

Indications and Immediate Post-surgical Complications of Thyroidectomy: An Experience from Baqiyatallah University Hospital, Tehran, Iran

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Abstract:

Introduction: Thyroidectomy is one of the most prevalent performed surgeries worldwide by a variety of trained surgeons in various fields. Risk and complications of thyroidectomy is depended on indication and extent of surgery, number of thyroidectomies performed in a center and surgeon's experience to a wide extent. We aimed to determine indications and prevalence of immediate post-surgical thyroidectomy complications at Baqiyatallah University hospital, Tehran, Iran.

Methods: In this cross-sectional study we retrospectively reviewed profile of patients who underwent conventional (transcervical) thyroidectomy between March 2017 and March 2018. Demographic information as well as surgical indication, primary impression, Fine-needle aspiration results, method of thyroid surgery, weight of extracted specimen, final pathology result, duration of surgery, duration of hospitalization and immediate post-surgical complications were recorded in a predesigned checklist. Information on complications was extracted from physician's progress note and nursing assessment sheets.

Results: Eventually 117 (91 female and 15 male) patients with a mean age of 46 ± 13 years underwent analysis. Multinodular goiter (MNG) was the most frequent (57%) primary impression of the study individuals. Total thyroidectomy was the most prevalent type of thyroidectomy surgery among study individuals with 47(43%) patients followed by subtotal thyroidectomy with 37 (34%) cases. Nausea was the most frequent complication with 14 (13.1%) patients followed by hypocalcaemia (5.12%) and surgery site bleeding (3.41%).

Conclusion: Findings of the present study showed that multinodular goiter is the most prevalent cause of thyroidectomy. Nausea was the most prevalent complication of surgery followed by hypocalcemia and bleeding.

Keywords: Thyroidectomy; Complications; Etiology; Prevalence

Introduction:

Thyroidectomy is one of the most prevalent performed surgeries worldwide by a variety of trained

surgeons in various fields such as general surgery, endocrine surgery, otolaryngology, thoracic surgery, head and neck surgery and oncological surgery (1, 2).

The critical location of thyroid gland in the neck area and its important neighboring structures have made thyroidectomy a sensitive procedure which may lead to severe post-surgical complications (3). Curing the disease and keeping the complications to a minimum has remained as a challenge for thyroid surgery(4).

Thyroidectomy had been considered as a surgery with mortality rate of about 50% before admirable effort of “Theodor Kocher” who reduced this rate to less than 4.5% by advocating surgical methodology (5, 6). This remarkable progress made him a Nobel laureate in 1909.

Nowadays mortality and morbidity of thyroidectomy are well-known and rarely occur in practice; nevertheless some of them, like post-operative hemorrhage and airway obstruction, are life-threatening and may be fatal if no prompt action is taken (7, 8). Recurrent laryngeal nerve palsy (RLNP) or hypomobility and hypocalcemia are two major complications of thyroidectomy(9). Post-operative bleeding, seroma formation, wound infection, hematoma and less commonly Horner syndrome are among other post-surgical complications of thyroidectomy. (1, 6).

Risk and complications of thyroidectomy is depended on indication and extent of surgery, number of thyroidectomies performed in a center and surgeon’s experience to a wide extent. Both patients and physicians should be aware of possible risks and complications of every procedure in order to achieve a better shared decision making and informed consent(10). So in the present study we aimed to determine indications and prevalence of immediate post-surgical thyroidectomy complications at Baqiyatallah University hospital, Tehran, Iran.

Patients and methods:

In this cross-sectional study we retrospectively reviewed profile of patients who underwent conventional (transcervical) thyroidectomy between March 2017 and March 2018 at Baqiyatallah University hospital, Tehran, Iran. The study protocol was registered at ethics committee of Baqiyatallah University of Medical Sciences (Tehran, Iran). Patients with incomplete information, any other underlying diseases or concurrent surgery in the same hospitalization

were excluded from the study.

Demographic information as well as surgical indication, primary impression, Fine-needle aspiration results, method of thyroid surgery, weight of extracted specimen, final pathology result, duration of surgery, duration of hospitalization and immediate post-surgical complications were recorded in a predesigned checklist. Information on complications was extracted from physician’s progress note and nursing assessment sheets.

Data were analyzed using statistical package for social sciences (SPSS) for Windows (version 21, IBM Corp, Armonk, NY). Descriptive analysis was used for reporting frequencies. Mean and standard deviation (SD) were used for describing categorical variables.

Results:

Eventually 117 (91 female and 15 male) patients with a mean age of 46 ± 13 years underwent analysis. Multinodular goiter (MNG) was the most frequent (57%) primary impression of the study individuals followed by thyroid nodule and thyroid lymphoma with 32 (29%) and 11 (10%) patients, respectively. Only one patient had undergone surgery for cosmetic reasons by her own intention.

Most (54%) of the patients had benign and 27 (25%) patients had malignant FNA results followed by 10 (9%) inconclusive and 2(1%) unsatisfactory samples. Total thyroidectomy was the most prevalent type of thyroidectomy surgery among study individuals with 47(43%) patients followed by subtotal thyroidectomy with 37 (34%) cases. The combination of the hemithyroidectomy and isthmectomy was performed in 11 (10%) patients. Of study individuals 9 (8%) patients had undergone Hemi thyroidectomy and only one patient had undergone isthmectomy. Mean weight of extracted tissues was 65 ± 66 gr in study individuals.

The mean duration of surgery was 127 ± 58.05 minutes in study individuals. About 31% of the patients had a kind of complications after surgery. Nausea was the most frequent complication with 14 (13.1%) patients followed by hypocalcaemia (5.12%) and surgery site bleeding (3.41%) (Figure 1).

Multi nodular goiter (MNG) was the most prevalent

(54%) final pathology report after surgery (Figure 2). Thyroid lymphoma, papillary carcinoma, follicular adenoma, medullary carcinoma, follicular carcinoma and anaplastic thyroid cancer were in the following ranks. Mean duration of hospitalization was 2 ± 1 days in study individuals.

Discussion:

We found that multinodular goiter is the most prevalent final pathology of extracted thyroid specimens in study individuals. Most of the patients underwent total thyroidectomy followed by subtotal thyroidectomy. Of all patients, about one-third showed a type of immediate post-surgical complication among which nausea was the most common one.

In a similar study of 408 patients, Dinc et al. reported that total thyroidectomy was the most common (80.4%) preferred type of thyroidectomy. Hypocalcemia was observed in 17.9% of total thyroidectomy and 13.7% of near total thyroidectomy group. Unilateral recurrent laryngeal nerve paralysis was present in 6.7% of patients in total thyroidectomy and 16.2% of patients in near total thyroidectomy group (11). Dinc et al. study is in line with the present study; however rate of complications seem to be lower in our study.

Bergenzel et al. reported complications of thyroid surgery in 3660 patients in a multi-center study. They reported prevalence of hypocalcemia as 9.9% and unilateral paralysis of recurrent laryngeal nerve as 3.9% (4). Prevalence of post-surgical re-bleeding was 2.1% in their study. Bergenzel et al. has mentioned high prevalence of hypocalcemia as “a cause of concern”.

In another similar study, Kwon et al. assessed incidence of recurrent laryngeal nerve paralysis and hypoparathyroidism after thyroidectomy in patients with Graves' disease. They reported higher prevalence of these complications in patients with Graves' disease in comparison with control group(12).

Mean rate of temporary and permanent RLNP are 9.8% and 2.3%, respectively due to a systematic review (13). However; no similar complications were seen in our series of patients.

The present study has some limitations. Retrospective study design is one of these limitations which caused loss of data. Also results could have been analyzed

for each surgeon separately in case we had a system for recording immediate post-surgical complications.

Conclusion:

Findings of the present study showed that multinodular goiter is the most prevalent cause of thyroidectomy. Nausea was the most prevalent complication of surgery followed by hypocalcemia and bleeding.

Authors' Contributions:

SNS drafted the manuscript and analyzed the data. MHK designed the study and helped in manuscript drafting and data analysis. HM helped in manuscript drafting and analysis. All authors have approved the final version of manuscript.

Conflict of Interest Disclosures:

There are no conflicts of interest in terms of the present manuscript.

Ethical approval/Consideration:

The study protocol was registered at ethics committee of Baqiyatallah University of Medical Sciences (Tehran, Iran).

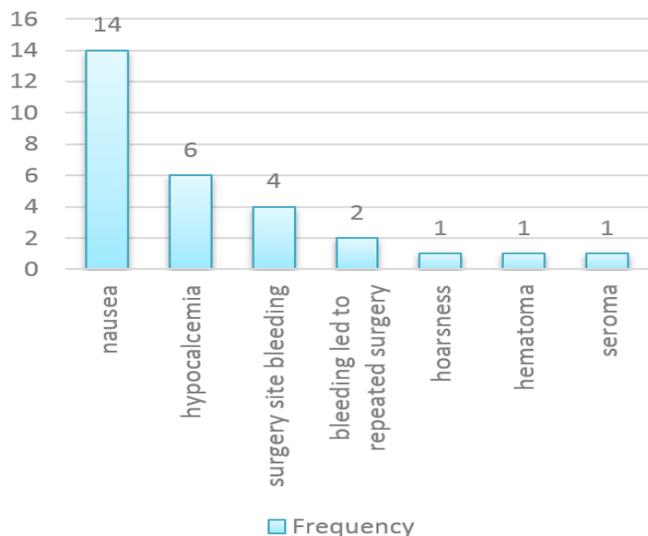


Figure 1. Prevalence of various post-surgical complications in study individuals

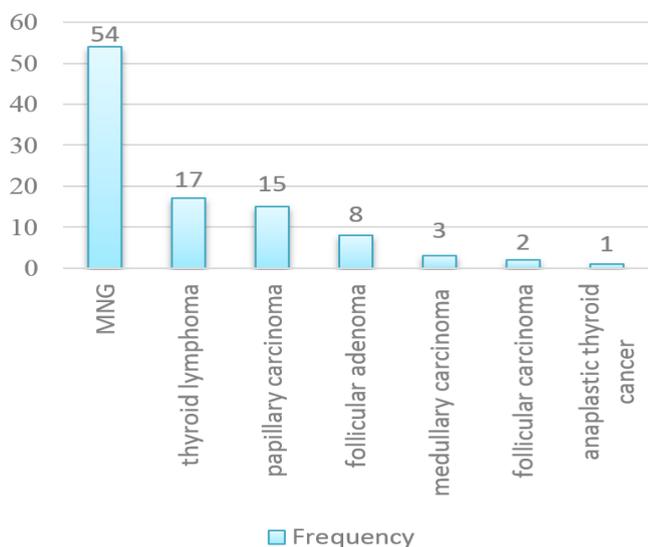


Figure 2. Distribution of final pathology results among study individuals

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