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EVALUATION OF THYROID NODULE IN PRIMARY CARE

Basem Abbas Al Ubaidi*

Consultant Family Physician, Primary Care, Kingdom of Bahrain.

Corresponding Author:- **Basem Abbas Al Ubaidi**
E-mail: bahmed1@health.gov.bh

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ABSTRACT
Palpable thyroid nodules occur in 4 to 7 % of the adult population, but nodules found incidentally on ultrasonography suggest a high prevalence (19% - 67 %). The majority of thyroid nodules are asymptomatic and benign (95%). Because about 5 % of all palpable nodules are found to be malignant; so our main primary care objective of evaluating thyroid nodules is to exclude thyroid gland malignancy.

INTRODUCTION

Thyroid nodules are common in the primary care, especially in women [1] although, the risk of thyroid malignancy is small, but still it should be considered in the differential diagnosis of any thyroid nodules in the adult age group [2].

Thyroid nodules can be palpated in 4% to 7% of the adult population [3] but the true incidence is much higher (19%- 67%), because many more thyroid nodules can be detected incidentally by ultrasonography or computed tomography [4].

Predisposing factors to develop thyroid nodules were Graves' disease [5], pregnancy [6], and Low iodine intake (hyper functioning toxic adenomas) [7].

While thyroid cancer is only represented 1% of all human malignancies, it also merely shows 5% to 15% malignancies at all thyroid nodules [8, 9].

Any patients with a thyroid nodule should investigate with thyroid ultrasound examination and thyroid-stimulating hormone (TSH), and then radionuclide scan must be done for patients with a low level of TSH. A solid thyroid nodule and thyroid nodules ≥ 1 cm in diameter should have further investigation by fine-needle aspiration (FNA) to rule out thyroid malignancy. Red Flags for suspected thyroid cancer are, positive radiation history of the head or neck, in extreme ages (<20 years or >65 years), in a patient with a history of multiple endocrine neoplasia (MEN) or familial papillary carcinoma [10] also male gender, rapid growth of nodules and symptoms of local invasion (dysphagia, neck pain, hoarseness) (table 1) [11-13].

Case Study

28-year-old female was concerned about progressive enlargement of painless mass on the right side of her neck that had been present for the last 4 years. Recently; she had symptoms of pressure symptoms on her the neck and difficulty in swallowing liquid and solid food, no other health problems; her medical history was unremarkable, and she was taking no medications. There was no family or personal history of thyroid disease and she had no from previous exposure to radiation.

On examination, there was 3cm mild, tender firm right thyroid nodule, a reasonable first step in evaluating the thyroid nodule was doing thyroid function test (TFT), and the test result was within normal limits. A chest film revealed no pathology. The second step was the ultrasound of the thyroid gland which localize lesions and improve the adequacy of fine - needle aspirates which showed a

nodule size larger than 3 cm, solid and hypo echoic with high suspicion of malignancy (figure 1).

The next step was fine-needle aspiration (FNA) which was done in the hospital with conclusive diagnosis of papillary carcinoma on thyroid biopsy (figure 2).

Radical right neck surgery and total thyroidectomy were performed. Care was taken during surgery to protect the parathyroid and the recurrent laryngeal nerves. Pathologic examination revealed non-metastatic papillary carcinoma.

The left lobe of the thyroid gland was the primary site; metastatic lesions had spread to the right lobe. There were no distant metastases. After the operation, the patient was given levothyroxine, 1 mg/d.

Case Discussion

The crucial objective when evaluating a thyroid nodule is to determine whether it is malignant. Figure 3 represents a algorithm for how to evaluating and when to treat thyroid nodule [12, 13].

Papillary carcinoma of the thyroid gland is slow growing in persons <40 years. Tumor extent most frequently occurs through lymphatic system to the cervical lymph nodes; which was not present in our case, a postoperative chest film was obtained; it revealed no extension of the carcinoma. Generally, papillary carcinoma outcome is good prognosis, while less favorable for those with follicular tumors and poorer for patients with undifferentiated tumor. Papillary carcinoma constitutes 86%, follicular carcinoma 9%, medullary carcinoma 2% and undifferentiated anaplastic carcinoma only 1% of all thyroid malignancies [13, 14].

Table 1. Red flag for suspected cases of thyroid cancer

Male gender
Extremes in age (younger than 20 years and older than 65 years)
Rapid growth of nodule
Symptoms of local invasion (dysphagia, neck pain, hoarseness)
History of radiation to the head or neck Family history of thyroid cancer or polyposis (Gardner's syndrome)

Fig 1. Thyroid ultrasonographywith hypo echoic, solid, 3 cm in diameter

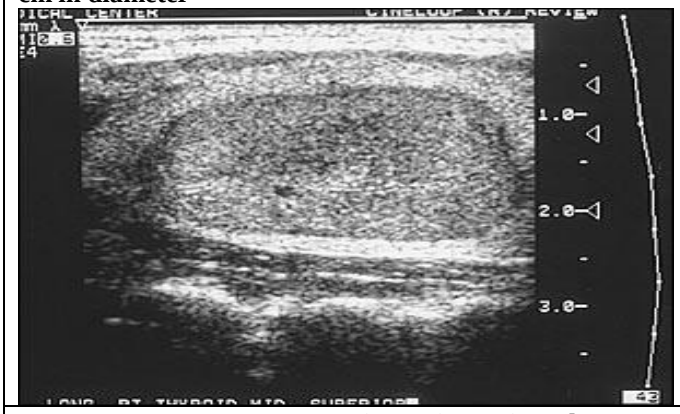


Fig 2. Papillary carcinoma of thyroid nodule

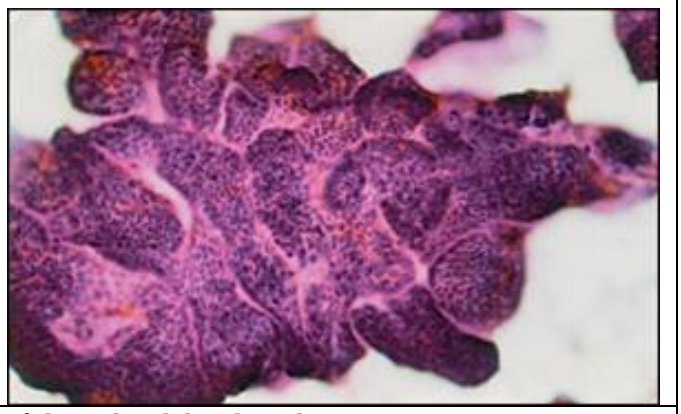
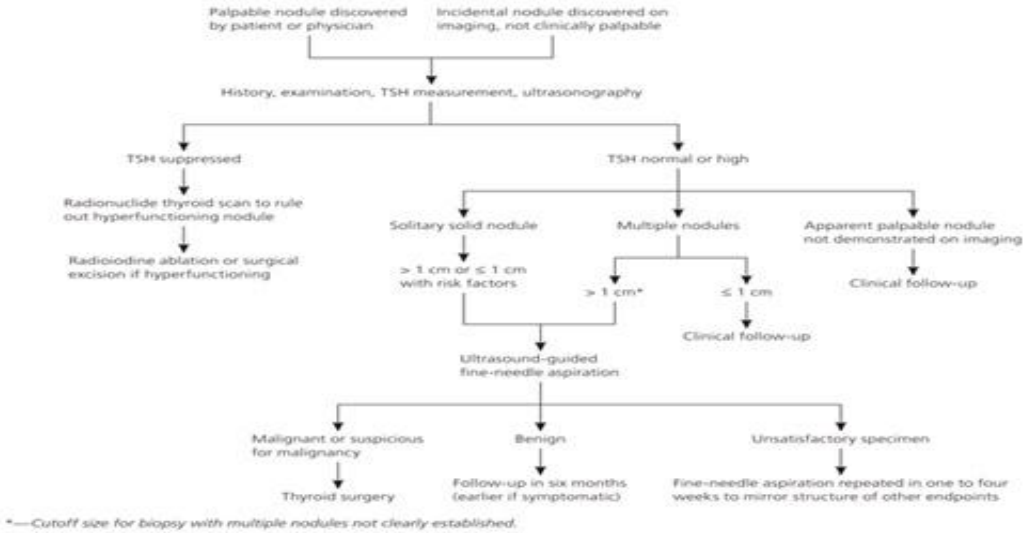


Fig 3. Diagnosis and treatment of thyroid nodules algorithm



CONCLUSION

1st. step in evaluating thyroid nodule is to measure thyroid function test (TFT).
2nd. Step is to thyroid ultrasound (US).
3rd. Step is to fine needle aspiration (FNA).
4th. Step If the pathology is malignant or suspicious to malignancy, so surgical removal of the affected thyroid lobe or lobes is recommended.

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CONFLICT OF INTEREST:

The authors declare that they have no conflict of interest.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

REFERENCES

1. Cooper DS, Doherty GM, Haugen BR, *et al*. (2010). American thyroid Association (ATA) Guidelines Taskforce on thyroid nodule and Differentiated thyroid Cancer. Revised American thyroid Association management guidelines for patients with thyroid nodules and differentiated thyroid cancer. *Thyroid*, 19(11), 1167–1214.
2. Gharib H, Papini E, Paschke R, *et al*. (2010). AACE/AME/ETA Task Force on thyroidnodules. American Association of Clinical Endocrinologists, Associazione Medici Endocrinologi, and European thyroid Association medical guidelines for clinical practice for the diagnosis and management of thyroid nodules: executive summary of recommendations. *J Endocrinol Invest*, 33(5), 51–56.
3. Stang MT, Carty SE. (2009). Recent developments in predicting thyroid malignancy. *Curr Opin Oncol*, 21(1), 11–17.
4. Castro MR, Gharib H. (2005). Continuing controversies in the management of thyroidnodules. *Ann Intern Med*, 142(11), 926–931.
5. Belfiore A, Russo D, Vigneri R, Filetti S. (2001). Graves' disease, thyroidnodules and thyroid cancer. *Clin Endocrinol (Oxf)*, 55(6), 711–718.
6. Kung AW, Chau MT, Lao TT, Tam SC, Low LC. (2002). The effect of pregnancy on thyroidnodules formation. *J Clin Endocrinol Metab*, 87(3), 1010–1014.
7. Erdoğan MF, Küçük NO, Anil C, *et al*. (2004). Effect of radioiodine therapy on thyroidnodules size and function in patients with toxic adenomas. *Nucl Med Commun*, 25(11), 1083–1087.
8. Tee YY, Lowe AJ, Brand CA, Judson RT. (2007). Fine-needle aspiration may miss a third of all malignancy in palpable thyroid nodules: a comprehensive literature review. *Ann Surg*, 246(5), 714–720.
9. Marsh DJ, Learoyd DL, Robinson BG. (1995). Medullary thyroid carcinoma: recent advances and management update. *Thyroid*, 5(5), 407–424.
10. Malchoff CD, Sarfarazi M, Tendler B, Forouhar F, Whalen G, Malchoff DM. (1999). Familial papillary thyroid carcinoma is genetically distinct from familial adenomatous polyposis coli. *Thyroid*, 9(3), 247–252.
11. Walsh RM, Watkinson JC, Franklyn J. (1993). The management of the solitary thyroid nodule: a review. Management of a solitary thyroid nodule. *N Engl J Med*, 328, 553–9.
12. Weiss RE, Lado-Abeal J. (2002). Thyroid nodules diagnosis and therapy. *Curr Opin Oncol*, 14(1), 46–52.
13. Knox MA. (2013). Thyroid Nodules *Am Fam Physician*, 88(3), 193-196.
14. http://www.guideline.gov/content.aspx?id=15606.