INCIDENTAL THYROID NODULES: THYROID & ENDOCRINE CENTER Mode of Detection and Rate of Malignancy

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OBJECTIVE

The aim of this study is to identify the most common methods in which thyroid nodules are detected and to determine whether or not there is a correlation with the mode of discovery and the rate of malignancy.

INTRODUCTION

Thyroid nodules are highly prevalent with an estimated 4-7% of the population having a palpable nodule and as high as 67% with nodules detectable on US¹. The rate of thyroid cancer diagnosis has more than doubled over the last decade with a concomitant increase in the number of nodule FNAs performed. Much of the increase in thyroid cancer detection has been attributed to the incidental discovery of nodules during imaging for other indications.

METHODS

We conducted a retrospective medical record review of 495 consecutive patients referred to our clinic for thyroid nodule evaluation during the year 2012. Patients were evaluated by one of two ECNU-certified thyroidologists and ATA guidelines were followed in determining the need for FNA.

Method of Detection	Number (and Percentage) of Patients with Nodules
Physical Exam	122 (24.6%)
Patient Detected	75 (15.2%)
Incidental Imaging	298 (60.2%)
US for Abnormal TFTs/Symptons	127 (25.7%)
Nuclear Uptake Scan	7 (1.4%)
СТ	66 (13.3%)
Carotid Doppler	41 (8.3%)
Screening US	23 (4.6%)
MRI	19 (3.8%)
PET scan	10 (2.0%)
Other	5 (1.0%)
Total	495

Method of Detection	Number (and Percentage) of Patients with Malignant Nodules
Physical Exam	3 (12%)
Patient Detected	7 (28.0%)
Incidental Imaging	15 (60.0%)
US for Abnormal TFTs/Symptons	4 (16.0%)
СТ	3 (12.0%)
Carotid Doppler	5 (20.0%)
MRI	1 (4.0%)
PET scan	2 (8.0%)
Total	25

Method of Detection	Ratio (and Percentage) of Malignant Nodules
Physical Exam	3/122 (2.5%)
Patient Detected	7/75 (9.3%)
Incidental Imaging	15/293 (5.1%)
US for Abnormal TFTs/Symptons	4/125 (3.2%)
СТ	3/66 (4.5%)
Carotid Doppler	5/41 (12.2%)
MRI	1/19 (5.3%)
PET scan	2/10 (20.0%)

DISCUSSION

- The majority (60%) of nodules discovered were via incidental imaging. This high rate may be due to local practice patterns and demographics.
- The rate of cancer is similar in incidentally discovered nodules (5.0%) and non-incidentally discovered nodules (5.1%). This represents an overall relatively low rate of cancer in our group but within the published expected ranges.
- We included nonspecific symptoms and abnormal TFTs in the incidental group as the indication for US was not a clinically suspected nodule. This group had the lowest rate of malignancy among incidental nodules. In our population, US appears to be over-utilized for this uncertain indication.
- Among the incidentally discovered nodules, PET-detected nodules had the highest rate of malignancy, highlighting the importance of FNA of these cases.
- Physical exam, interestingly, was correlated with the lowest rate of malignancy.

CONCLUSION

- There is a large pool of clinically silent nodules awaiting incidental detection.
- US triage is essential to decrease the number of FNAs and unnecessary surgery.
- Physician palpated nodules had lower incidence of cancer compared to incidentally discovered nodules. While not consistent, this has been observed in other studies³.
- Incidental nodules need the same evaluation as palpable nodules 4,5.

FUTURE DIRECTIONS

We hope to combine our data with other geographic locations as well as diverse practice settings in order to determine if there is a consistent trend in the method of detection and rate of malignancy.

REFERENCES

- 1. Aspinall SR et al. The Surgeon. 2013 Apr; 11(2):96-104.
- 2. Cooper DS et al. Thyroid. 2009 Nov; 19(11).
- 3. Liebeskind, A et al. J Ultrasound Med. 2005 May; 24(5): 629-34.
- 4. Howlett DC et al. J Ultrasound Med. 2007 Oct; 26(10);1367-71.
- 5. Kroeker TR et al. Head Neck. 2013 June (ePub)