ULTRASONOGRAPHY A USEFUL ADJUNCTIVE IN MANAGEMENT OF THYROID NEOPLASMS

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Abstract : Fine needle aspiration cytology has been the gold standard of diagnosis in case of thyroid neoplasm. However ultrasonography of thyroid neoplasm is a useful guide for an operating thyroid surgeon. We in our study evaluated patients of thyroid neoplasm with USG thyroid & studied its role in the therapeutic management of neoplasm. In our study of 10 patients of thyroid neoplasm we found USG of the thyroid neoplasm as a valuable guide in management.

Keywords : Ultrasonography; thyroid neoplasm.

INTRODUCTION

Neoplasm of thyroid may be benign or malignant. The only diagnostic modality which differentiates the two is FNAC of the lesion. USG of the thyroid helps in measuring the tumor size, diagnosing multinodularity, excluding contralateral disease. Ultrasonography can also suspect malignancy in a lesion on the basis of certain sonography characteristics, and further categorize into papillary, follicular, anaplastic, etc; e.g. Papillary has solid hypoechoic appearance with tiny micro calcification on USG, while as follicular has irregular tumor margins and thick irregular halo on USG appearance.^{1,2,3} So the basic use of sonography for the evaluation of nodular thyroid is to

- ❖ Determine location of palpable neck mass. (e.g. thyroid or extra thyroid).
- ❖ Characterize benign or malignant nodule features.
- ❖ Detect occult nodule in patient with history of head and neck irradiation or MEN II syndrome.
- ❖ Determine extent of known thyroid malignancy.
- ❖ Detect residual, recurrent, or metastatic carcinoma.
- ❖ Guide fine needle aspiration of thyroid nodule or cervical lymph node.^{1,2}

MATERIAL AND METHODS

The study included 10 patients with thyroid mass on clinical palpation. The patients were of all ages, gender was no bar. USG of the neck was done in all 10 cases, and subsequently USG guided

FNAC was done. Depending on the cytology and USG management was contemplated. USG was done with high frequency linear 8-12Mhz high resolution transducer which provided both deep ultrasound penetration up to 5cms and high definition images with a resolution of 0.7 to 1mm. The USG was done typically in supine position with neck extended and a small pad kept under shoulders for better exposure of neck. The thyroid was examined both in longitudinal and transverse position

RESULTS AND OBSERVATIONS

The 10 patients of thyroid neoplasm in whom USG was done, four had colloid adenoma; three were having papillary carcinoma with one having cystic degeneration in papillary carcinoma, one patient had anaplastic carcinoma & two were having follicular carcinoma. Of the four patients of colloid adenoma three had cystic degeneration within the colloid. The neoplasm was small in size and USG guided aspiration, intralesional ethanol and subsequent suppression therapy could have helped. Three patients were diagnosed as papillary carcinoma thyroid, one with papillary carcinoma had small node in central compartment (level VI), one node in level IV, which were not detected clinically but were picked up by USG. USG of this particular neoplasm was also suggestive of papillary carcinoma because of tiny calcifications besides revealing multifocality not clinically palpable. USG guided biopsy of thyroid lesion as well as node were +ve for papillary carcinoma. Third patient with papillary carcinoma appeared clinically cystic. USG revealed a cyst with a solid tissue at the

Fig I : USG Picture of a thyroid cyst.

Fig II : Calcification & lymphadenopathy seen in a case of papillary carcinoma on USG thyroid

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base of cyst. USG guided FNA was done which revealed papillary carcinoma with cystic degeneration. Patient with anaplastic carcinoma had a hard mass on clinical examination and adherence clinically to the trachea no neck nodes were palpable. USG was done which revealed irregular mass in thyroid with capsular breach and level II, III, IV lymph nodes. USG guided FNAC was +ve for anaplastic carcinoma for the primary & the secondaries. In the remaining two patients with follicular neoplasm one had only one swelling palpable clinically with another small being detected by USG

DISCUSSION

Although FNA has become the primary diagnostic method for evaluating clinically palpable thyroid nodules.¹ High resolution sonography has three primary clinical applications.

- ❖ Detection of thyroid and other cervical masses before and after thyroidectomy.
- ❖ Differentiation of benign and malignant masses on the basis of sonographic appearance.
- ❖ FNAC guidance.¹

Although sonographic appearance of the lesion was suspicious of malignancy we in our study relied on FNA as the gold standard diagnostic modality but USG definitely made us wiser as far as therapeutic management was concerned. Similarly USG thyroid has been found helpful in detecting malignancy in patients of graves disease by Won Bae Kim while screening patients of graves disease.⁴ The patients with cystic degeneration of colloid adenoma had small swellings which could have been managed conservatively by USG guided aspiration of cyst followed by suppression therapy but due to lack of compliance & follow-up had to opt for surgery. A situation like this can be helped by USG and conservative management can be attempted. Neck nodes which are picked up in case of papillary carcinoma changed our management from near total thyroidectomy to thyroidectomy with selective neck dissection. Same was true for anaplastic carcinoma where USG upgraded the stage of the tumor and its subsequent management. Patient with cystic degeneration of papillary carcinoma could have been easily labelled as colloid cyst by routine FNAC however USG picture and subsequent USG guided FNA of the solid lesion at the base of cyst revealed papillary carcinoma. Thus USG of the thyroid lesion and subsequent USG guided FNA not only changed the diagnosis but also management from lobectomy to total thyroidectomy.

Two patients had follicular adenoma. Clinically only one swelling was palpable and one clinically non palpable swelling was detected by USG. USG of one of them reported colloid in one lobe with another lesion in other lobe reporting a follicular adenoma. It was only because of USG guided FNA of clinically non palpable lesion that follicular neoplasm was diagnosed and surgery was tailored as per FNA. Neven Matesa while evaluating patients of solitary thyroid nodule for malignancy found that among patients with solitary thyroid nodule on physical examination, about 50% have multiple nodules when evaluated by USG.⁵

CONCLUSION

Though USG thyroid cannot supersede FNAC as diagnostic modality in thyroid neoplasm but it can be a useful adjunctive in the management of patient as we observed in our study. Further more USG guided FNAC is more target oriented and reliable than routine FNA as clinically non palpable lesion can be detected as well as aspirated for cytology.

REFERENCES

1. Luigi Salbiati, J. William Charboneau, E. Meredith James, Ian D. Hay. *The Thyroid Gland In Diagnostic Ultrasound* by Carol M. Rumack, Stephanie R. Wilson, J. William Charboneau Ed 2nd, vol 1 Mosby Publications 1998, 703-729.
2. David m. Yousem, Alice M. Scheff. *Thyroid and Parathyroid In Head and Neck Imaging* by Peter M. Som, Hugh D. Curtin Ed 3rd vol 2 Mosby Publications 1996 952-975.
3. *Tumours of the Thyroid and Parathyroid glands In Stell and Maran's Head and Neck Surgery* by John C. Watkinson, Mark N. Gaze, Janet A. Wilson Ed 4th, Butterworth Heinemann 2000 459-485.
4. Won Bae Kim, Seong-Min Han, Tae Yong Kim et al *Ultrasonographic screening for detection of thyroid cancer in patients with graves disease. Clinical endocrinology* jun 2004 vol 60, 719-725.
5. Neven Matesa, Irena Tabain, Zvonko Kusic. *The risk of thyroid malignancy in patients with solitary thyroid nodule Versus Patients With Multinodular Goitre. Acta Clin Croat* 2005; 44: 7-10.

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