



Communication

Thyroid Surgery in a Conflict Zone: A Year-long Review at the Timbuktu Regional Hospital

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Abstract

Objective: To study cases of thyroidectomy in war situations at the Timbuktu hospital. **Methodology:** This is a prospective cross-sectional descriptive study carried out in the ENT-CCF department of Timbuktu hospital over a one-year period from August 2024 to July 2025. All total or partial thyroidectomy with a medical file with an operating report, regularly updated, were included. **Results:** Between August 1 and July 31, 2025, we collected 32 cases of thyroidectomies in the department, which represents 20.12% of all surgeries (n=159) performed in the department during this period. The female sex was in the majority, i.e., 96.87%, with a ratio of 1 man to 31 women. Age range of [40-60] represented 56.25% with a mean of 41.87 years with a standard deviation: 10.89 years. The reason for consultation was anterocervical swelling 90.60%, signs of compression 3 cases. 59.36% of our patients were classified in the TIRADS on thyroid ultrasound. Multinodular goiter was the majority surgical indication 37.5%. The types of thyroidectomy performed are: Lobo-isthmectomy 47%, Total thyroidectomy 31%, lobectomy: 13% and subtotal thyroidectomy: 9%. **Surgical complications:** Surgical wound infection 1 case, Trauma to the digestive tract 1 case. The histological types are vesicular adenoma 87.5% and papillary carcinoma 12%. **Conclusion:** thyroidectomy is a surgical procedure that requires perfect control of the anatomy of the neck to minimize complications in conflict areas where the technical platform is limited.

Keywords

Thyroidectomy, Lobo-isthmectomy, Conflict

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1. Introduction

Thyroidectomy is a surgical procedure consisting of the partial or total removal of the thyroid gland [1]. It can be simple or complex depending on the indication and experience of the practitioner [2, 3]. Its practice requires a perfect knowledge of the anatomy of the neck [3]. Its incidence in France was 71 cases per 100,000 inhabitants in 2014 (4). Its indications are dominated by thyroid nodules, uncontrolled hyperthyroidism, thyroid cancer and aesthetics [1, 2]. The risks of bleeding, nerve and parathyroid are the main pitfall of thyroidectomies [2, 4, 5].

The Timbuktu hospital has been covering areas of persistent insecurity since 2012; with periods of exacerbation marked by armed clashes; which is a factor influencing the movement of patients to the hospital as well as the presence of qualified personnel for the management of certain pathologies, this is how we initiated this study in order to know data on thyroidectomy in an armed conflict zone. Our objective was to study cases of thyroidectomies in a zone and conflict.

[40-60[represented 56.25% with a mean of 41.87 years with a standard deviation: 10.89 years (Figure 2). The majority of our patients came from rural areas of the region, 75%. A notion of familial goiter was found in 22%.

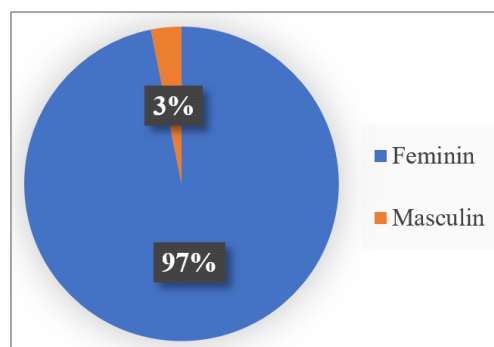


Figure 1. Distribution of the patients by sexe.

2. Methodology

This is a prospective descriptive observational study carried out in the Ear Nose throat and Head and Neck Surgery (ENT-HNS) department of Timbuktu Hospital over a period of one (1) year from August 2024 to July 2025. All patients who had undergone total or partial thyroidectomy were included in the study, who had a medical file with an operative report and the result of the histopathology of the available operative specimen. The variables studied were age, sex, surgical indication, surgical procedures, intra- and post-operative complications, treatment of complications and evolution. Patient consent was obtained in advance and the study sheets were anonymous in order to respect the confidentiality of patients.

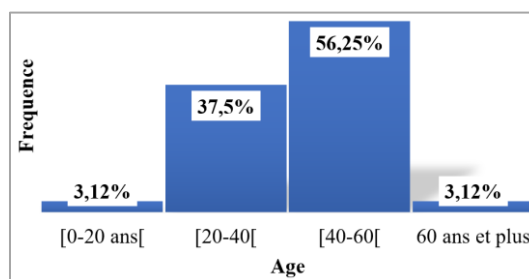


Figure 2. Distribution of the patients by age.

3. Results

Between August 1 and July 31, 2025, we collected 32 cases of thyroidectomies in the department, which represents 20.12% of all surgeries (n=159) performed in the department during this period. The female sex was in the majority, i.e. 96.87%, with a ratio of 1 man to 31 woman (Figure 1). Age range of

Laterocervical swelling was the most frequent reason for consultation (87.75%). All our patients have had cervical ultrasound. Our patients were classified as Eu-TIRADS 3 in 59,36. Multinodular goiter was the most common surgical indication, accounting for 40.5% (Table 1). The most commonly performed surgical technique was lobo-isthmectomy (in 47% (Table 2). Complications were 1 case of esophageal injury and one case of surgical wound infection (Table 3). The histology of the operative specimens concluded that vesicular adenoma was present in 87.5% and papillary carcinoma in 12.5% (Table 3).

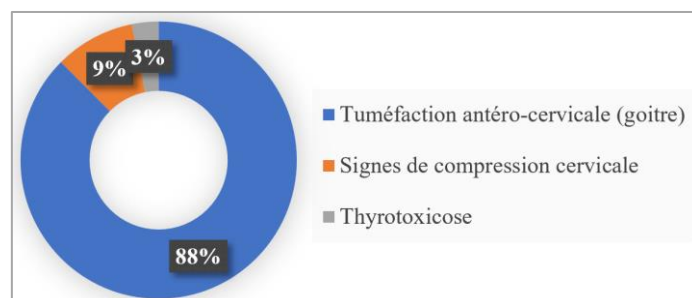


Figure 3. The motif of the consultation.

Table 1. Distribution of patients according to thyroidectomy indications.

Indications for thyroidectomy	Workforce	Percentage%
Plunging goiter	2	6,25
Homogeneous goiter	7	22
Multi nodular goiter	13	40,5
Suspected thyroid cancer	2	6,25
Hyperthyroid goiter/Graves' disease	1	3
Thyroid nodule	7	22
Total	32	100

Table 2. Distribution of patients by type of surgery.

Type of surgery	Workforce	Percentage%
Partial thyroidectomy	Subtotal thyroidectomy	3
	Lobo-isthmectomy	15
	Lobectomy	4
Total thyroidectomy	10	31
Total	32	100

Table 3. Distribution of patients by type of surgical complications.

Surgical complications	Workforce	Percentage%
Singles	30	94
Surgical site infection	1	3
Involvement of the digestive tract	1	3
Total	32	100

Table 4. Distribution of patients according to the histological result of the thyroidectomy specimen.

Histological types of the surgical specimen	Workforce	Percentage%
Carcinomic papillary	4	12,5
Vesicular adenoma	28	87,5
Total	32	100

4. Discussion

4.1. Epidemiological Aspects

1) Frequency

We collected 32 cases of thyroidectomies in the ENT and Head and Neck Surgery department of Timbuktu Hospital during one year of study, which represents 20.12% of all surgeries performed (n=159) in the department during this period. Sissoko T et al. had almost the same result: 31.6 cases per year for five years [6]. Tea Z. B and Tanon have significantly lower levels than those found in our study with 1.83% respectively [3, 7]. Jihad R. and Ouedraogo P. B. had rates of 150 cases per year over two years and 72.8 cases per year over five years, respectively, which are clearly in line with ours [8, 9]. Our low rate could be explained on the one hand by difficulties in getting to the hospital in Timbuktu due to insecurity and on the other hand, a very limited human resource and technical platform.

2) Gender

The female sex was in the majority 96.87% and 3.13% with a sex ratio of 1H/31F (0.032). We share the same observations with those found in the literature as well as Sissoko T in Mali, Maryam C in Morocco and Tea Z. B in Côte d'Ivoire were predominantly female, with 88.4%, 74% and 92.9% [3, 6, 10]. The female predominance is explained by the high frequency of thyroid pathologies in women due to risk factors such as multiparity. Indeed, in men, thyroid pathology is generally rarer, but the risk of thyroid cancer is higher in men than in women [11].

3) Age

The average age of our patients was 41.87 years with the extremes ranging from 20 years to 80 years of age, of which the age group of 40 and 60 years represented 56.25%.

The average age in the series of Maryam was 50 years old with extremes of 21 and 85 years old; and the most affected age group is between 41 and 60 years old with a percentage of 65.34% [10]. Sissoko T Relates to EU as an average age of 46.89 years [6]. We note in these studies that the average ages are slightly higher than those of our series. This could be due to insecurity in the region. Indeed, young people have the ability to go to the hospital more easily to be taken care of in this situation.

4) History of familial goiter:

The notion of familial goitre must be sought in each case of goitre, because genetic factors are involved in the genesis of this pathology [9]. Agreement in homozygous twins exceeds 40% [12]. We found that 22% of our patients had a notion of familial goiter; which is slightly higher than that of Sissoko T [6] reported that 14.39% had a history of familial goiter, Jihad R and Ouedraogo P. B had the notion of familial goitre in 9.67% and 9.34 [8, 9].

4.2. Clinical Aspects

Reason for consultation:

In our study, laterocervical swelling was the most frequent

reason for consultation (87.75%). Our results corroborate those of Keïta M and Barry M. S who had cervical swelling as the most frequent reason for consultation with 79.4% and 86% respectively [1, 13].

All our patients have had cervical ultrasound. Our patients were classified as Eu-TIRADS 3 and 4b in 87.54 and 12.46%. In the literature, stage 4B corresponds to a risk of malignancy of 10 to 80%, the nodules have central hypervascularization and/or irregular boundaries and/or microcalcifications [14]. CT allows a detailed morphological study of the intrathoracic portion of the goiter that is inaccessible to ultrasound. It will specify the lower and posterior limits of the goitre; its relationship with the large cervicothoracic vessels and with the oesotracheal axis [6].

Multinodular goitre was the most represented surgical indication (40.5%), followed by thyroid nodule and homogeneous goiter with 22% each. We share the same observations with the literature, in particular Barry, Zakaria and Tiguida who have 50%, 77% and 77.6% respectively. Poumale et al. have simple goiter as the most frequent indication with 34.7% as Balde disc has had Graves' disease mainly with 34%. This high frequency in our study is explained by the predominance of the female sex, which is a risk factor for this anatomical clinical form [1, 2, 5, 15].

The most common types of thyroidectomy performed were lobo-isthmectomy and total thyroidectomy, with 47% and 31% respectively. Tiguida and Poumale made the same observation that they had lobo-isthmectomy as the type of surgery frequents it with 56.11 and 55.5% respectively [5, 6]. Balde had the total thyroidectomy as the most performed with 66.92% [2]. The type of thyroidectomy is usually placed preoperatively by the surgical indication but may vary intraoperatively in some cases. In cases of total thyroidectomies, patients were supplemented with thyroid hormones.

In our studies, the histological types found were vesicular adenoma 87.5% and papillary carcinoma 12.5%. Sissoko T and Balde had a malignancy rate of 2.16% and 14.52%. This rate increases with the presence of certain factors such as the notion of cervical irradiation and the genetic predisposition to thyroid tumors [6, 14].

In our study, the complications were 1 case of esophageal lesion and one case of infection of the operative wound, i.e. 2 cases. In the literature, the most frequently encountered complications are hemorrhagic complications, neurological complications, thyroid insufficiency and hypoparathyroidism. The control of cervical anatomy and the consideration of thyroid deficits make it possible to reduce these orbits after thyroid surgery [16].

5. Conclusion

Thyroidectomy is a surgical procedure that requires perfect control of the anatomy of the neck to minimize complications. The indications and techniques do not change in conflict zones even with a limited technical platform.

Abbreviations

ENT-HNS	Ear Noose Throat and Head and Neck Surgery
EU-TIRADS	European Thyroid Imaging Reporting and Data System
HU	Hospital University

Author Contributions

Idrissa Konate: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Writing – original draft

Oumar Konate: Conceptualization, Formal Analysis, Funding acquisition, Investigation, Methodology, Writing – original draft

Boubacar Sidiki Diamoutene: Validation, Visualization

Aboubacrine Wangara: Validation, Visualization

Kassogue Djibril: Validation, Visualization

Boubacar Sanogo: Validation, Visualization

Abdoulaye Oumar Bakayoko: Validation, Visualization

Tata Toure: Validation, Visualization

Zacharia Traore: Validation, Visualization

Fatogoma Issa Kone: Resources, Supervision, Validation, Visualization

Mohamed Amadou Keita: Resources, Supervision, Validation, Visualization

Conflicts of Interest

The authors declare no conflicts of interest.

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