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MALIGNANT THYROID DISEASE: A REPORT FROM ONE MAJOR HOSPITAL IN BASRAH

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Summary

This is a retrospective study, reviewing all surgically treated thyroid conditions in the period between September 1998 to September 2001. The results showed that the incidence of malignant thyroid conditions is 6.6%, and that papillary carcinoma is the most common thyroid cancer having an incidence of 82%. All patients presented with the complaint of neck swelling, in no patient manifestations of systemic dissemination found. Fine needle aspiration cytology was available for 11(39%) patients and was diagnostic in 7(63%) and highly suspicious in 4(37%). The number of re-operations was 9 (32%) and was always due to no use of FNAC in patients with multi-nodularity of one lobe. Thyroid carcinoma is not uncommon in our district. Preoperative diagnosis by more use of FNAC will decrease the incidence of re-operations that are more complicated than first operation.

Introduction

Primary malignant thyroid conditions are classified into differentiated thyroid cancers, medullary thyroid carcinoma, anaplastic thyroid carcinoma, and primary lymphoma. Although one of the rarest forms of cancer, they are the most frequent endocrine tumors. Its incidence varies geographically around the world from 0.9/100 000 men and 2.4/100 000 women in Britain to 8.8/100 000 men and 18.2/100 000 women in Hawaii [1]. Differentiated thyroid cancers, which include papillary and follicular types, are considered among the most curable of human cancers. Although their causes are not very clear, childhood exposure to radiation is the best known etiologic factor[1]. Medullary thyroid cancer (MTC) on the other hand, arises from C cells and secretes calcitonin, which is regarded as a tumor marker. MTC may be sporadic and presents as single firm thyroid nodule, or may be inherited either alone or as a component of multiple endocrine neoplasia (MEN) type IIA or IIB with high incidence of multicentricity. MTC spreads early to cervical lymph nodes and may metastasize to liver, lungs, or bones. If a patient is diagnosed as having MTC, he

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should have his family screened and should be tested biochemically for pheochromocytoma before thyroidectomy. Undifferentiated cancers constitute only 1-2% of thyroid cancer [2]. They affect elderly patients and carry an extremely poor prognosis. Primary malignant lymphoma of the thyroid often is associated with Hashimoto's thyroiditis.

When presented as a single thyroid nodule, a preoperative tissue diagnosis is highly recommended for the planning of the best surgical procedure and decreases the rate of completion thyroidectomy. Fine needle aspiration cytology (FNAC) is safe and inexpensive and is regarded as the most important advance in the management of thyroid nodule [3]. Its accuracy ranges from 70% to 90%, and has 5% and1-2% false negative and false positive rates respectively [2].

It should be the initial diagnostic test for the euthyroid patient with a single thyroid nodule and is the primary diagnostic test for multinodular goiter in conjunction with measurement of TSH level. Ultrasound can differentiate solid from cystic nodules, give an idea about the number and size of nodules, and the presence of calcification[4]. Ultrasound guided fine needle aspiration cytology is also a useful diagnostic method in non-palpable and difficult to palpate thyroid masses [5]. Completion thyroidectomy is described as re-exploration of the neck to remove the contra-lateral thyroid lobe and any thyroid tissue that remains after less than total thyroidectomy[6,7]. Although reported to improve the prognosis in differentiated thyroid cancers the stage of which is more than Pt I [8], completion thyroidectomy is associated with increased risk of damage to both the recurrent laryngeal nerve and the parathyroid glands.

After completion thyroidectomy, Chaot-TC et al reported an incidence of permanent and temporary hypo-parathyroidism of 2.8% and 5.6% respectively and of permanent and temporary recurrent laryngeal nerves injury of 2.8% and 8.5% respectively [9].

During operation, decision regarding the extent of resection can be improved by frozen section with an accuracy of 95%[4,10]. Frozen section is a cost-effective procedure and is necessary when fine needle aspiration cytology result is equivocal or reports follicular cell [11]. In one report 40% of follicular cell carcinoma were positively identified by frozen section with a false positive rate of 0.2%(11/13).

The aim of this study is to elucidate the incidence and types of thyroid cancer among surgically treated thyroid disease and the methods used in its diagnosis and management.

Patients and Methods

This is a retrospective review of files of all patients admitted to Saddam teaching hospital for surgical treatment of various thyroid diseases in the period between September 1998 and September 2001. In addition to clinical findings, ultrasound examination and fine needle examination were the methods used in the evaluation of the thyroid gland.

Results

There were 423 patients treated surgically for various thyroid conditions, of which only 28 patients proved to have malignant thyroid diseases, making an incidence of 6.6% (Fig1).

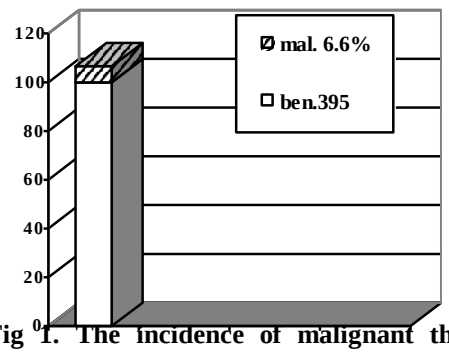

Fig 1. The incidence of malignant thyroid disease

Papillary cancer was the most common (n= 23 pt) which makes an incidence of 80%(Fig2).

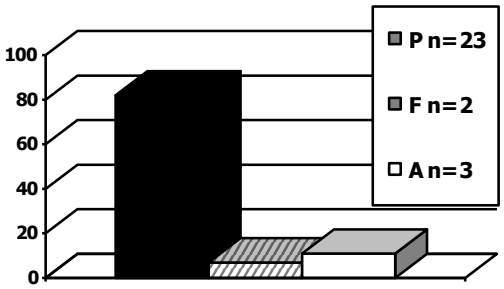

Fig 2. The incidence of various thyroid malignant tumors.

Females (n=24) were more affected than males (n=4) with a female/ male ratio of 6/1. The mean age of the patients was 40 years. All patients presented with neck swelling. Ultrasound showed that thirteen patients had multinodular goiter, 10 had multinodularity in one lobe, and 5 had single thyroid nodule. Fine needle aspiration cytology was used in only 11 out of 28 patient diagnosed as malignant thyroid conditions (Fig3).

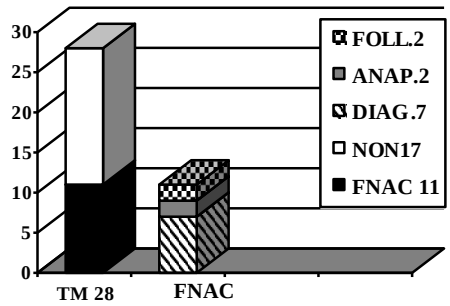

Fig 3. The results of FNAC in the diagnosis of thyroid malignant conditions.

It was diagnostic in 9 patients (7 papillary and 2 anaplastic) and in two it showed follicular cytology. Re-operation rate (completion thyroidectomy) was 32% (9 patients out of 28) and was for those patients presented with multi-nodularity in one lobe and for whom no preoperative FNAC was done (8 pt). These patients were treated by lobectomy and isthmethectomy and were proved by paraffin sections to have papillary thyroid cancer. Another patient treated primarily by subtotal thyroidectomy and proved to have follicular carcinoma. The mean duration of follow up was 13 months. There were two bilateral recurrent laryngeal nerve injuries. Both patients needed tracheostomy. One of these patients died after three weeks.

Discussion

Although rare, thyroid cancer is reported to be the most common endocrine malignant condition. In most reports, it constitutes less than 14% of surgically treated thyroid condition [13]. This is in consistent with the present report of 6.6%. Females are affected more than males with a F/M ratio more than 2.5/1 [2,9,14]. The findings of this report of 6/1 is again within the general report. Papillary carcinoma was found in 23 pt out of 28. This makes an incidence of around 80%. This predominance of papillary cancer has also been reported by Bisi et al [13], Jaffiol et al [14], and Roeher et al [15]. Fine needle aspiration cytology is of prime importance in the diagnosis and further planning in the management of thyroid cancer patient, and it is the most cost effective test [10]. Unfortunately it was used in 50 pt out of 423 surgically treated thyroid patients. It was able to accurately diagnose 9 out of 11 patient as carcinoma (7 PTC and 2 AC) and was able to show follicular cell cytology in further tow cases that were proved to have follicular carcinoma by the permanent paraffin section. Other workers [2,3,01] have also reported this accuracy.

Unlike papillary carcinoma, which spread mainly by lymphatic, follicular carcinoma spread by haematogenous route to lungs, bones, and liver and it has a slightly worse prognosis than does PTC. Large tumors, capsular invasion, distant metastasis, are indications for total thyroidectomy and lifelong hormone suppression with or without

radioablation. In this report the number of follicular thyroid cancer was limited (2/28), and in both total thyroidectomy was done because of large tumor mass at presentation.

One of the patients sustained bilateral recurrent laryngeal nerve injury and died three weeks postoperatively due to wide spread dissemination. The second patient was sent for radioablation and hormone replacement therapy. One patient with locally extensive anaplastic carcinoma was treated by isthmethectomy as a palliative treatment to prevent pressure on the trachea. Another tow patients with anaplastic carcinoma were treated by total thyroidectomy. All three patients were alive at the time of writing this report. Out of 23 patient proved to have papillary cancer by paraffin section, only 7 patients were subjected to preoperative FNAC. This has resulted in a high incidence (32%) of reexploration rate (completion thyroidectomy). Second exploration of the neck to completely remove any thyroid tissue is indicated in papillary cancer of more than 1 cm because of high incidence (60% to 80%) of multicentricity. It is also indicated in papillary cancer of tall cell variant, and in follicular cell carcinoma with macro-angioinvasion which is associated with high mortality (30%) [12,15,16,17]. Although completion thyroidectomy is reported to be associated with high incidence of recurrent laryngeal nerve injury and hypoparathyroidism [6], this was not reported in this study which may be explained by the limited number of patients. Fine needle aspiration cytology can be strengthened by ultrasound guidance in non-palpable or difficult to palpate thyroid nodules [5,18]. It is also helpful in cases of ultrasonically detected microcalcification [19], and in cystic lesions with papillary excrescence or the calcified node in cyst sign [12].

Although frozen section is unnecessary when FNAC shows adequate cytology result[17], it is of great benefit in suspicious cytology of papillary cancer [16,20], in follicular cytology (accuracy approaches 70%) [17], in the decision regarding clear margin and to exclude multicentricity. Frozen section was not used in this study because of limited facilities.

Conclusion

Thyroid cancer is not uncommon in our district and probably it is on the increase. Fine needle aspiration must be used more routinely and should be guided by ultrasound whenever indicated to decrease the rate of second exploration of the neck. Frozen section facilities should be made ready during operation on the thyroid specially when the preoperative diagnosis is not settled by other methods.

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