

## COMPLETION THYROIDECTOMY: RELATION OF TIMING WITH COMPLICATIONS

M. NASEEM BALOCH, TABINDA ASLAM, MUMTAZ MAHER

Department of General Surgery, Ward-2, Jinnah Postgraduate Medical Centre, Karachi

### ABSTRACT

**Objective:** To assess the association of timing with complications following completion thyroidectomy.

**Design & Duration:** Prospective, quasi-experimental clinical trial from June 2002 to March 2007.

**Setting:** Surgical Unit-2, Jinnah Postgraduate Medical Centre (JPMC), Karachi.

**Patients:** A total of 114 patients who underwent completion thyroidectomy.

**Methodology:** The patients were divided into two groups viz. Group-I (n=76) where completion thyroidectomy was performed between 10 days and three months and Group-II (n=38) where completion thyroidectomy was carried out beyond this time.

**Results:** Transient hypocalcaemia was seen in two cases of Group-I and one case of Group-II, while transient recurrent laryngeal nerve paresis was seen in two patients, one in each group. However, there was no statistically significant difference in the outcome between Group-I and II, in terms of complications.

**Conclusion:** Timing does not influence the complication rate after completion thyroidectomy.

**KEY WORDS:** Completion Thyroidectomy, Thyroid Carcinoma, Hypocalcaemia, Recurrent Laryngeal Nerve Injury

### INTRODUCTION

Thyroid cancer in some instances may be diagnosed on histological examination after resection of putative or suspected benign nodule. In these cases, completion thyroidectomy followed by radioiodine ablation is usually recommended to prevent recurrence.

Complications associated with completion thyroidectomy have been reported to be higher than those associated with primary procedure<sup>1,2</sup>. However controversy regarding association of timing with safety of completion thyroidectomy remains unresolved. Some endocrine surgeons suggest the period between 10 days to 3 months after primary procedure to be associated with a higher complications rate. Others have reported that completion thyroidectomy performed within 10 days or after three

months carry lower postoperative morbidity<sup>3-7</sup>. During these 10 days to 3 months period densely adherent strap muscles render dissection of contralateral lobe difficult and hazardous to vital structures of neck<sup>7</sup>. However Tan et al carried out completion thyroidectomy during this period with no definite impact of timing on the complication rate<sup>8</sup>.

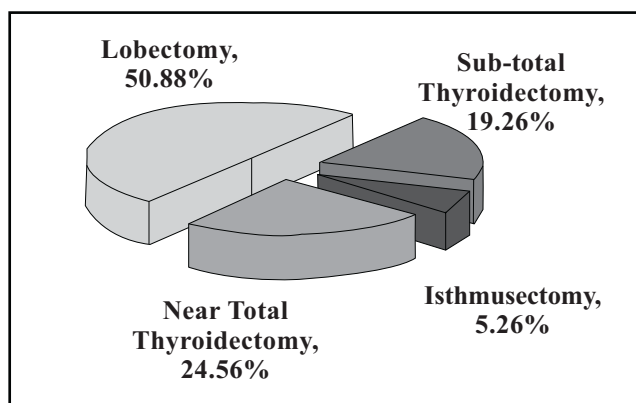
The present study was undertaken to assess the complication rate of completion thyroidectomy in patients undergoing surgery within 10 days to 3 months period and patients operated without time restriction at an earliest available date after the primary procedure. Completion thyroidectomy was carried out by an experienced thyroid surgeon with careful attention on the technique to lower the morbidity.

### PATIENTS & METHODS

From June 2002 to March 2007, 114 patients with a definitive diagnosis of malignancy on histopathological examination of resected thyroid gland, were admitted in Ward-2, JPMC, Karachi. Their ages ranged between 21-76 years. Amongst them 81 patients were females and 33 males. The initial procedures in these patients were lobectomy (58), subtotal thyroidectomy (22), near

### Correspondence:

Dr. Naseem Baloch, Senior Registrar,  
Dept. of Surgery, Ward-2, Jinnah Postgraduate  
Medical Centre, Karachi.  
Phones: 0333-2132461.



**Fig.1. Initial Operations performed**

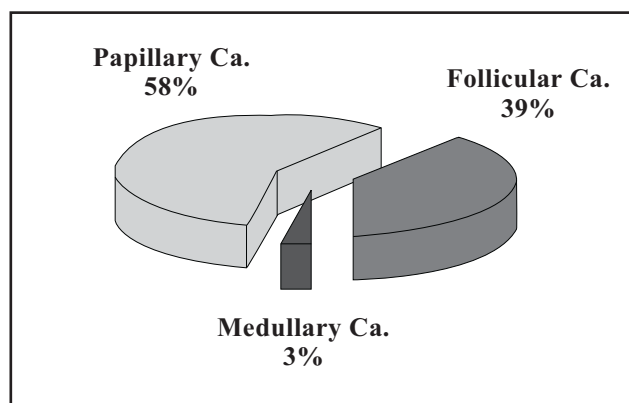
total thyroidectomy (28) and isthmusectomy (6) as shown in Fig.1.

Out of these 114 cases, 75(65.8%) patients had their primary procedure in Ward-2, JPMC while 39 (34.2%) were referred from other centers. The histopathological examination of resected thyroid gland, after primary procedure, showed papillary, follicular and medullary carcinomata (Fig.2).

Pre-operative evaluation of these patients included Tc 99 scan of the thyroid to assess the residual thyroid tissue, indirect laryngoscopy for vocal cords assessment and serum calcium levels for parathyroid functional status. These 114 patients were classified in two groups based on the time interval between first procedure and completion thyroidectomy. Seventy six patients, including 58 females, were in Group-I who underwent their completion thyroidectomy between 10 days to 3 months after primary procedure, while 38 patients (including 23 females) were in Group-II who had their completion thyroidectomy performed beyond three months. Completion thyroidectomy was carried out by a lateral app-

**Table I. Comparison of Complications after Completion Thyroidectomy**

Complication	Gp-I	Gp-II
Temporary Hypocalcaemia	2	1
"" Vocal cord dysfunction	1	1
Rec. laryngeal nerve injury	--	--
Haematoma	--	--
Superficial Wound Infection	2	1
Mortality	--	--
Total	76	38



**Fig.2. Types of Malignant Tumours**

roach dividing sternothyroid and sternohyoid muscles. With careful and meticulous dissection recurrent laryngeal nerve and parathyroid glands were identified and safe guarded.

Post-operative evaluation included vocal cords assessment and estimation of serum calcium levels on first and second post-operative days. Recurrent laryngeal nerve (RLN) injury was considered to have occurred when there was hoarseness or a change in voice quality associated with vocal cord dysfunction on laryngoscopy. Hypoparathyroidism was defined as sustained hypocalcemia associated with tetany, requiring oral or parenteral calcium supplementation.

## RESULTS

The outcome of the two groups, based on the timing of the completion thyroidectomy, were judged in terms of post-operative complications particularly vocal cord dysfunction and hypocalcemia. None of the patients in either groups had any permanent complication. There were no perioperative deaths and no re-explorations for haemorrhage (Table I).

Two (2.63%) patients in Group-I and one (2.63%) patient in Group-II developed transient hypocalcemia, while one (1.32%) case in Group-I and one (2.63%) patient in Group-II suffered from transient recurrent laryngeal nerve paresis. The rate of superficial wound infection was same in both the groups. There was no statistically significant difference in the outcome between Group-I and II, in terms of complications.

## DISCUSSION

Following the diagnosis of cancer, the delay in surgery due to the restriction of timings of the second operation creates significant anxiety in the patient. Establishing the diagnosis and recovering from the first operation

often goes beyond the 10 days deadline. A three months wait does impose undue stress on the patient. Added to this is the fact that a proportion of the patients is females, which come from far flung and rural areas. A return from these areas for the second operation is sometimes not possible. We, therefore, adopted a policy of carrying out the completion thyroidectomy as soon as feasible.

Careful attention to the technique<sup>9-12</sup> has allowed us to achieve results with no permanent hypoparathyroidism and no permanent damage to recurrent laryngeal nerve. The results clearly prove that it is safe to perform completion thyroidectomy at an early date, by an experienced thyroid surgeon, after definitive diagnosis is made with no restriction on timing.

### CONCLUSION

This study concludes that completion thyroidectomy can be performed safely without any influence of timing between the first and the second procedure, provided the operative technique is executed well.

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