

**NECESSITY AND SAFETY OF COMPLETION
THYROIDECTOMY FOR DIFFERENTIATED
THYROID CARCINOMA**

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ABSTRACT

Thirty two patients underwent completion thyroidectomy after initial thyroid lobectomy for a solitary thyroid nodule that proved to be malignant on paraffin histopathologic examination. Contralateral thyroid carcinoma was detected in 15 (46.8%) of these patients undergoing thyroidectomy. There was one case of transient vocal cord paresis (3.1%). Temporary hypoparathyroidism occurred in two patients (6.2%). Complete recovery occurred in these three patients. Completion thyroidectomy is a safe procedure with minimal morbidity.

INTRODUCTION

Diagnostic thyroid lobectomy is performed as the initial operation of choice for the solitary thyroid nodule and extended to total thyroidectomy when intraoperative frozen section demonstrates a malignancy. Occasionally preoperative or intraoperative diagnosis of thyroid carcinoma cannot be made especially with follicular tumours. (Miller and Kini, 1990) In such instances completion thyroidectomy is deferred until the examination of paraffin histopathologic sections.

In the past the feared complications of hypoparathyroidism and recurrent laryngeal nerve paralysis made one think twice before considering operative intervention a second time (De Jong et al., 1992).

The purpose of this study was to investigate the morbidity associated with completion thyroidectomy. We also examined the incidence of microscopic foci in the lobe that was removed at the second thyroid operation.

PATIENTS AND METHODS

Between 1991 and 1995, 32 patients underwent initial thyroid lobectomy for a solitary thyroid nodule. In these patients, a diagnosis of benign, suspicious, or inter-

mediate cytopathologic finding was rendered preoperatively using fine needle aspiration biopsy; this was subsequently changed to a diagnosis of malignancy on

examination of paraffin histopathologic sections. The age of these 32 patients ranged from 20 to 71 years with a mean age of 41 years. Completion thyroidectomy was performed later to remove the remaining thyroid tissue and convert the initial lobectomy to a total thyroidectomy. All patients were reviewed to determine

the incidence of malignancy found in the operative specimen of the second procedure. Tumour size and histopathologic type, lymph node involvement, recurrent laryngeal nerve injury and hypoparathyroidism were also examined. The mean follow up for these patients was 16 months.

RESULTS

Histopathologic examination of the permanent sections of the initial thyroid lobectomy specimens of these 32 patients demonstrated papillary or mixed papillo-follicular carcinoma in 22 patients. The remaining 10 patients were found to have follicular carcinoma. The size of the dominant nodule removed by initial lobectomy ranged from 2 to 6.3 cms with a mean diameter of 2.6 . The second operation to remove the remaining thyroid tissue was performed electively 2 weeks to 3 months after initial lobectomy. The mean interval between the two operations was 2 months.

The completion thyroidectomy specimen contained malignancy in 11 (50%) of the 22 patients with papillary carcinoma demonstrated on initial lobectomy. Four (40%) of the 10 patients with follicular carcinoma harbored thyroid carcinoma in the thyroid tissue removed during completion thyroidectomy. Over all, 15 (46.8%) of these 32 patients undergoing completion thyroidectomy had thyroid carcinoma in the thyroid tissue removed during completion thyroidectomy.

The completion thyroidectomy specimen tended to harbor residual thyroid carcinoma if the solitary thyroid nodule at the initial operation was larger than 2.6

cm. This difference, however was not statistically significant.

Likewise, men and patients older than 50 years had a slightly higher incidence of thyroid carcinoma in the thyroid tissue removed by completion thyroidectomy. Contralateral cervical lymph node metastasis was discovered during completion thyroidectomy in one patient with papillary carcinoma to whom modified radical neck dissection was performed together with completion thyroidectomy. Complications of completion thyroidectomy were temporary. Ipsilateral recurrent laryngeal nerve impairment and transient vocal cord paresis occurred in one patient. (3.1%) Spontaneous resolution, documented by direct video. Laryngoscopy, occurred in this patient after 8 weeks of completion thyroidectomy.

Temporary hypoparathyroidism, documented by decreased serum calcium and parathyroid hormone (PTH) levels, occurred in 2 patients (6.2%). Both patients required calcium and vitamin D supplementation for 4 months after surgery. Both are presently normocalcaemic without this supplementation with normal calcium and PTH levels.

DISCUSSION

Surgical treatment of differentiated thyroid carcinoma remains a controversial issue (Schroeder et al; 1988). It is believed that total thyroidectomy is the treatment of choice in the management of these lesions (Rao, et al; 1987), (Ward, 1992) and (Clark, 1992). In addition to a lower recurrence rate, total removal of the thyroid gland eliminates the possibility of the transformation of differentiated carcinoma into an undifferentiated type. The eradication of multicentric foci of carcinoma, while of questionable significance should not be overlooked. The removal of all thyroid tissue allows the more effective use of postoperative radioactive iodine, both as a diagnostic and a therapeutic treatment (Word, 1992).

Occasionally, thyroid carcinoma may by evident only be careful examination of histopathologic sections of thyroid lobectomy specimen. Once the diagnosis of carcinoma is made, the need for and timing of removing the remaining thyroid tissue are questioned. The decision to perform completion thyroidectomy is based on the incidence of discovering malignancy in the thyroid tissue remaining after initial lobectomy (De Groot and Kaplan, 1991).

In 15 (46.8%) of the 32 patients undergoing completion thyroidectomy in this study, thyroid carcinoma was discovered in the remaining thyroid tissue. This falls within the range of 33% to 47% reported by Dejong et al, 1992, however it is much less than the 80% incidence of con-

tralateral disease reported by Anderson et al, 1993.

In this study, patients with papillary carcinoma in the initial lobectomy specimen had residual carcinoma in the completion thyroidectomy more frequently than had patients with follicular carcinoma (50% vs 40%). Complications from completion thyroidectomy must be minimized for the procedure to be beneficial.

The 3.2% incidence of transient vocal paresis appears consistent with that reported by Clark, 1992 and Block, 1987. Likewise, the 6.2% incidence of hypoparathyroidism and hypocalcemia is not excessive and is usually transient. Liberal use of parathyroid autotransplantation may be useful in minimizing this complication. In the present study avoidance of extensive dissection of the contralateral thyroid lobe during the initial thyroid lobectomy facilitated the subsequent removal of the remaining thyroid tissue in the future should completion thyroidectomy be necessary. It has been suggested that the completion should be performed after 3 months, so as to be technically easier (Harness et al., 1986). We found that the technical difficulty of the procedure was the same no matter the time interval.

In conclusion, completion thyroidectomy is a safe procedure with minimal morbidity, and should be considered in most patients treated with thyroid lobectomy for differentiated thyroid carcinoma.

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**عملية الاستئصال الكلى لسرطان الغدة الدرقية
بعد إكتشاف الإصابة فى جزء من الغدة الدرقية**

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أجريت لاثنين وثلاثين مريضا عملية إستئصال كلى للغدة الدرقية المصابة بالسرطان بعد إكتشاف ذلك بالفحص المجهرى للأنسجة للجزء المسائل من الغدة .

وقد حدث هبوط مؤقت في وظائف الغدة الجار درقية في اثنين من المرضى وضعف في العصب الحنجرى المرتبط في مريض آخر ، وقد عاد الثلاث مرضى إلى حالتهم الطبيعية في غضون أربعة أشهر ومن ذلك نستنتج أن الاستئصال الكلى لسرطان الغدة الدرقية عملية آمنة و يجب أخذها في الاعتبار بعد إكتشاف الإصابة بالسرطان في جزء من الغدة .