodules ≥ 4 cm, to examine if a relationship between increasing nodule size and malignancy rate was present and to study the accuracy of preoperative FNAC diagnosis.

Methods: Retrospective analysis of data from patients with thyroid nodules ≥ 4 cm undergoing surgical resection between 1994 and 2008. Malignancy rates, cytology results and indications for surgery were analysed.

Results: A total of 223 patients with thyroid nodules ≥ 4 cm underwent thyroid resection between 1994 and 2008. The overall prevalence of thyroid cancer was 7.2% (95% confidence interval (CI): 4.2–11.4%). The malignancy rate did not vary significantly with increasing nodule size. The sensitivity of FNAC was 93.8% (95% CI: 69.8–99.8%), while the specificity of FNAC was 62.2% (95% CI: 54.9–69.2%). The most common indicator for surgery was compression symptoms. A positive FNAC test was the most significant indicator of underlying malignancy, with a likelihood ratio of 2.5 (95% CI: 2.0–3.1%).

Conclusions: Many patients with large thyroid nodules undergo thyroidectomy for symptom relief alone, regardless of their FNAC results. In such patients where other clinical indicators for thyroidectomy are not present, a benign FNAC result can reassure both patient and surgeon that mandatory surgical excision is not needed to exclude malignancy.