

Introduction

Thyroid cancer is the most common Endocrine malignancy, excluding ovarian cancer with the highest mortality¹. About 98% of thyroid cancers are of the differentiated type². Thyroidectomy is the primary treatment for patients with differentiated thyroid cancers (DTC). However, the extent of surgery remains controversial with strong support for total thyroidectomy and its presumed disease control benefits³⁻⁷. In contrast advocates of partial thyroidectomies also found equivalent disease control but lower hazard of parathyroid and recurrent nerve injury⁸⁻¹⁰.

Thus extent of primary thyroidectomy for patient with DTC remains controversial due to lack of prospective randomized controlled trials comparing the outcome associated with different types of thyroidectomies¹¹.

The aim of the present study was to compare the outcome of different types of thyroidectomies for patients with malignant thyroid lesions treated surgically at King Khalid University Hospital, Riyadh.

Materials and Methods

This is a retrospective study of consecutive patients with different thyroid disorders seen at surgical clinics at King Khalid University Hospital from January 1990 to December 1997. The final histological diagnosis and the extent of surgical therapy of 428 patients who underwent surgery

were reviewed. Only patients who underwent surgery and their final histological diagnosis could be traced were included in the study. Patients with DTC (Papillary and follicular) were further analyzed, focusing on those who developed recurrence after surgery, clinically as well as cytological confirmation. The data were analyzed using SPSS version 12 (Statistical package of software), percentages for different types were obtained using frequency table.

Results

A total of 512 medical records of patients with thyroid disorders were reviewed. Eighty four patients were excluded from the study; 73 patients did not have any surgical intervention and in 11 patients histological results could not be traced. In the remaining 428 patients (study population), there were 390 females and 38 males with a mean age of 41.7 (range 12-70) years. Forty eight patients (11.2%) had malignant thyroid lesions in the final histological diagnosis (**Table 1**), 36 (75%) had papillary carcinoma and 6 (12.5%) follicular type (**Table 2**). Regarding surgical treatment offered to those who had malignant thyroid lesions, 27 patients had lobectomy and 15 had total thyroidectomy (**Table 3**). Six patients (12.5%) developed recurrence, none of them had positive family history, five had lobectomy as their initial surgical treatment and one had subtotal thyroidectomy. None of those who had total thyroidectomy as their initial surgical therapy developed recurrence.

Table 1: Paraffin section results of patients with thyroid lesion who underwent surgery

Nodular hyperplasia N (%)	Adenoma N (%)	Malignant N (%)	Others (Grave's disease, cyst, thyroiditis) N (%)	Total
212 (49.5)	63 (14.7)	48 (11.2)	105 (24.6)	428 (100%)

Table 2: Different types of thyroid malignant lesions

Papillary Carcinoma N (%)	Follicular carcinoma N (%)	Anaplastic carcinoma N (%)	Lymphoma N (%)	Total
36 (75)	6 (12.5)	2 (4.2)	4 (8.3)	48 (100%)

Table 3: The types of initial surgical therapy for 48 patients with thyroid malignancy with the recurrence in each type

Type of Surgery	No. of Patients	Recurrence (N)
Lobectomy	27	5
Subtotal thyroidectomy	3	1
Near total thyroidectomy	3	-
Total thyroidectomy	15	-
TOTAL	48	6

Discussion

The annual incidence of thyroid carcinoma varies worldwide from 0.5 to 10 per 100,000 population¹². The two most common types of thyroid cancer, papillary and follicular thyroid cancer, together termed differentiated thyroid cancer (DTC), comprise the majority of thyroid cancers and have the best prognosis¹³.

In Saudi Arabia, a substantial rise in incidence of thyroid carcinoma has been observed¹⁴. Other locoregional data showed similar changes¹⁵. This is in line with data from other parts of the world showing the same rise in the number of new cases of (DTC) in the last decades¹⁶.

In the current series, 36 patients were having papillary carcinoma and six had follicular type. The extent of primary surgical resection for well-differentiated thyroid cancer remains controversial. As to the surgical treatment offered to the patients in the present series, 27 patients had lobectomy and 15 had total thyroidectomy

(Table 3). Some surgeons advocate unilateral lobectomy on the affected side, claiming no difference in survival and with decreased morbidity when compared to bilateral thyroidectomy^{17, 18}. Others recommended a near-total thyroidectomy, removing all the affected lobe, isthmus and part of the contralateral lobe claiming that there is a decreased rate of local recurrence when compared to patients who have undergone a unilateral procedure^{19,20}. Others prefer total thyroidectomy as complete removal of the gland facilitates the detection and ablation of metastatic disease with radioactive iodine²¹⁻²⁴. In the current series, 36 patients were having papillary carcinoma and 6 had follicular type (Table 2). More extensive surgery was recommended for papillary thyroid carcinoma by physicians because of the nature of multifocal lesions in this type of thyroid cancer. The incidence of multiple thyroid involvement in papillary thyroid carcinoma varies widely from 18-87.5%²⁵⁻²⁷.

Early reports^{26,28}, found multiple thyroid involvement to be of prognostic value in increasing the risk of recurrence and mortality, where as others suggested that it was not associated with higher recurrence rate²⁹. In follicular carcinoma, the surgeon may resort to completion thyroidectomy after an initial thyroid lobectomy. This is because, a preoperative fine needle aspiration biopsy or intraoperative frozen section frequently fail to diagnose follicular carcinoma of the thyroid gland^{30,31}. Clark reported that 29% of patients undergoing total thyroidectomy for DTC had already undergone a previous thyroid operation³². Others also concluded that once the diagnosis of DTC was made in one lobe, completion thyroidectomy should be considered³³. In this series, staging or risk group classification was not a criterion to choose the type of surgery offered to the patients. Many surgeons consider the risk group classification (AMES, AGES etc.) as a criterion before completion thyroidectomy is recommended³⁴⁻³⁶.

In the current series, six patients (12.5%) developed recurrence, five had lobectomy as their initial surgical treatment and only one had subtotal thyroidectomy. None of those patients who had total thyroidectomy as their initial surgical therapy developed recurrence. The reported recurrence rates with DTC ranged from 20% to 40%³⁷. Although the optimal extent of surgery is still debated, our data show a much better outcome with more extensive surgery, total thyroidectomy, and this is in line with the opinion of many previous workers¹⁹⁻²⁴. DeGroot and associates²⁴ found lobectomy plus at least contralateral subtotal thyroidectomy decreased the risk of death in patients with tumors larger than 1 cm and decreased risk of recurrence among all patients. Mazzaferri³⁷ also had similar previous opinion. The main argument against performing more extensive surgery is higher complication rates, and this seems less important nowadays as highly skilled surgeons are reporting improved complication rates^{38, 39}. However, in a large series⁴⁰ covering 50 year and 2 institutes, more extensive thyroid surgery was not

clearly beneficial in low-risk or even in high risk patients, in addition to being associated with increased complications⁴¹⁻⁴³. The debate surrounding the management of DTC seems to be fueled further by the fact that no prospective randomized trials on this subject have been conducted¹³.

The author concludes that, although the extent of primary surgery for DTC is still controversial, more extensive surgery has a better outcome, at least regarding recurrence rate. A well-designed prospective study is recommended to determine the optimal therapy based on cost-to-benefit analysis, risk and recurrence rate.

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