



## Research Article

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# Epidemiological and Clinical Characteristics of Goiter Operated Patients in Kisangani (Democratic Republic of Congo)

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## Abstract

Goiter is a real public health problem in the world and particularly in the Democratic Republic of Congo (DR Congo). We conducted this study with the aim of studying goiter in order to identify the profile of patients with goiter surgery. **Materials and methods:** We report a retrospective study, documentary analysis spread over 2 years, from January 1, 2018 to December 31, 2019, on 52 cases of goiter scheduled and operated in the surgical department of the Millennium Polyclinic in Kisangani, DR Congo. The data were encoded in the Excel file and grouped together in the form of tables then analyzed after percentage calculation. **Results:** Surgical goiter is a disease with a significant frequency in our environment. Most of the operated patients were female with 90.3% and came from the urban area in Kisangani with 34 cases or 65.3%. The clinic was marked by left and right lobar goiter as well as dysphonia and dysphagia as a symptom of compression. **Conclusion:** Goiter is still a serious public health problem in the Democratic Republic of Congo. The majority of patients have large, old goiter with noticeable respiratory symptoms.

**Keywords:** Epidemiological, Clinical, Goiter, Kisangani.

## INTRODUCTION

Goiter is the enlargement of the thyroid gland <sup>[1]</sup>. It is an endemic disease that manifests clinically as a swelling in the anterior neck region <sup>[1]</sup>.

The global prevalence of goiter has been estimated at 15.8% according to the World Health Organization (WHO) <sup>[2]</sup>. The main cause is iodine deficiency. This constitutes a major public health problem in the world and extends to 130 countries with 38% of the world population affected <sup>[3]</sup>.

In France, goiter affects less than 5% of the school-age population and 10% of the adult population. In the United States, the prevalence of clinical goiter is 5.3% in women and 0.8% in men <sup>[4]</sup>.

In Turkey, multinodular goiter was the first indication for thyroidectomies. Sinking goiters represent 6.3% of thyroidectomies in this series <sup>[5]</sup>.

In a study, OGBERA AO *et al*, found that the prevalence rate of endemic goiter was between 1.2% to 6% in Central Africa <sup>[6]</sup>.

A survey carried out in the Likouala region, in northern Congo, near the borders of Cameroon and Central Africa, had shown a prevalence of goiter of 10.3%, among goiter subjects 5.8% were at stage 3 of Perez and 4.57% in stage 2 <sup>[7]</sup>.

Burkina Faso is an endemic state with an estimated prevalence rate of over 20% <sup>[8]</sup>.

In the Democratic Republic of the Congo (DRC), the prevalence of goiter is estimated at 28.4% <sup>[9]</sup>.

KAMBALE KJ *et al*, for their part, met 97% of patients with goiter in a study carried out in diocesan hospitals in Butembo-Beni in eastern DRC <sup>[10]</sup>.

The absence of data on goiter in Kisangani motivated this study.

## MATERIAL AND METHODS

### Nature and type of study

This is a retrospective and descriptive study spread over 2 years, from January 2018 to December 2019.

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It brought together a number of 52 patients diagnosed and operated on for goiter among the 211 patients who consulted for swelling in the lower anterior region. neck in the surgical department of the Kisangani Millennium Polyclinic (PCM / K) in the Democratic Republic of Congo.

### Selection criteria

Included in our study are all records of patients with goiter undergoing PCM/K during our study period. These patients were selected on the basis of certain criteria: having euthyroid goiter, having signs of functional discomfort or having an unsightly large goiter. We excluded no-operated patients and records that did not meet our inclusion criteria.

### Study variables

#### a) Sociodemographic characteristics of the operated

- Age
- Gender
- Region of origin (it concerns the city of Kisangani as Urban and any other peripheral region of the city as Rural)
- Civil status

#### b) Clinic

- Site of swelling
- Compression symptom

### Data analysis

The data were encoded in the Excel file and grouped together in the form of tables then analyzed after percentage calculation.

### ETHICAL CONSIDERATIONS

Since ethical and deontological rules must be observed in any research, our data collection was carried out anonymously while preserving the identity of the patients.

### RESULTS

During this study period, 52 cases out of 211 medical files of patients who consulted for swelling in the lower anterior region of the neck during the study period could be collected and met our inclusion criteria giving a prevalence of 24.6%.

#### Sociodemographic characteristics of operated patients

**Table 1:** Distribution of patients operated on according to their socio-demographic profile.

Variable		n=52	%
<b>Age</b>	< 20	0	0
	20-29	8	15.4
	30-39	8	15.4
	40-49	16	30.8
	50-59	15	28.8
	60-69	5	9.6
<b>Gender</b>	Feminine	47	90.3
	Male	5	9.6
<b>Region of origin</b>	Urban	34	65.3
	Rural	18	34.6
<b>Civil status</b>	Married	31	59.6
	Single	12	23
	Widower	8	15.3
	Divorced	1	1.9

The majority of those operated on were aged between 40-59 years with a total of 59.6%, they were women (90.3%) from the urban region of Kisangani and married (59.6%).

### Clinical characteristics of operated goiters

**Table 2:** Clinical distribution of operated goiters

Variable		n=52	%
<b>Site of swelling</b>	Left lobe	25	48.1
	Right lobe	20	38.5
	Isthmic	4	7.7
	Bilateral	3	5.8
<b>Compression symptom</b>	Dysphonia	16	30.8
	Dysphagia	15	28.8
	Dyspnea	7	13.5
	Dyspnea + Dysphagia	6	11.5
	No	5	9.6
	Dyspnea + Dysphonia	3	5.8

Left lobe goiters represent 25 out of 52 cases, or 48.1%. Nevertheless, dysphonias and dysphagia represent respectively 30.8% and 28.8% of compression symptoms.

### DISCUSSION

Our study took place in an institutional setting, in a hospital center in the surgical department. However, the data obtained is far from exhaustive even though this center is the only structure supposed to organize free goiter intervention campaigns in Kisangani.

We recorded a 24.6% frequency of goiter surgery in patients seen for swelling in the lower anterior neck region during our study period.

Kambale *et al* had found that during their study period from January 2010 to December 2015, 300 cases of goiter were diagnosed and operated on in the Diocesan hospitals of Butembo-Beni on 17,647 patients with surgical pathologies, i.e. 1.7% of the surgery of goiter [10].

In our series, we believe that this high frequency is due to the size of our study population, which only involved low anterior neck swelling.

#### Sociodemographic characteristics of operated patients

We found a total of 59.6% of patients aged 40-59 years. Ilumbulumbu MK *et al* found that the over 40 years old group was more represented with 87% of cases [8]. Similar results were recorded by Ozbas *et al* who found the average age of patients with goiter to be 43.5 years [11]. We believe that the frequency of goiter in the most severe endemics remains high throughout the reproductive period.

The female sex is more represented with 90.3% against 9.6% for the male sex. Miccoli *et al* confirm that the female sex is a risk factor for thyroid disease [12]. Similar results are reported by Kambale *et al* as well as Ilumbulumbu *et al* with 96.7% and 95.7% respectively of women carrying goiter in their studies in Butembo-Beni. [8, 10]. Bilosi *et al* in their study on 128 patients, had found the same results on the predominance of women [13]. We support Aubry's thesis who says that this female predominance is explained by the hormonal factor especially estrogen, which promotes epithelial hyperplasia and reduces the entry of iodine into the thyroid. Goiter is common during times when the need for synthesis of thyroid hormones is increased: during pregnancy and lactation [14].

It follows from our study that the majority of patients operated on came from the urban region in Kisangani with 34 cases or 65.3%

against 18 cases from the rural region or 34.6%. Kambale *et al* had found that out of a total of 23 patients operated on for goiter, 20 came from the rural area with 87% [10]. In our study, we believe that the high frequency of patients coming from the urban region, would be linked to the communication which favored the mobilization of the patients of Kisangani. When free intervention campaigns are launched, city dwellers are informed more quickly. Married people were more represented with 59.6%. We believe that this predominance of married couples is due to the woman's genital activity (given her predominance of goiter) at home during the reproductive period [14].

### Clinical characteristics of operated goiters

The seat of the swelling on the thyroid is an essential element for the surgical technique to be adopted. In our series, all the locations were found, but the majority of our patients who had undergone a surgical intervention had left lobe goiter with a frequency of 48.1% followed by right lobe goiter with 38.5%. Colak *et al*, for their part, found 7.5% of right lobe goiter, 9% of left lobe goiter and 21% of bilateral goiter [15]. We do not have a plausible explanation for these results because we believe that the site of the swelling may vary from one individual to another.

In the case of compression symptoms, it follows from this study that dysphonia was the most common symptom in our patients with 30.8% followed closely by dysphagia with 28.8%. Ilumbulumbu *et al*, in their study had represented dyspnea as a clinical sign on admission with 8.7% of patients carrying goiter [8]. The signs of compression indicating a complication of goiter are most often related to a high volume of goiter. In our study, dysphonia would quite simply explain the compression of the recurrent by the mass and the dysphagia which would be a gene to swallowing that this mass causes.

### CONCLUSION

Goiter is a disease endemic to areas deficient in iodine. By the absence of effective control programs, patients have advanced pathologies.

### Declaration of Interest

The authors declare no conflicts of interest in connection with this article.

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