

**SURGICAL OUTCOMES OF CONVENTIONAL TOTAL THYROIDECTOMY IN IRAQI  
PATIENTS: A RETROSPECTIVE STUDY****Wissam Jassim Naif\***

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**ABSTRACT**

Thyroidectomy is a short-term procedure, although postoperative complications are possible, it represents the gold standard for multi-nodular goiter in particular. The aim of study was to impact surgical outcomes of conventional total thyroidectomy in patients with goiter. This retrospective study included 60 adult patients with goiter who underwent conventional total thyroidectomy in the surgical wards of Tikrit hospitals, Salah Al-Din Governorate, Iraq, from February 2023 to July 2024. The results showed that among all studied patients, Only 5 (8%) patients had postoperative complications. The common complications included : hematoma in 2 patients (3%), also wound infection in 2 patients (3%), and recurrent laryngeal nerve palsy observed in only 1 patient (2%). Mortality rate was (0 %). It was concluded that conventional total thyroidectomy for patients with multi-nodular goiter is safe and appropriate.

**KEYWORD:** Thyroidectomy, Postoperative complications, Multi-nodular goiter.**INTRODUCTION**

It is known that the treatment of large goiter, especially when it is associated with compressive symptoms such as difficulty swallowing or shortness of breath is done by surgical approach.<sup>[1,2]</sup> Hyperthyroidism and aesthetic reasons can also be major indications.<sup>[3,4]</sup> In the year 1170 AD, Roger Frugardi of Salerno wrote the first report of thyroid surgery.<sup>[5]</sup> In 1872, Theodor Kocher performed the first thyroidectomy.<sup>[6]</sup> In the end, his groundbreaking work and Billroth's work led to the standardization of the surgical technique, which is still used today with very few modifications.<sup>[7]</sup> The safety of thyroid surgery has grown due to ongoing advancements in surgical methods and a deeper comprehension of thyroid pathology.<sup>[8]</sup> In general, conventional open thyroidectomy is until today represents the most widely applied approach to open thyroid surgery,<sup>[9]</sup> and is considered the gold standard.<sup>[10]</sup> This surgical approach allows for exposure of both lobes of the thyroid gland and dissection of the central compartment of the neck.<sup>[11]</sup> Thyroidectomy is a common surgical procedure, and standard open cervical thyroid surgery is a safe and effective procedure.<sup>[12]</sup> Notwithstanding the intended amount of thyroidectomy, a traditional open thyroidectomy often necessitates a lengthy collar incision (typically 5–8 cm in length), broad skin flaps on the anterior neck, and a long midline opening of the strap muscles to give exposure of the thyroid glands.<sup>[13,14]</sup>

The conventional method frequently leaves a broad scar on the neck and raises the risk of several issues, including skin flaps and vertical opening of the strap muscles.<sup>[15]</sup> Therefore, a patient's quality of life may suffer as a result of this intrusive surgery.<sup>[16]</sup> However, many skilled general surgeons prefer the traditional open approach and consider it safe and effective.<sup>[17-19]</sup> This study was designed to estimate conventional approach in terms of post-operative complications in patients with multi-nodular goiter undergoing total thyroidectomy in Salah Al-Din, Iraq.

**PATIENTS AND METHODS**

This retrospective study was conducted by analyzing the medical records of 60 patients with goiter undergoing conventional total thyroidectomy in the surgical wards of Tikrit hospitals, Salah al-Din Governorate, Iraq, from February 2023 to July 2024. All patients underwent general routine examinations before surgery. This study included both genders, patients with multinodular goiter, aged 18 years and older. In contrast, previous thyroid surgery and malignant cases were excluded. The studied patients were aged between 31-60 years old. The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of Local Health Directorate. Informed consent was not required from the participating patients because the study was a retrospective data analysis. Statistically, the data were analyzed descriptively using SPSS statistical software

(IBM), version 26. The data were tabulated in the form of frequencies and percentages (%).

### Surgical steps

Before surgery, the proper antibiotics were administered to each patient. The patient was put under general anesthesia and given a little extension of the neck while in the supine posture. A little finger's breadth above the sternal notch, a 3–5 cm incision was made in the neck. To detach the thyroid lobe from the strap muscle, a vertical incision was performed above the muscle's midline. A ligature was used to split the parenchyma and thyroid arteries. Identification and preservation of the parathyroid glands and recurrent laryngeal nerve were achieved. The surgical incision was layer-closed after

hemostasis and a drain was positioned in the paratracheal region (Figure 1). Each patient's thyroid bed received an installation of a suction vacuum (Redivac) drainage equipment, which was taken out the following morning. All studied patients were evaluated on 1st day and discharged from hospital, and then they were followed up on 3 months after surgery.

### Measurements of surgical outcomes

The surgical results were measured in terms of: length of hospital stay, post-operative blood loss, hematoma, and wound infection were evaluated at 3 months after surgery. Besides, 12-month postoperative follow-up revealed the presence of recurrent laryngeal nerve (RLN) palsy.

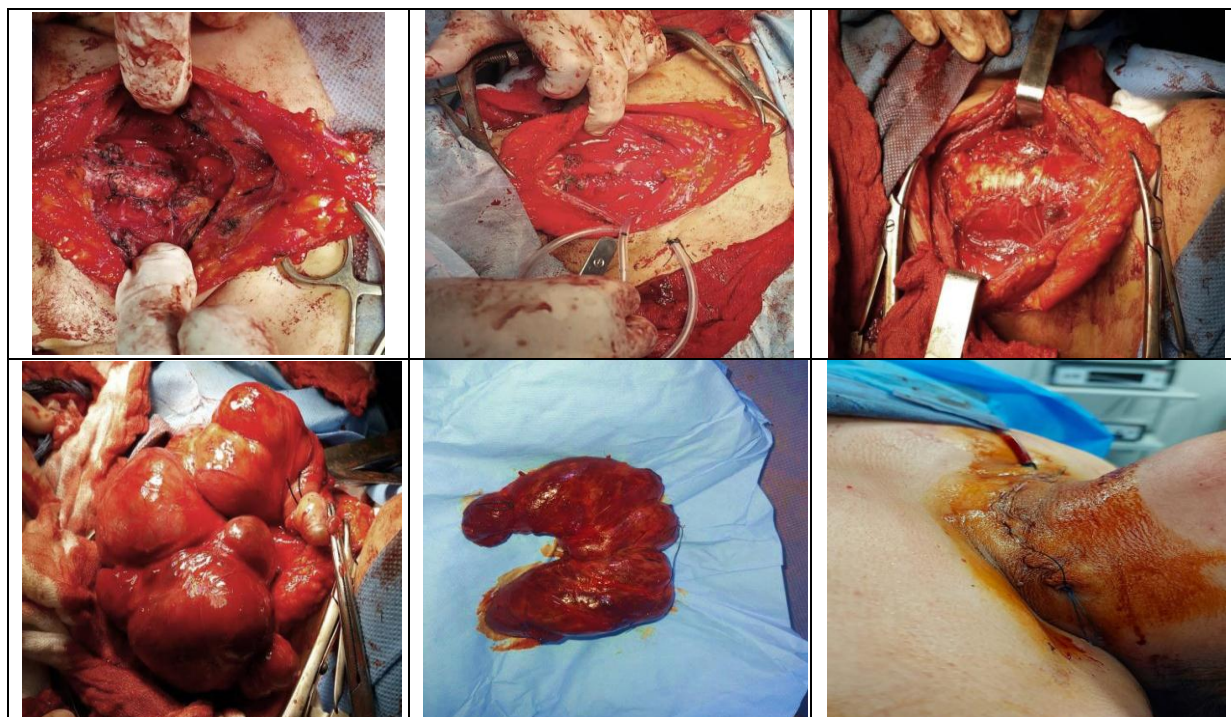


Figure 1: Conventional total thyroidectomy in studied patients.

### RESULTS

The results showed that 42 (70%) of the patients undergoing total thyroidectomy were females versus to 18 (30%) males as clarified in Figure (2).

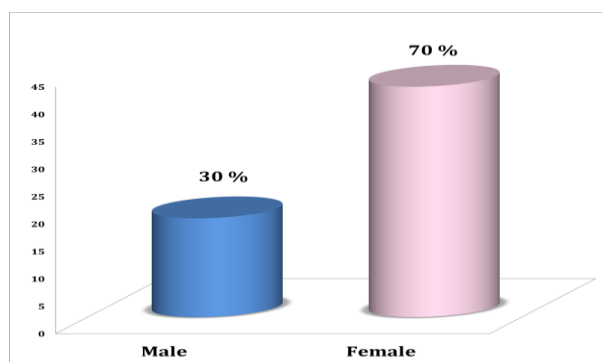
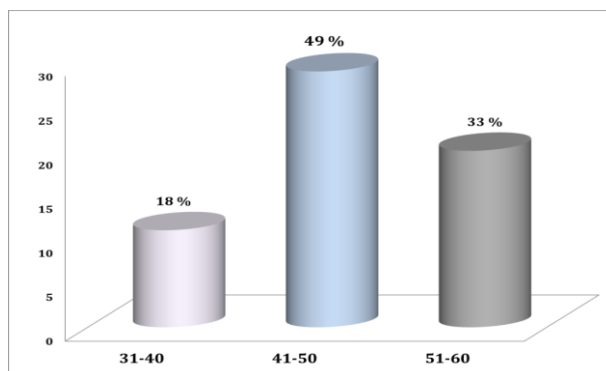


Figure 2: Gender of studied patients.

As for the age groups of the patients, the highest proportion (49%) was for the age group (41-50) years

old, while the lowest proportion (18%) was recorded for the age group (31-40) years as, illustrated in Figure (3).



**Figure 3: Age group of studied patients.**

Of the total 60 patients studied, 5 (8 %) postoperative complications were recorded as shown in Table (1). The most common complications observed were: hematoma in 2 patients (3%) as well as wound infection in 2

patients (3%), and recurrent laryngeal nerve palsy recorded in only 1 patient (2%). It is worth noting that the mortality rate was (0 %), as shown in Table (1).

**Table 1: Post-operative complications in studied patients.**

Post-operative complications		Frequency N=60	%
Hematoma	Yes	2	3
	No	58	97
Wound infection	Yes	2	3
	No	58	97
Recurrent laryngeal nerve palsy	Yes	1	2
	No	59	98
Mortality	Yes	0	0
	No	60	100

## DISCUSSION

The thyroid gland has a plentiful blood supply, so during thyroid surgery, dissection in planes followed by quick and efficient hemostasis is essential to preventing intra- and postoperative blood loss as well as reducing problems after surgery.<sup>[20]</sup> For all patients presenting with bilateral benign multi-nodular goiter, Graves' disease, and the majority of patients with thyroid cancer, total thyroidectomy is currently the recommended course of action.<sup>[21,22]</sup> Thyroid surgery is a short-term procedure, and moderate pain is a key component of quality post-operative care.<sup>[23]</sup> In 1912, Theodor Kocher established the open method to provide good exposure of the thyroid gland to enable safe and effective surgery, which allowed surgeons to achieve lower rates of morbidity and mortality during thyroidectomy.<sup>[24]</sup> Recurrent laryngeal nerve damage is recognized as one of the major problems following a thyroidectomy. One of the most common side effects of thyroid surgery is thought to be recurrent laryngeal nerve palsy.<sup>[25]</sup> When comparing open thyroidectomy to endoscopic thyroidectomy, a meta-analysis revealed a tendency towards a decreased rate of vocal fold paralysis. This result, however, is inconsistent with earlier research and is most likely related to the learning curve and the small number of experiments.<sup>[26]</sup>

As a more conservative approach with noticeably higher recurrence rates, sub-total or near total thyroidectomy procedures are becoming less frequently used to treat bilateral benign thyroid disease. In contrast, total thyroidectomy treatments have the same safety profile.<sup>[27,28]</sup> Because it blocks airways, postoperative hematoma formation following a complete thyroidectomy may be fatal. Thus, in these cases, thorough dissection and hemostasis are crucial.<sup>[29]</sup> In this study there were only two cases of postoperative hematoma formation with conventional vascular ligation (3%), which is consistent with the findings of a study by Khafaji et al., where hematoma formation occurred in 1 out of 15 patients (6.7%) in the conventional group.<sup>[30]</sup> The majority of patients were found to be in the age group of 41-50 years old. This is consistent with a study by Baloch et al., reported that the mean age of patients underwent open thyroidectomy for benign multinodular goiter was  $42.38 \pm 17.39$  years.<sup>[31]</sup> Another study from Iraq by Al-Aubaidi et al. revealed that the mean age of patients underwent total thyroidectomy was  $48 \pm 11$  years.<sup>[32]</sup> It is worth noting that the risk of complications after thyroid surgery is one of the main reasons for recommending total thyroidectomy or less radical procedures in the treatment of thyroid diseases.

## CONCLUSIONS

Based on results, conventional total thyroidectomy for patients with multi-nodular goiter is safe and proper approach, however avoiding possible post-operative complications remains dependent on the skill of the surgeons.

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