Sarcouncil Journal of Multidisciplinary

ISSN(Online): 2945-3445

Volume- 03| Issue- 06| 2022

Research Article **Received:** 05-04-2023 | **Accepted:** 11-05-2023 | **Published:** 14-06-2023

Analysis of Thyroidectomy Results and Identification of Postoperative Complications for Iraqi Patients

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Abstract: **Introduction:** Thyroidectomy is one of among the most often performed surgical operations globally. Over 34,000 surgeries were conducted in Italy throughout the year, with a total of 100,000 performed per year, as the frequency of thyroid illnesses requiring complete thyroidectomy continues to rise. **Objective**: This paper aims to the analysis of Thyroidectomy Results and Identification of Postoperative Complications for Iraqi Patients. **Patients and methods**: Our paper was presented as a cross-sectional study where it was developed to the analysis of Thyroidectomy Results and Identification of Postoperative Complications for Iraqi Patients who have ages in range 30-75 years. This data was included 46 cases that cover all sexes, males, and females, in different hospitals in Iraq from 25th July 2021 to 19th June 2022. The data collected was analysed and designed by the SPSS program. **Discussion**: After analysing the data, they discovered that greater thyroid gland vascularization is more closely associated to hyperthyroidism and that the existence of thyroiditis impacts the occurrence of parenchymal fibrosis. **Conclusions**: Total thyroidectomy is an essentially safe treatment, even though it exposed fewer parathyroid glands as well as recurrent laryngeal nerves and more surgical risk compared to unilateral thyroid lobectomy. Neither infection nor airway issues appear to impact the risk of postoperative patients, with only hypocalcaemia (transient) having a significant effect on postoperative patients.

Keywords: Thyroidectomy; wound infection; Hematoma; and hypocalcaemia.

INTRODUCTION

Thyroidectomy is one of among the most often performed surgical operations globally. Over 34,000 surgeries were conducted in Italy throughout the year, with a total of 100,000 performed per year, as the frequency of thyroid illnesses requiring complete thyroidectomy continues to rise [Lecerf, P. *et al*., 2012; Thomusch, O. *et al*., 2000]. Historically, thyroid surgery mortality has decreased from over 50% at the turn of the century to a negligible percentage today, owing to advancements in surgical methods, the introduction of technology breakthroughs, and an increased understanding of pathophysiology. [Bellantone, R. *et al*., 2002]

Therefore, the incidence of perioperative complications is around 1–2%. However, permanent complications, such as vocal cord palsy and hypoparathyroidism, can dramatically reduce the quality of life of patients and have always represented a topic of intense clinical interest and research for most neck surgeons [Efremidou, E.I. *et al*., 2009]. The literature shows strong evidence that the incidence of perioperative complications correlates to factors such as thyroid disease, specific characteristics of each patient or the thyroid gland, surgeon's experience, and surgical technique, even with the use of optical magnification tools. [Duclos, A. *et al*., 2012- Goldfarb, M. *et al*., 2011]

Wound infection, hematoma/haemorrhage causing airway impairment, hypocalcaemia, recurrent and superior laryngeal nerve damage, and thyroid storm are the most common postoperative consequences of thyroid surgery. Precise awareness of the precise anatomic features, as well as rigorous surgical technique, are required criteria for effective results and keeping problems to a minimum. According to Ramirez, problems related to thyroid surgery are proportional to the amount of the thyroidectomy and inversely proportionate to the surgeon's expertise. [Stavrakis, A.I. *et al*., 2007- Thomusch, O. *et al*., 2003]

Thyroidectomy is also recommended when a large thyroid gland causes toxic symptoms or indicates a high index in suspicion of cancer. However, cosmesis is the most prevalent reason [Cooper, M.S. *et al*., 2008]. The kind of thyroidectomy depends on whether the lesion is benign or malignant, the size within the lesion, and the

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DOI- tps://doi.org/10.5281/zenodo.8039595

degree of damage. Throughout the eighteenth century, the death rate from bleeding and sepsis following thyroid surgery was as high as 40% [Shoback, D, 2008- Higgins, K.M. *et al*., 2004]. This paper aims to the analysis of Thyroidectomy Results and Identification of Postoperative Complications for Iraqi Patients.

PATIENTS AND METHODS

Our paper was presented as a cross-sectional study where it was developed to the analysis of Thyroidectomy Results and Identification of Postoperative Complications for Iraqi Patients who have ages in range 30-75 years. This data was included 46 cases that cover all sexes, males, and females, in different hospitals in Iraq from 25th July 2021 to 19th June 2022. The data collected was analysed and designed by the SPSS program. Data was interested in the distribution of Thyroidectomy patients based on age, sex, and BMI, <30 and >30, where the outcomes were presented in Table 1, Table 2, and Table 3.

Our data also address to examine of characteristics baseline within thyroid volume into thyroidectomy patients where have two parameters which are > 80 ml and ≤ 80 m, and the examination of characteristics baseline within neck length into thyroidectomy patients, which include ≥ 5 cm and < 5 cm where these outcomes were cleared in Table 4 and Figure 1.

This paper was extended to determine of symptoms within thyroidectomy patients, which have on anxiety, enlarged thyroid gland, gaining weight, having frequent and heavy menstrual periods, and having trouble sleeping; where these parameters get on in Table 5. Furthermore, the paper progressed to diagnoses of thyroidectomy patients' determination within into thyroidectomy patients, where these results were found in Figure 2.

To further of results, this study was estimated of clinical characteristics into causes related to thyroidectomy patients where this data included alcohol, bleeding disorder, chronic heart failure, diabetes, dialysis, hypertension, preoperative sepsis, Smoker, and Wound infection, which the outcomes were determined in Table 6 as well as an examination of clinical characteristics into thyroidectomy patients based on Hyper-vascularization which can be seen in Table 7.

This paper estimated the types of thyroid operations used on thyroidectomy patients, which define by Hemithyroidectomy, Subtotal thyroidectomy, Near-total thyroidectomy, and Total thyroidectomy, where can be presented in Figure 3.

This paper was examined of outcomes and clinical characteristics into thyroidectomy patients based on steroid using, which have defined within patients who have not non-Steroid use and have Steroid use, where these results were determined in Table 8.

This data was progressing in distributions length of hospitalization outcomes into thyroidectomy patients where it defined into 48 hrs and > 48 hrs, which can be seen in Figure 4. This paper was assessed of post-operative complications outcomes into thyroidectomy patients, which these parameters were defined into bleeding, Infection, Transient voice symptoms, Airway difficulties, hypocalcaemia (Transient), RLN paralysis, and hypocalcaemia (Permanent) which all these outcomes were found in Figure 5.

RESULTS

Table 1: Distribution of Thyroidectomy patients based on age

N	**Va**	46
	Mi	0
M		52.5000
SEOM		1.97906
Me		52.5000
Mo		30.00[a]
SD		13.42262
Var		180.167
Sk		.000
SEK		.350
Ra		45.00
Min		30.00
Max		75.00
S		2415.00

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Table 2: Distribution of Thyroidectomy patients based on sex

		F	P (%)	VP (%)	CP (%)
V	Female	27	58.7	58.7	58.7
	Male	19	41.3	41.3	100.0
	T	46	100.0	100.0	

Table 3: Distribution of Thyroidectomy patients based on BMI

		F	P (%)	VP (%)	CP (%)
Val	<30	14	30.4	30.4	30.4
	>30	32	69.6	69.6	100.0
	T	46	100.0	100.0	

Table 4: Examination of characteristics baseline within thyroid volume into thyroidectomy patients

		F	P (%)	VP (%)	CP (%)
Valid	> 80 ml	9	19.6	19.6	19.6
	≤ 80 m	37	80.4	80.4	100.0
	Total	46	100.0	100.0	

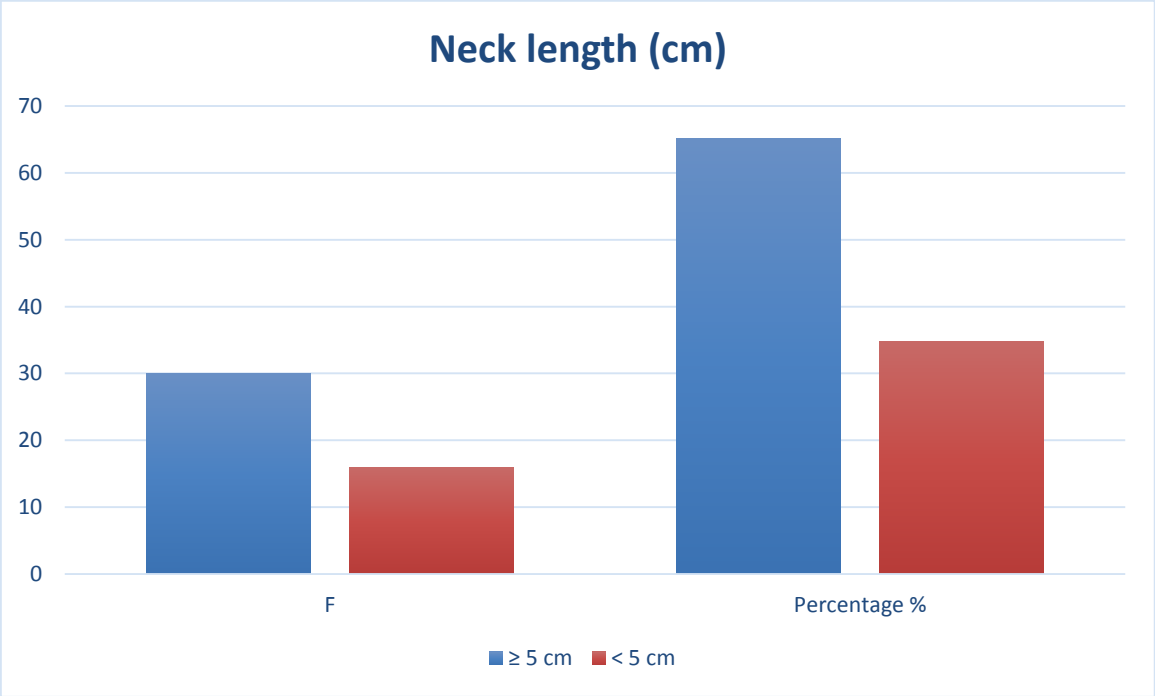

Figure 1: Examination of characteristics baseline within neck length into thyroidectomy patients

Table 5: Determination of symptoms within thyroidectomy patients

		F	P (%)	VP (%)	CP (%)
Val	Anxiety	4	8.7	8.7	8.7
	Enlarged thyroid gland	18	39.1	39.1	47.8
	Gaining weight	15	32.6	32.6	80.4
	Having frequent and heavy menstrual periods	4	8.7	8.7	89.1
	Having trouble sleeping	5	10.9	10.9	100.0
	T	46	100.0	100.0	

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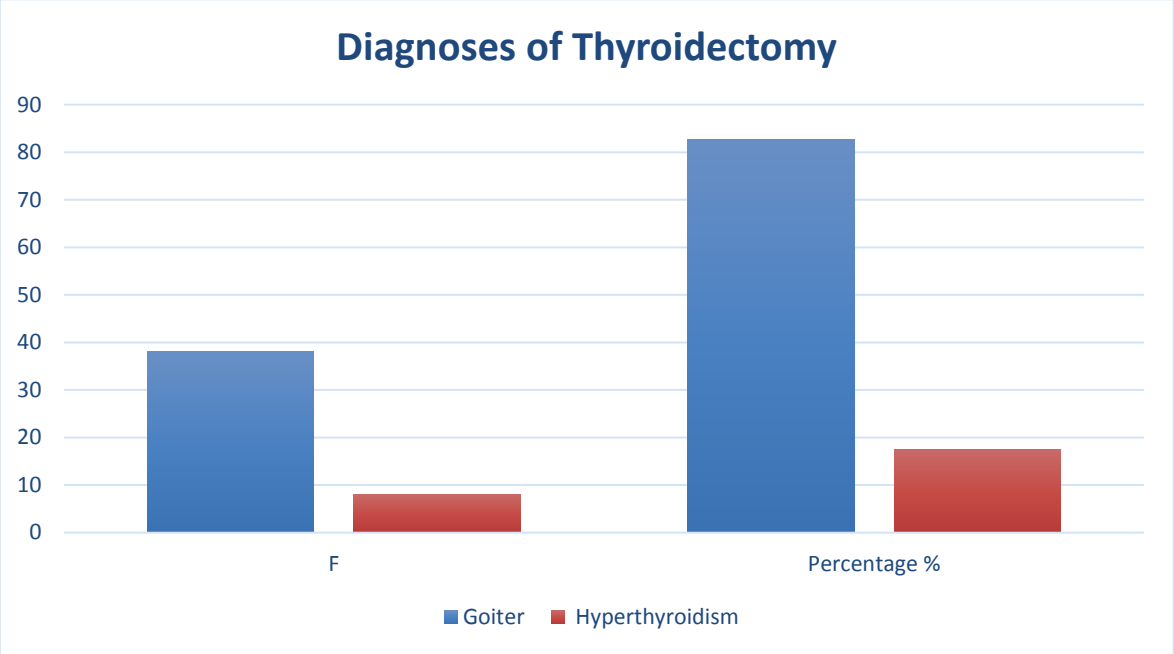

Figure 2: Diagnoses of thyroidectomy patients' determination within into thyroidectomy patients

Table 6: Estimations of clinical characteristics into causes related to thyroidectomy patients

		F	P (%)	VP (%)	CP (%)
Val	Alcohol	4	8.7	8.7	8.7
	Bleeding disorder	6	13.0	13.0	21.7
	chronic heart failure	6	13.0	13.0	34.8
	Diabetic	5	10.9	10.9	45.7
	Dialysis	3	6.5	6.5	52.2
	Hypertension	5	10.9	10.9	63.0
	Preoperative sepsis	6	13.0	13.0	76.1
	Smoker	8	17.4	17.4	93.5
	Wound infection	3	6.5	6.5	100.0
	T	46	100.0	100.0	

Table 7: Examination of clinical characteristics into thyroidectomy patients based on Hypervascularization

		F	P (%)	VP (%)	CP (%)
Valid	Hypervascularization	13	28.3	28.3	28.3
	Non	33	71.7	71.7	100.0
	Total	46	100.0	100.0	

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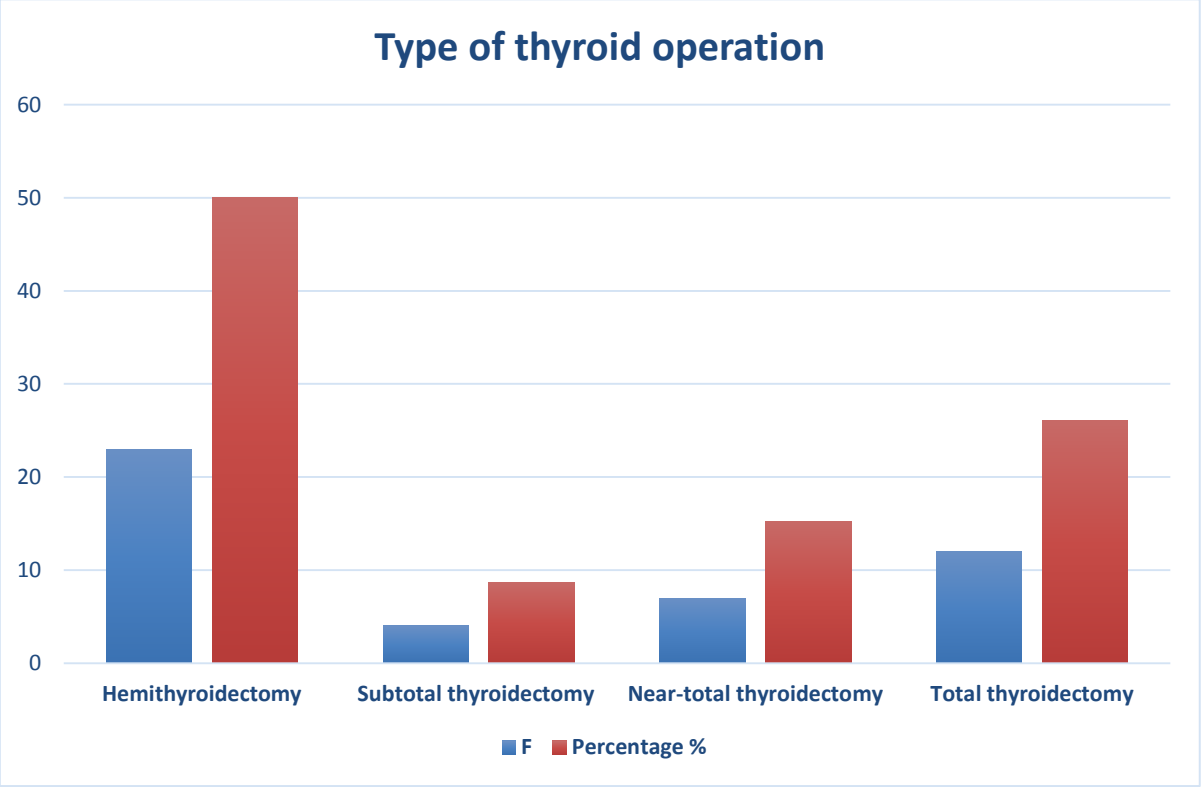

Figure 3: Determination of types of thyroid operations used on thyroidectomy patients

Table 8: Examination of outcomes clinical characteristics into thyroidectomy patients based on steroid using

		F	P (%)	VP (%)	CP (%)
Valid	Non-Steroid use	33	71.7	71.7	71.7
	Steroid use	13	28.3	28.3	100.0
	T	46	100.0	100.0	

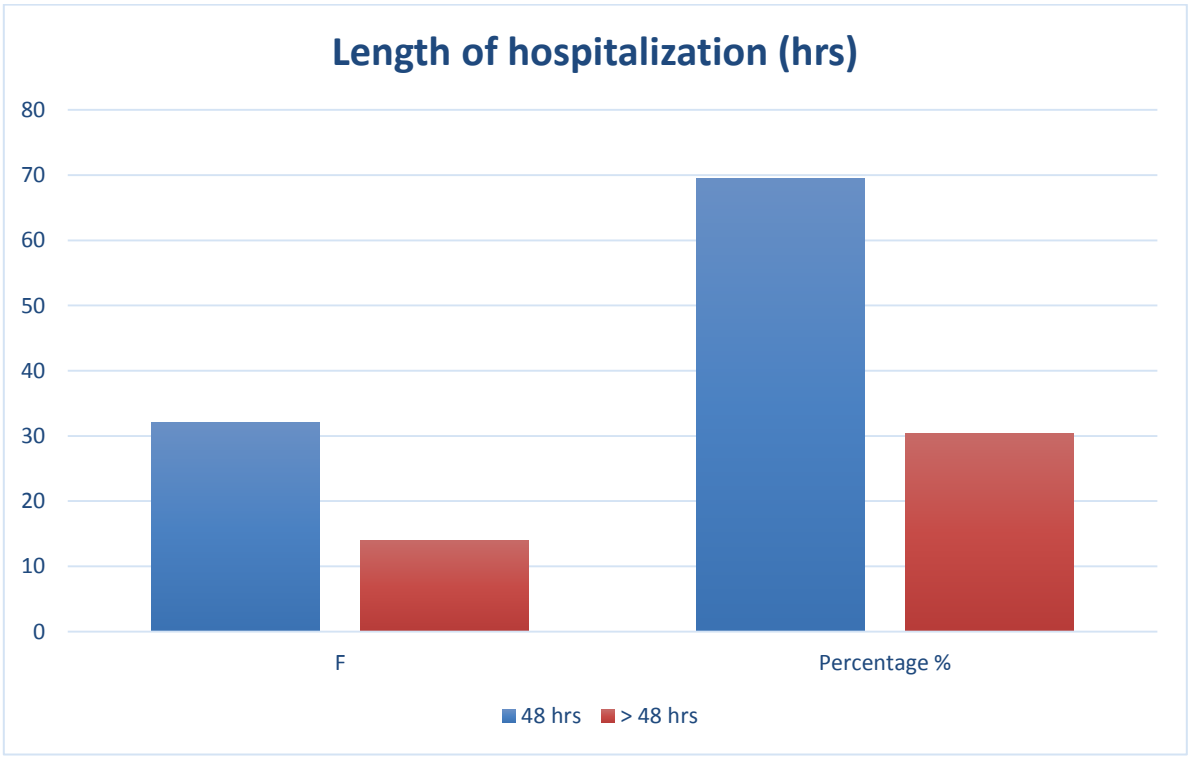

Figure 4: Distributions length of hospitalization outcomes into thyroidectomy patients

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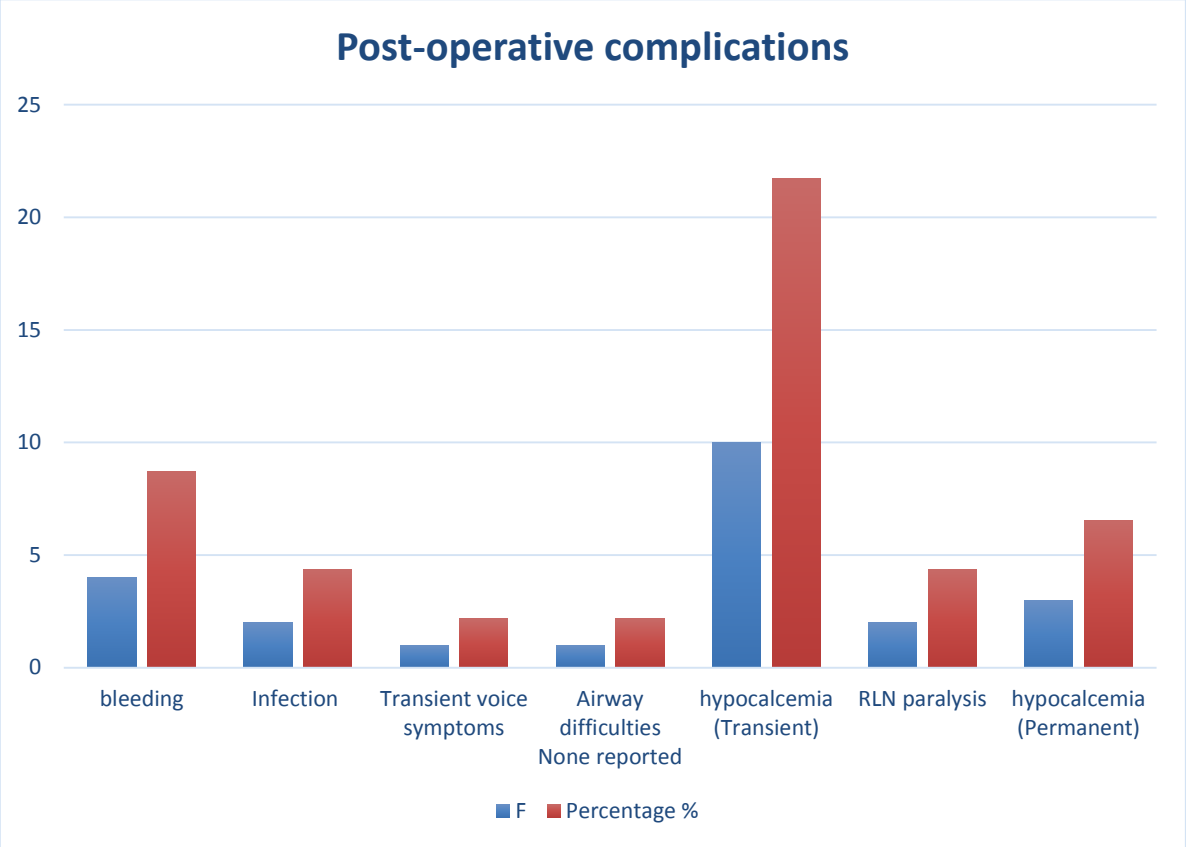

Figure 5: Assessment of postoperative complications outcomes into thyroidectomy patients

DISCUSSION

In discussion, our study found risk variables that considerably affect the occurrence of postoperative issues among both males and females after complete thyroidectomy. Thyroid surgeons can utilize our findings to determine high-risk patients who should have complete thyroidectomies based on their preoperative factors of risk. Postoperative problems in inpatient complete thyroidectomies were age 50, dependent health, previous history of CHF, smoking history, high blood pressure, infection of the wound, history on preoperative sepsis, steroid usage, and bleeding condition.

Original instances of scores also scales offered for assessing pre-operatively the complexity of undergoing surgery and based on particular risk variables linked with the kind of operation can be found across the literature. However, when it comes to thyroid surgery, there are just a few outcomes for measures or scales that indicate surgical difficulties and are only defined intra- or postoperatively. To the best of our knowledge, no preoperative score exists that may evaluate predictors of difficulties in total thyroidectomy and identify individuals at higher risk of problems. We discovered certain preoperative predictors of substantial surgical difficulties and, as a result, a greater risk of complications in our study. The variables studied were sex, BMI, neck length and extensibility, thy void volume, hyper-vascularization, and thyroiditis.

Tnumber in complications (haemorrhage, permanent or temporary RLN damage, as well as permanent or transient hypoparathyroidism), the duration of the operation, and the length of hospitalization related to each group. The variables are the features of the patient or the thyroid condition that might impact the surgical difficulties. These factors were chosen based on our surgical experience, along with previous scores.

Schneider, *et al*., [Wang, T.S. *et al*., 2011]. They were presented with a Thyroidectomy difficulties Scale (TDS) in 2014 to anticipate surgical difficulties through the postoperative evaluation of four characteristics (vascularization, friability, fibrosis, and gland size). After analyzing the data, they discovered that greater thyroid gland vascularization is more closely associated to hyperthyroidism and that the existence of thyroiditis impacts the progression of parenchymal fibrosis. According to the authors, high scores were associated with longer operational durations and a higher risk for complications. After analysing the data, they discovered that greater

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thyroid gland vascularization is more closely associated to hyperthyroidism and that the existence of thyroiditis impacts the occurrence of parenchymal fibrosis.

Mok, *et al*., [AES Guidelines, 2007; Youngwirth, L. *et al*., 2010]. Demonstrated that the incidence of complications was minor, with a homogenous distribution among the three patient groups. There have been no reports of permanent hypoparathyroidism and RLN damage. In contrast to earlier research, we can claim that the categories of surgeries with difficulty in thyroidectomy defined by our score increase the rate of complications. Even a significant association between the amount of time of hospitalization and our score was not found.

CONCLUSIONS

Total thyroidectomy is an essentially safe treatment, even though it exposed fewer parathyroid glands as well as recurrent laryngeal nerves and more surgical risk compared to unilateral thyroid lobectomy. Local problems, including recurrent laryngeal nerve paralysis with wound complications, are predicted to occur at a rate of around 3%, with postoperative hyperthyroidism occurring in about 4% of patients. Neither infection nor airway issues appear to impact the risk of postoperative patients, with only hypocalcaemia (transient) having a significant effect on postoperative patients.

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Source of support: Nil; **Conflict of interest:** Nil.

Cite this article as:
Al-Dujaily, M.A.A., Menshi, F.N., Omar, A.F. and Abdulkafi, A.Q. "Analysis of Thyroidectomy Results and Identification of Postoperative Complications for Iraqi Patients." *Sarcouncil Journal of Multidisciplinary 3.6* (2023): pp 1-8.

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