

Thyroid Surgery: Techniques, Complications, and Patient Outcomes

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M.B.CH.B,F.I.C.M.S (General surgery) Abstract:

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Abstract: When the thyroid gland, which is situated in the front section of the neck, becomes infected or otherwise unhealthy, the surgeon doing the thyroidectomy will remove all or part of the gland. This study aimed to know the Thyroid Surgery: Techniques, Complications, and Patient Outcomes. An analysis of demographic data was performed using IBM SOFT SPSS 22 in retrospective research including 85 patients who had thyroidectomy procedures performed at various Iraqi hospitals between 2018 and 2020. Data on the gender, age, and developmental status of patients who had surgery within the specified time period was retrieved from their medical records. Hypercalcemia affected 12.9% of patients, wound hematoma 8.2%, and external branch of superior laryngeal nerve palsy 5.9% of the 85 patients included in this research. The results showed a favorable and statistically significant correlation ($p = 0.056$) between the occurrences of the various thyroid surgical complications.

Introduction:

Among the many procedures performed in the head and neck region, thyroidectomy ranks high in frequency. Both short-term and long-term issues may result from it (1). There is a wide range of severity among these transient problems, from hardly noticeable to potentially life-threatening (2).

In most cases, the level of difficulty that patients face after surgery is proportional to the complexity of the procedure and the level of expertise of the healthcare providers involved (3,4). Hypoparathyroidism, recurrent laryngeal nerve damage, and cervical hematomas are among the most prevalent (5,6).

When the surgeon has a thorough understanding of the patient's physiology and pathology, problems during thyroid and parathyroid surgery are quite uncommon (7,8). Complications are common in oncology surgery for malignant illnesses or in cases when there has been prior surgery (9). While certain postoperative problems, such as skin edema, were not life-threatening, others, including hemorrhage or breathing obstruction, might be fatal (10). Thankfully, they are now uncommon because of improved preoperative preparation, and the majority of them may be avoided. Bleeding, respiratory issues, hypothyroidism, recurrent nerve paralysis, and incision-related disorders are the most common postoperative complications (11).

Hormone replacement therapy is necessary for patients who have terminal hypothyroidism as a result of complete thyroidectomy. Surgeons who undertake these procedures maintain a steadfast focus on its diagnosis, treatment, and prevention (12). The development of this work is driven by the need to identify and relate the problems that are certain to occur as a consequence of these surgical methods to specific anatomical characteristics (13).

In a study conducted by Quinn Wright in 2005, it was found that thyroid surgery has a low complication rate (less than 10%). The most common complication was calcium deficiency following thyroid removal

(15%), which occurred in 15% of patients either immediately after the operation or after some time had passed. This rate was significantly lower than other surgeries of similar complexity (14).

Objective

To know the Thyroid Surgery: Techniques, Complications, and Patient Outcomes.

Methods and patients

As part of a retrospective investigation, researchers in Iraq looked at 85 individuals who had thyroidectomy procedures done at various institutions between 2018 and 2020. Patients' medical records were reviewed in order to compile demographic information on those who had surgery within the specified time frame, including gender, age, and stage of development. Excel spreadsheets were used for data processing and tabulation. Tables including all data and statistical graphs were used to display the findings.

Research Design:

The research looked back at 85 people who underwent thyroid surgeries done between 2018 and 2020. The procedures that were carried out included thyroidectomy alone, thyroidectomy with lymphadenectomy in the neck, and near-total thyroidectomy.

In order to assess the potential scope of the operation, a multidisciplinary team including a surgeon, endocrinologist, pathologist, and imaging expert assessed all patients prior to surgery. All patients primarily had thyroid ultrasonography and fine-needle biopsy to confirm the diagnosis and describe the lesions from an ultrasound perspective. In order to ensure that the reported blood levels are in line with the potential surgical removal of the parathyroid gland, postoperative serum calcium testing has also been conducted in patients undergoing complete thyroidectomy.

There is always the chance of an unpleasant response to general anesthesia during a thyroidectomy, as there is with any major operation. Other hazards include excessive bleeding and infection.

Data analysis using statistics

The demographic data were analyzed with the patients, and the frequency values were recorded with the percentages of the healthy characteristics.

Statistical data were obtained using IBM SOFT SPSS 22.

RESULTS

Table 1- Baseline characteristics of a patient who underwent thyroidectomy in Iraq of this study, N=85

Variable	f	P%
AGE		
21-30	24	28.2
31-40	18	21.2
41-50	18	21.2
51-60	25	29.4
BMI		
27-30	53	62.4
32-33	32	37.6
comorbidities		
heart disease	10	11.7
type 1 diabetes	24	28.2
Obesity	18	21.2
Chronic renal failure	12	14.1
other diseases	21	24.7
Sex		
Male	44	51.8
Female	41	48.2
Reasons for thyroidectomy		
Thyroid tumors	12	14.1
Goiter	17	20
An increase in the level of thyroidhormone	27	31.8
Thyroid nodules.	29	34.1

Table 2- Type of complications generated as a result of thyroidectomy complications

		Frequency	Percent
	External branch of superior laryngeal nerve palsy	5	5.9

Valid	Hypocalcemia	11	12.9
	not exist	58	68.2
	Recurrent laryngeal nerve palsy	4	4.7
	Wound hematoma	7	8.2

Table 3 Results for Different Types of Thyroid Excisions Performed in Iraq thyroid surgical procedure

		Frequency	Percent
Valid	Total thyroidectomy	24	28.2
	Thyroid lobectomy	43	50.6
	Partial thyroidectomy	18	21.2
	Total	85	100.0

Table 4: Relationship between Individuals, Thyroid Surgery Type, and Complications

Variable	Complication	Total thyroidectomy	Thyroid lobectomy	Partial thyroidectomy
R correlation	1.0	+0.981*	0.65	-0.43
s-sig	--	0.056	0.087	0.24
N	85			

Discussion:

The participants in this research varied in age from twenty-one to sixty years old, and 85 of them had thyroidectomy procedures performed in Iraqi hospitals. Demographic information and statistics were gathered from these facilities.

Although there were 44 male patients and 41 female patients, there were no statistically significant differences between the sexes. Thyroidectomy was determined to be the most significant cause for the procedure based on the findings of this research. The operation typically lasted 45 to 60 minutes. When a definitive diagnosis is not possible, surgical removal of any nodules that may be cancerous is the primary course of therapy. Impairment in speech and/or breathing is the most frequent consequence of thyroid procedures caused by injury to the recurrent laryngeal nerves (15,16).

Damage to the laryngeal nerves happens in 5.2-15% of thyroidectomy cases, according to some authors; when the procedure is over, the surgeon must check the site thoroughly to make sure there is no bleeding (17,18). In any case, throughout that time just after the procedure, 12% of patients had hypocalcemia (19).

There was a rate of hypocalcemia of 12.9% in eleven individuals. Inconsistent hypocalcemia and hypoparathyroidism terminology across research make it hard to compare the results of thyroid surgeries side by side (20).

In the 2009 UK Darwin Coon Study, which was conducted following imaging examinations utilizing ultrasonography and a needle biopsy, the prevalence of hypocalcaemia was 50% among patients who received complete thyroidectomy, a procedure that is typically included in most studies. When this occurs, the last resort in diagnosis and therapy is to remove the gland. The third possible cause is a benign nodule that is becoming harder to monitor or grows in size over time. In rare instances of hyperthyroidism that does not respond to medication or in cases where anti-thyroid surgery is not an option, the patient may experience bleeding or hematoma formation. From a clinical standpoint, when there isn't enough drainage, the patient's breathing becomes worse, and the front of their neck is deformed. This calls for immediate surgical intervention in the form of a wound revision.

Other research has shown that more complex operations, often performed on people with thyroid cancer, might cause unusual problems. Damage to the major neck arteries and major nerves was a telltale sign.

Conclusion:

Hypocalcemia is more common in individuals who had total thyroidectomy, according to the study's findings.

A 0.056 p-value indicates a positive and statistically significant link between the frequency of the sort of issues that might occur after thyroid surgery.

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