International Journal of Otolaryngology and Head & Neck Surgery, 2024, 13, 157-167
https://www.scirp.org/journal/ijohns
ISSN Online: 2168-5460
ISSN Print: 2168-5452

Thyroidectomy: Frequency and Indications in the General Surgery Department of the Hôpital National Ignace Deen/CHU de Conakry

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How to cite this paper: Barry, M.S., Diallo, M.M.R., Fofana, H., Kpossou, V.B., Barry, B., Touré, A. and Diallo, A.T. (2024) Thyroidectomy: Frequency and Indications in the General Surgery Department of the Hôpital National Ignace Deen/CHU de Conakry. *International Journal of Otolaryngology and Head & Neck Surgery*, **13**, 157-167.
https://doi.org/10.4236/ijohns.2024.133015

Received: February 28, 2024
Accepted: May 13, 2024
Published: May 16, 2024

Abstract

Introduction: Thyroidectomy is a surgical procedure to remove all or part of the thyroid gland. The aim of this study was to report the results of thyroidectomy in the general surgery department of the Hôpital national Ignace Deen/CHU de Conakry. **Methodology:** This was a retrospective study, of seven (07) years (January 1, 2016 - August 31, 2023), in the General Surgery Department of the Ignace Deen National Hospital-CHU in Conakry. We included all records of patients admitted and operated on for thyroidectomy and with up-to-date medical records. The variables were epidemiological, clinical and therapeutic. **Results:** During the study period, we recorded 3221 cases of surgery, including 40 thyroidectomies (1.24% of cases). The average age was 42.4 years. Women were the most represented, with a sex ratio of 0.16. The reason for consultation was anterior cervical swelling in 86% (n = 25) of cases, followed by signs of cervical compression 21% (n = 6) and signs of thyrotoxicosis 31% (n = 9). Indications for thyroidectomy were dominated by homogeneous goitres in 69% (n = 20) of cases, basedow's disease in 20.7% (n = 6) and nodular goitres in 6.9% (n = 2) of cases. The surgical procedures were lobo-isthmectomies in 72.4% (n = 21), subtotal thyroidectomies 13.8% (n = 4), total thyroidectomies 10.3% (n = 3). Postoperative follow-up was straightforward in 69% (n = 20). Complications included haemorrhage in 20.7% (n = 6) and recurrence in 6.9% (n = 2). The average hospital stay was 7 days. **Conclusion:** Thyroidectomy is a relatively frequent surgical procedure in our department. Indications are dominated by homogeneous goitres. Morbidity is related to hemorrhage. Rigorous hemostasis could improve the quality of thyroidectomy.

Keywords

Thyroidectomy, Indication, Ignace Deen

1. Introduction

Thyroidectomy is a surgical procedure to remove all or part of the thyroid gland [1]. It is indicated for a variety of conditions, such as thyroid nodules suspected of cancer, goiter, uncontrolled hyperthyroidism, Graves' disease, recurrence of nodules, and increased risk of thyroid cancer due to family history or abnormal screening test results [2].

Complications following thyroidectomy can be divided into two categories: temporary and permanent. Temporary complications include hypocalcemia, hoarseness, vocal cord paralysis, hematomas and infections. Permanent complications, on the other hand, include hypothyroidism, hypoparathyroidism, unilateral vocal cord paralysis and hoarseness [3]. It should also be noted that complications such as temporary hypocalcemia, post-operative bleeding and keloid formation can also occur [4]. Today, the specific risks associated with this surgical procedure have been significantly reduced thanks to the precise codification of the technique. However, these risks persist, and the procedure will always present potential hemorrhagic, nervous or parathyroid risks [5]. In 2014, the thyroidectomy rate in France was 71/100,000 inhabitants, varying from 50 to 120 depending on the department. The trend is towards a decrease in procedures, as it goes from 48,000 procedures in 2012 to 42,000 in 2016 [6]. In a study carried out in Benin by Vodouhoue UD *et al.*, 76 thyroidectomies were performed, representing 21% of surgical procedures carried out at Suru-léré University Hospital [7]. Similarly, in Mali, a study carried out in 2019 by Sissoko T, patients operated on for nodular goiter accounted for 76.2% of thyroidectomy cases, overall morbidity was 9% and mortality was nil [5]. In 2010, in the same department (in Guinea), Touré *et al.* reported 230 cases of thyroid nodules in 10 years, representing a frequency of 1.03% [8].

Socio-cultural stereotypes in our societies contribute to a significant delay in the medical diagnosis of patients before they consult a doctor. In some communities, this delay is even perceived as an aesthetic feature in young girls, or as an unavoidable indicator of successful puberty.

The aim of this study was to investigate thyroidectomy and its outcomes in the general surgery department of the Ignace Deen CHU National Hospital in Conakry.

2. Methodology

This was a seven (07)-year retrospective study from January 1, 2016 to August 31, 2023, carried out in the General Surgery Department of the Ignace Deen National Hospital-CHU in Conakry.

It is a university hospital department with a triple mission. It is a national ref-

erence service. During the study period, we targeted all records of patients admitted and hospitalized for surgical pathology in the department. The study population consisted of all patients admitted and operated on in the department for thyroidectomy, whatever the indication during the study period.

We included in this study all patients admitted and operated on for thyroidectomy, whatever their age, sex or indication, and who had an up-to-date medical record.

We excluded all records of patients who had not undergone surgery and those whose records were not up to date.

The study material consisted of patient files, consultation registers and operative reports. The variables were epidemiological, clinical and therapeutic. Limitations of this study were the lack of biological and histological data, and the absence of data concerning medium- and long-term follow-up of patients.

3. Results

During the study period, we recorded 3221 surgical procedures, including 40 thyroidectomies (1.24% of cases). The average age was 42.4 years. Women were the most r According to origin, the Conakry region was the most represented with 58.6% (n = 17), followed by the Kindia region with 13.8% (n = 4) of cases (see Table 1). Housewives were the most represented with 48.3% (n = 14) of cases, followed by self-employed patients with 17.2% (n = 5) of cases (see Table 2) represented, with a sex ratio of 0.16:1.

Table 1. Distribution of cases according to origin.

Administrative	Number	Percentage
Boké	2	6.9
Conakry	17	58.6
Faranah	1	3.4
Kankan	2	6.9
Kindia	4	13.8
N'Zérékoré	2	6.9
Unspecified	1	3.4
Total	29	100.00

Table 2. Distribution of patients according to profession.

Profession	Number	Percentage
Pupil/Student	3	10.3
Official	3	10.3
Household	14	48.3
Liberal profession	5	17.2
Unspecified	4	13.7
Total	29	100.0

The reason for consultation was anterior cervical swelling in 86% (n = 25) of cases, followed by signs of cervical compression 21% (n = 6) and signs of thyrotoxicosis 31% (n = 9) (see Table 3). Physical signs were d Preoperative diagnosis ominated by the basis-cervical anterior lobar mass (see Table 4). According to preoperative diagnoses, homogeneous goiters were the most represented with 69% (n = 20) (see Table 5). The operating indications were dominated by functional genes in 75.9% (n = 22) (see Table 6). Operative procedures were dominated by lobo-isthmectomies in 72.4% (n = 21) of cases (see Table 7). Post-operative management was straightforward in 69% (n = 20). Complications included haemorrhage in 20.7% (n = 6) of cases and recurrent damage in 6.9% (n = 2). No deaths were recorded. The average hospital stay was 7 days.

Table 3. Distribution of patients according to the reason for consultation.

Reason for consultation	Number	Percentage
Anterior cervical swelling	25	86
Signs of compression	6	21
Signs of thyrotoxicosis	9	31
Total	29	100

Table 4. Distribution of patients according to physical signs.

Physical signs	Number	Percentage
Anterior basal cervical mass with vascular signs	6	20.7
Anterior lobar basi-cervical mass	17	58.6
Anterior lobar basi-cervical mass + Exophthalmos	2	6.9
Anterior lobar basi-cervical mass + Isthmo-lobar basi-cervical mass	3	10.3
Anterior lobar basi-cervical mass + Nodular basi-cervical mass	1	3.4

Table 5. Distribution of cases according to preoperative diagnoses.

Indications	Number	Percentage
Homogeneous goiter	20	69
Nodular goiter	2	6.9
Graves' disease	6	20.7
Thyroid nodule	1	3.4
Total	29	100

Table 6. Distribution of patients according to operative indications.

Indications for thyroidectomy	Number	Percentage
Thyrotoxicosis	8	27.6
Functional gene	22	75.9
Suspicion of malignancy	1	3.4
Aesthetic indication	18	62.1

Table 7. Distribution of cases according to surgical procedures.

Operative procedure	Number	Percentage
Lobo-isthmectomies	21	72.4
Subtotal thyroidectomy	4	13.8
Total thyroidectomy	3	10.3
Partial thyroidectomy	1	3.4
Total	29	100

4. Discussion

The frequency of thyroidectomies we found in this study was lower than the data reported in the literature, notably the studies of Razafindrakoto RM *et al.* in Madagascar [9] who reported 567 cases of thyroidectomies out of a total of 2135 surgical interventions carried out over a period of 5 years, *i.e.* a rate of 26.6%, while in Niger, Illé S and coll. [10] performed 236 cases of thyroidectomy over the same period with a rate of 8.51%. In Senegal, a rate of 8.51% was found by Diédhiou D. *et al.* [11], while in the Central African Republic, Poumale F. *et al.* [12] reported a rate of 3.5%. The frequency of a thyroidectomy varies from one department to another, and this variation would be linked: on the one hand, to the surgical profile of the departments, because certain series were carried out in ENT departments where thyroid pathologies have a higher proportion than in general surgery department; on the other hand, to the geographical distribution of thyroid pathology, particularly endemic goiters. Our study was carried out in a General Surgery department. The average age of the patients found in the series was related to the data reported by Diedhiou D in Senegal [11]. Goiter is a predominant condition in young adults, as demonstrated in our study.

During our study, a clear predominance of the female sex was observed (*i.e.* 16 men per 100 women). This observation is in relation to data from the literature [10] [11] [13] [14]. The role of sex is not yet fully elucidated, however, it is established that female sex is identified as a recognized risk factor in thyroid pathology. This female predominance can probably be attributed to the influence of estrogen during puberty. Indeed, the thyroid has receptors for these female hormones, which reduce the uptake of iodine by the thyroid gland. Additionally, increased estrogen levels promote increased synthesis of thyroxine-binding glo-

bulin in the liver, which increases the concentration of bound and inactive thyroid hormones. These two mechanisms likely contribute to the genesis of thyroid disorders. Regarding origin, most of our patients came from the Conakry region. It should be noted that the study was carried out in Conakry, so many of the patients come from inside the country (in other regions) and give one of the districts of Conakry as their place of residence. Also some patients from the interior of the country are operated on on-site in regional hospitals. Housewives were the most represented, followed by patients with a liberal profession. This high frequency of this socio-professional layer could be explained by the large number of housewives in our country. Anterior cervical swelling was the main reason for consultation in our study. Anterior cervical swelling was the main reason for consultation in the Ille S. *et al.* series. and Keita A. *et al.* [10] [14]. According to Diedhiou D. in Senegal, thyrotoxicosis was the reason for consultation in 61.4% and in 6.2% of cases, it was signs of cervical compression (dysphonia, dysphagia, dyspnea) [11]. The reason for consultation would be linked to the functional mode of expression of the thyroid pathology, but also to the mode of recruitment. Concerning the latter, patients referred by health workers will be received in the surgical department with an established diagnosis (thyrotoxicosis, nodular goiter, etc.); On the other hand, patients coming on their own will be seen for cervical swelling or for functional problems (dysphagia, dysphonia, dyspnea).

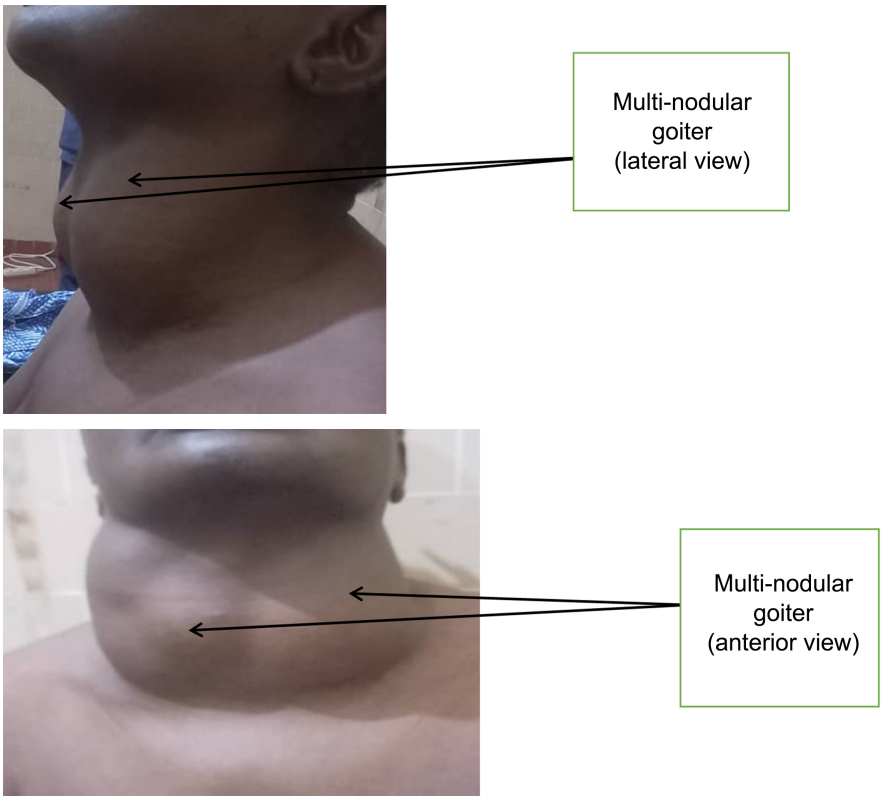
In our study, the physical examination found an anterior lobar basi-cervical mass in most cases, associated either with vascular signs, with proptosis or with an isthmo-lobar basis-cervical mass. Preoperative diagnoses were dominated in our study by homogeneous and nodular goiters. The high frequency of homogeneous goiters could be explained by the fact that other forms of thyroid tumors are treated in the ENT and Surgical Oncology departments. The indications for operation were dominated by functional genes and thyrotoxicosis. In Niger, Illé S *et al.* reported that the indications for operation were dominated by multi-nodular or thyroid goiters presenting functional problems (39% of cases), followed by goiters suspected of malignancy (35% of cases), simple goiters came in third position (18% of cases). case) [10]. In Senegal, Diédhiou D. *et al.* had found that toxic goiters constituted the cause of thyroidectomy [11], while in the Central African Republic, goiters suspected of malignancy came first [12]. The indications for thyroid surgery are currently well-defined and specified in the recommendations of learned societies on the management of goiters and thyroid nodules [15]. Operative procedures were dominated by loboisthmectomies, followed by subtotal thyroidectomy. A study carried out in the same department in 2010 showed subtotal thyroidectomy in 55.21% of cases followed by lobectomy for thyroid nodules [8]. In China, Sheng Y. demonstrated 17 subtotal thyroidectomies compared to 53 total thyroidectomies [16]. In our context, the high frequency of lobo-isthmectomy was linked to the importance of cases of homogeneous and nodular goiters with a benign appearance.

The postoperative course was generally satisfactory, however, we recorded complications such as hemorrhage and transient recurrent damage. We have not recorded any deaths. This low morbidity in our study can be attributed to advances in anesthesia resuscitation, the finesse of the operating techniques performed by an experienced team, and rigorous postoperative monitoring. These elements explain the reduction in complications and deaths linked to thyroid surgery today. The average length of hospitalization was reasonable in our series. The average hospital stay period ranges between 4 and 5 days, with a shorter average of 3.4 days identified by Coulibaly *et al.* [17]. In contrast, in Western countries, some patients can return home on the second day following surgery, as highlighted in the study by Guerrier B *et al.* [18].

5. Conclusion

Thyroidectomy is a relatively common surgical procedure in our department. It is a condition of young female adults. Housewives were the most represented. Preoperative diagnoses were dominated by homogeneous goiters. The indications for operation were functional discomfort. Morbidity was related to hemorrhage. The introduction of new operating techniques (coolio-surgery) and rigorous hemostasis could improve the quality of thyroidectomy.

6. Iconographies

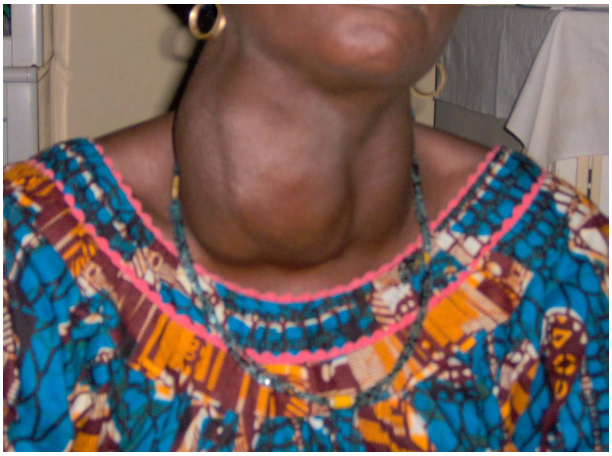


This is a 65-year-old lady admitted for multi-nodular goiter in whom a lobo-isthmectomy had been performed.

A 42-year-old gentleman with Graves' disease before intervention in our department.

The same gentleman after surgery.

This is a 38-year-old lady, seen for a complicated goiter (hematoma) in our department.



This is a lady seen for a multinodular goiter in our department.

The same patient after the surgical procedure.

This is a 28 year old gentleman, who is on the operating table.

The operating room of this 28-year-old gentleman.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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