



POST OPERATIVE COMPLICATIONS OF NODULAR GOITRE

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INTRODUCTION

Thyroidectomy is a common operation with an extremely low mortality¹. It is associated with specific morbidities which are related to the experience of the surgeon, however². Very low surgical morbidity rates for thyroidectomy are reported in specialised centers.

In competent hands, thyroid surgery is associated with few complications and no fatality. Post operative complications may be as insignificant as edema of the flap or as dangerous and life threatening as hemorrhage or respiratory obstruction. The majority are avoidable with sound surgical technique and good preoperative preparation. With proper preoperative management, the patient will be euthyroid at the time of surgery. If the patient is hyperthyroid, laryngeal edema may result, producing respiratory obstruction. Careless technique may result in massive haemorrhage, recurrent laryngeal nerve paralysis, or both, causing respiratory embarrassment. Lack of experience or of attention to technical details may involve removal of too little or too much thyroid tissue or possibly all parathyroids, resulting in myxedema, recurrent hyperthyroidism, or parathyroid deficiency. Complication rates associated with thyroid surgery can be evaluated only through analysis of case studies and follow up data.

The present study reports the clinical audit of thyroid surgery for adult patients with

nodular goitre. The complications of Thyroidectomy are highlighted and compared to published data.

OBJECTIVES

This prospective study carried out at our institute aimed at :-

1. To compare complication rates of Bilateral sub total thyroidectomy (SBT) , near total thyroidectomy (NTT) Hemithyroidectomy (Total lobectomy and isthmusectomy), and Total thyroidectomy (TT) in cohort of patients undergoing surgery for various thyroid disorders.
2. To identify ways to avoid the post operative complications.

MATERIAL AND METHODS

Fifty patients who underwent thyroid surgery, for nodular, were studied.

Operations were performed by the same consultant for all the patients using various surgical techniques

For all selected patients a thorough history was elicited followed by a complete physical examination. The basic biochemical and hematological investigations were done for all patients. It was decided to request special investigations like thyroid hormone profile and serum calcium estimation only in selected cases, where a disturbance in the functional status was suspected.

Vocal cords were examined pre operatively by indirect laryngoscope in all the patients, whereas post operative vocal cord examination was performed only when hoarseness occurred.



Patients were classified as having hypocalcaemia (hyperparathyroidism) if both clinical and biochemical (a fall in corrected serum calcium concentration below 8 mg/dl

and or the need for calcium supplementation) supportive evidence were present . FNAC was done for all patients. Based on the Final diagnosis, the treatment was given.

RESULTS

Table 1: Baseline characteristics of study participants

Parameter	Totaln=50	Percentage(%)
Age	41.49±10.14(mean±SD)	
Gender		
Male	11	22
Female	39	78
Type of disease		
Colloid goitre	1	2.56
Uninodular goitre	22	44.00
Multinodular goitre	27	49.58
Type of Surgery		
Hemithyroidectomy	17	29.06
B/L subtotal thyroidectomy	25	53.85
Near total thyroidectomy	1	1.7
Total thyroidectomy	7	14.53

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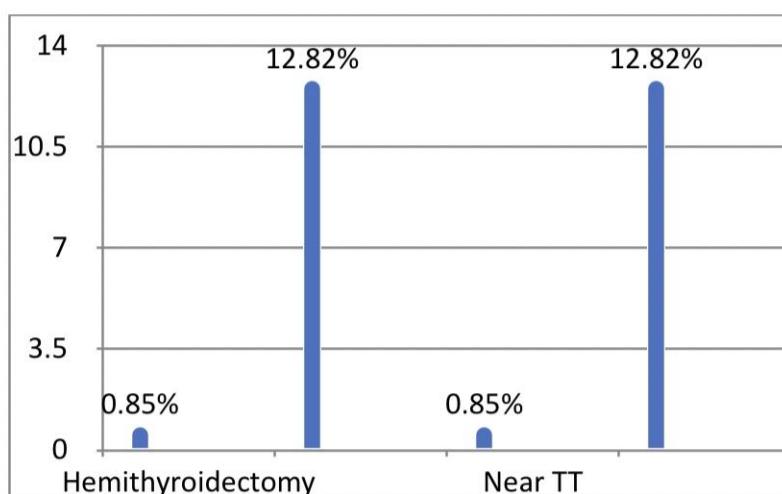
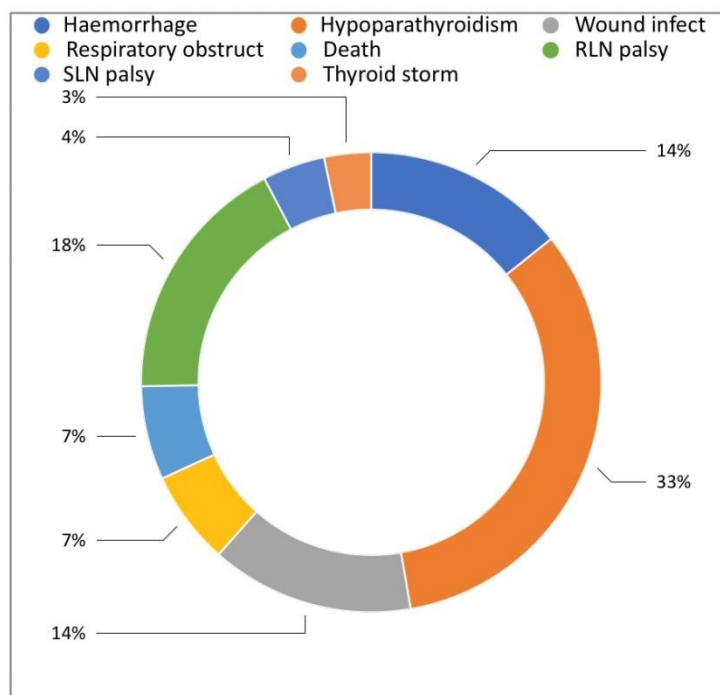


Figure 1: Incidence of complications in different types of surgery.

Figure 2: Types of complications



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DISCUSSION

The results in this study are in correlation with published results of similar hospitals around the world.

Hemorrhagic complications were more frequent in total thyroidectomy (2.56%) when compared to bilateral subtotal thyroidectomy (0.85%). When compared to the results published by Rosato L et al³. Though the hemorrhagic complication is considerably lower in bilateral subtotal thyroidectomy group (2.1%)³, it was higher in total thyroidectomy (1.6%)³. It frequently occurs during the post anaesthetic period when the end tracheal tube is removed. The prevention of post operative bleeding is dependent on good intra operative haemostasis. Sound surgical technique is essential.

The 4.27% incidence of recurrent laryngeal nerve (vocal cord) palsy seen in this series is in concordance with reported incidence figures (0.1% - 4.5%)⁴⁻⁷. Complications of thyroidectomy are largely related to the magnitude of the operation and the experience of the surgeon involved.

Every effort should be made to preserve parathyroid glands with their own blood

supply however, this may not be sufficient to prevent the occurrence of transient hypoparathyroidism and transient post – thyroidectomy hypocalcaemia, secondary to hypoparathyroidism, is common (8,9). Delbridge et al (10) state that transient hypoparathyroidism should be an accepted outcome of bilateral thyroid surgery rather than a complication. It is noted that the degree and duration of hypocalcemia increase with the extent of thyroid surgery (11). Permanent hypoparathyroidism has been reported to occur after total thyroidectomy is between 0.1 % and 32 % of patients overall^{1, 2, 5-7, 12, 13}.

The non –capsular dissection technique may be the cause for the 7.69% incidence of hypoparathyroidism, as the parathyroid gland is vulnerable to devascularisation or inadvertent removal with the thyroid gland during such a procedure. The capsular dissection technique may be useful in reducing this complication.

The greater incidence of complications with TT is attributable mainly to the greater incidence of transient hypocalcemia and to a lesser extent to the slightly higher incidence

of hemorrhage, whereas, the incidences of recurrent laryngeal nerve injuries were slightly higher in bilateral subtotal thyroidectomy. Incidences of other complications are also higher in bilateral subtotal thyroidectomy. Our results concur with the study report published by Rosato et al³.

Bearing in mind that total thyroidectomy is the absolute indication in the more demanding thyroid disease (tumours, retrosternal goitre, Basedow's disease, and recurrences) and in view of its fairly low complication rate; we believe that total thyroidectomy is a safe, reliable procedure, provided it is performed in a technically scrupulous manner. Bilateral subtotal thyroidectomy is a technique which should be abandoned owing to the fact that its complication rate is comparable to that of total thyroidectomy and to the recurrences it may give rise to³. This study reveals that the hemithyroidectomy is an extremely safe procedure without any complication.

Post operative mortality has been reported to occur in between NIL to ONE percent. The highest reported incidence was 1% by Haider A et al. In contrast to most published data, the incidence of mortality in this series is 1.71% (two patients). Out of two patients one died due to an unusual complication of thyrotoxic storm. Adequate pre operative preparation to bring the patient to euthyroid status and ten days therapy with Lugol's iodine, will eliminate this complication.

CONCLUSION:

The following conclusions are drawn from this study

1. This study shows that the total thyroidectomy or hemithyroidectomy can be done with very low complication rate in cases of benign thyroid disease affecting the whole gland.
2. Hypoparathyroidism however, is a relatively common and significant complication than the recurrent laryngeal nerve injury after surgery for thyroid disorders.
3. Complications and sequelae of thyroid surgery can yet be reduced by careful evaluation of the surgical and medical

therapeutic options have more precise surgical indications, a thorough knowledge of the surgical anatomy, a rigorous surgical technique, a systematic dissection of recurrent laryngeal nerve and parathyroid gland in case of bilateral operation and meticulousness during the procedure.

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