



ORIGINAL RESEARCH PAPER

Surgery

POST THYROIDECTOMY COMPLICATIONS: THE ROYAL HOSPITAL EXPERIENCE IN TWO YEARS

KEY WORDS:

**Dr Tagalsir
Alamin Logman**

MBBS,MRCSE,MRCSE,FEBS,DMAS,FMAS, senior specialist General Surgeon
Royal Hospital,Oman

**Dr Riyaz
Ahmed***

senior consultant endocrine surgeon,Royal Hospital.*Corresponding Author

Dr Amr Redha

consultant endocrine surgeon,Royal Hospital.

ABSTRACT

Objective: Thyroidectomy is a very common surgical procedure worldwide and is performed by surgeons with varied training. The outcome and complication rates are largely dependent on surgeon's skill and experience, the extent of surgery, indication of surgery and number of thyroid surgeries performed at that particular center. The objective of this study was to determine the frequency of postoperative complications after thyroid surgery in the Royal hospital(Oman) from June 2018 to June 2020 and to compare the incidence of common complications with the incidence in other high volume centers and those mentioned in the literature. **Study Design:** It is a retrospective descriptive study carried out at The Royal over a period of 2 years from June 2018to June 2020. **Patients and Methods:** All patients with goiter, who underwent any sort of thyroid surgery, were included in this study. Patients' bio-data including age sex, clinical status of thyroid, thyroid function tests, ultrasound, fine needle aspiration cytology and operative procedure, findings, post operative complications and histopathology reports were recorded. Data were analyzed using SPSS.

Introduction:

Thyroidectomy is one of the most frequently performed surgical procedures worldwide, even if the risks of lethal postoperative complications prevented its evolution and diffusion until the beginning of the 20th century.

In early 20th century thyroidectomy became a safe and acceptable operation with the advent of general anesthesia, antisepsis and hemostatic techniques

The surgical talent of Theodor Kocher ,of Switzerland raised thyroid surgery to scientific level, brought surgical skills on the top of surgical art pyramid, and brought him personally to Nobel Prize in 1909. His excellent work in this regard led to a reduction in mortality from 49% to less than 4.5%

Patients And Methods:

All patients, who underwent any sort of thyroid surgery (total thyroidectomy with or without neck dissection,hemithyroidectomy,completion thyroidectomy) were included in this study. Anaesthesia and cardiovascular complications were excluded from the study.

All patients were electively admitted via out-patient department. Investigations like thyroid function tests, serum calcium, ultrasonography and fine needle aspiration cytology (where indicated) were performed. Indirect laryngoscopy was done before surgery by ENT surgeon to see preoperative vocal cord abnormality.

Thyroid surgery was performed by collar incision two finger breadths above the sternal notch. Superior and inferior subplatysmal flaps were raised from sternal notch to thyroid cartilage. The strap muscles were not routinely divided except for large goiters. The middle thyroid veins were ligated and divided first whenever found.

The superior thyroid pedicle was ligated and divided after retracting it downward and laterally.The recurrent laryngeal nerve (RLN) and parathyroid glands were identified and preserved. The procedure was completed accrding to the extent of surgery.

All patients had serum calcium analysis before surgery and on one/two subsequent days and followed in the outpatient clinic accordingly.

Permanent hypocalcaemia was labeled when serum calcium remains below 2 till 90 days.

Permanent RLN palsy was labeled when persisting for more than 6 months after surgery.

The data was analyzed using SPSS 24 to determine the impact of age group, gender and operation category over the complication rate.

Results:

Between June 2013and June 2015, 280 patients underwent different thyroid operations ranging from unilateral lobectomy to total thyroidectomy with or without neck dissection and completion thyroidectomy.

**Table-1: Types of Thyroid Operations
(n=280)**

Type of thyroid surgery	Number of patients	%
Total thyroidectomy	124	(44.2%)
Total thyroidectomy with neck dissection	76	(27.1%)
Hemi-thyroidectomy	60	(21.4%)
Completion thyroidectomy	20	(7.3%)

Of the 280 patients the female to male ratio was 9:1 with mean age of 32 years and range of 16– 68±8.224 years. The overall postoperative complication rate was 10.7%. Hypocalcaemia was observed in 3.5% of patients and was considered as the most common postoperative complication.

Temporary hypocalcaemia was seen in (16%) patients while permanent hypocalcaemia occurred in (0.7%) patient. Recurrent Laryngeal Nerve injury was observed in 2.8% of patients. It was temporary neuropraxia in (1.4%) patients which recovered within 1 to 6 month after surgery. In other 2 patients there was permanent RLN injury and both of these patients had infiltrating papillary carcinoma of thyroid cancers.

Other less common postoperative complications included postoperative bleeding (1.4%), seroma formation (1.4%), chyle leak (0.7%) and wound infection (0.7%). Ages more than 30 years, male gender and more extensive surgery were associated with statistically significant increase in postoperative complication rate.

Discussion:

The overall postoperative complication rate in this study was 10.7% and no mortality was reported. In comparison to this, a recent international study reported nearly 0% mortality rate and less than 9% complication rate.

Major complications of thyroidectomy are hypocalcaemia, RLN injury and postoperative bleeding. In recent days, thyroid crisis is rare as almost all toxic patients undergo surgery only when they are converted euthyroid adequately by anti-thyroid drugs/beta blockers or by both. Other less frequent complications are surgical site infection, granuloma, keloid, wound and chylous discharge.

Postoperative hypocalcaemia can be a significant clinical problem, which may delay patients' discharge and require a considerable postoperative care in immediate postoperative period. In our study, hypocalcaemia was noted in 3.5% of patients, 0.7% of them developed permanent hypocalcaemia. This incidence is consistent with some international studies.

The rates of hypocalcaemia in some recent series were reported between 5.4% and 14.4%. The incidence of postoperative hypocalcaemia is higher after total thyroidectomy as compared to lobectomy or completion thyroidectomy and it was highest in the neck dissection group.

The exact incidence of RLN injury is unknown. Different studies have reported varying prevalence ranging from 0–14%. This difference in complication rates reflects variation in surgical expertise, nature of operation, number of surgeries performed at that particular center.

The RLN injury was observed in (2.8%) patients in this study. Out of these, (1.4%) patients had permanent RLN palsy. Both of these patients had papillary thyroid carcinoma and underwent total thyroidectomy with neck dissection.

Conclusion:

The common post thyroidectomy complications observed in this study were hypocalcaemia and RLN injury. Less common are postoperative bleeding, seroma, chyle leak and wound infection. Older age group, male gender and extensive thyroid surgery were associated with statistically significant increase in complication rate.

Types and incidence of complications in this study are comparable to data from higher centers and those mentioned in the literature.

Cons and pros of the study:

Being a retrospective study.

The impact of level and experience of surgeon performing the procedure on complication rates is not assessed.

The effect of the use of electro cautery and harmonic scalpel on RLN affection was not evaluated.

References:

- Otolaryngology - Head and Neck Surgery
- Volume 132, Issue 3, March 2013 Pages 490–494
- <original articles
- Surgical complications after thyroid surgery performed in a cancer hospital
- João Gonçalves Filho, Mda,
- Luiz Paulo Kowalski, MD, PhD,,
- a Head and Neck Surgery and Otorhinolaryngology Department, Centro de Tratamento e Pesquisa Hospital do Câncer A CCamargo, São Paulo, Brazil
- Available online 2 March 2013 Show more Show lessChoose an option to locate/access this article:
- Original Article | April 2010
- Assessment of the Morbidity and Complications of Total Thyroidectomy FREE
- Neil Bhattacharyya, MD; Marvin P. Fried, MD
- From the Department of Otolaryngology, Harvard Medical School,

and the Division of Otolaryngology, Brigham and Women's Hospital, Boston, Mass (Dr Bhattacharyya); and the Department of Otolaryngology, Montefiore Medical Center, Bronx, NY (Dr Fried).

13. *Arch Otolaryngol Head Neck Surg.* 2010;128(4):389-392. doi:10.1001/archotol.128.4.389.