



Voluminous Goiters in Surgery B of CHU of Point G: Therapeutic Aspects

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Abstract

Original Research Article

Purpose: To describe the therapeutic aspects of large goiters. **Methodology:** We conducted a retrospective and prospective study including 115 patients from 2009 to 2014 (6 years). We conducted a retrospective study including 95 patients from January, 2009 till December, 2013 (5 years) and a prospective study including 20 patients from January, 2014 till December, 2014 (1 year) in Central Hospital of University of Point G in Bamako (Mali). Large goiter was defined as any goiter including the height or width was greater than or equal to 10 centimeters (cm). **Results:** We collected 115 patients. The average age of patients was 44.43 years \pm 14. 3 with extremes of 9 and 80 years. It was 101 women (87.8%) and 14 men (12.2%) with a sex. ratio of 7.2 in favor of women. The average height of goiter was 12.1 cm \pm 3.5 cm with extremes of 10 and 29 cm and the average width was 14.4 cm \pm 5.4 cm with extremes of 10 and 32 cm. Thyroid ultrasound of large goiters were multinodular at 100% (111/115). We realized a subtotal thyroidectomy in 73.9% (85/115), an Isthmo - lobectomy in 23.5 (27/115), a total thyroidectomy in 2.6% (3/115). Histology found an adenoma in 97.3% of cases (108/111) and a carcinoma in 2.7% (3/111). The postoperative were simple in 81.7% (94/115), complicated in 18.3% (21/115). The main complications were the dysphonia in 47.7% (10/21), compressive hematoma in 14.3% (3/21), dyspnea in 14.3% (3/21), hypothyroidism in 14.3% (3/21). Mortality was 0%. **Conclusion:** Large goiters give anatomical changes of the cervical region that may be responsible for difficulties of the thyroidectomy.

Keywords: Voluminous goiters, thyroid, thyroidectomy, recurrent nerve, complications.

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1. INTRODUCTION

Goiter is a frequent pathology that interests more than 200 million people around the world [1]. According to the WHO, the goiter is defined as being a palpable thyroid which the side lobes have a volume greater than the size of the distal phalanx of the thumb of the person examined and large goiter is one that is visible from a distance (stage 3) [2]. In a study conducted by Gardiner in Rayaume Uni 1995, was classified as large goiter all goiter weighing more than 100 g [3]. Lack of specific study on large goiters, we took as a definition in this study all goiter whose height and or width is greater than or equal to 10 cm.

Large goiters are frequent in endemic areas because of iodine deficiency. They are of concern to surgeons because of difficult dissection with risk of tracheal wound, wound of the internal jugular and the section of the lower laryngeal nerve and the increased risk of complications post surgery (secondary hemorrhage with hematoma compressive, the acute hypoparathyroidism, permanent paralysis of the lower laryngeal nerve and hypothyroidism). Similarly, they are source of concern for anesthesiologists due to difficulties related to intubation due to the deviation of the trachea and the location endothoracic goiter but also the tracheomalacia post-thyroidectomy [4]. Thyroidectomy is the surgical technique for the large goiters. The France recorded 49 658 cases of thyroidectomy in 2008 [5].

In Africa, 889 and 1037 thyroidectomy cases were registered respectively in Cotonou between 1992 and 2006 by Vignikin and in Maroc between 1990 and 1999 by EL Malki [6, 7]. Thus in the Service of surgery B of the CHU of the Point G, 422 cases of thyroidectomy were recorded between 1989 and 1997 [8]. The mortality of the thyroidectomy is zero in Allemagne and France [5, 9]; In Africa it is between 0.06 and 0.1% of the studies of El Malki in Maroc, Vignikin in Cotonou, Touré in Guinée [6, 7, 10].

We wanted to do this study in order to describe the therapeutic aspects of large goiters.

2. PATIENTS AND METHODS

We conducted a prospective and retrospective study including 115 patients from January 2009 to December 2014 (6 years). Large goiter was defined as any goiter including the height and or width was greater than or equal to 10 cm. It was a retrospective and prospective study that took place between 2009 and 2014 in the Service of surgery B of CHU of Point G. We have included in this study all goiters operated with a height and or width greater than or equal to 10 cm. The studied parameters were epidemiological and sociodemographic data, clinical signs, paraclinical signs, operating techniques and follow-up post operative.

Data processing and analysis was done on the Microsoft Windows software version 2007, SPSS 12.0 for Windows. The probability test used was Chi2 with a threshold of meaning $p < 0.05$.

3. RESULTS

Overall frequency

For 6 years the service of surgery B has identified 115 large goiters on 760 operated goiters either 15.13%. Also large goiters accounted for 5.5% of all surgical interventions (115/2107) cold.

Age: The average age of patients was 44. 43 years \pm 14.3 with extremes of 9 and 80 years.

Sex: Patients were 101 women (87.8%) and 14 men (12.2%) with a sex. ratio of 7.2.

Reason for Consultation

Patients consulted for anterior cervical swelling in 56.5% of cases (65/115). In 43.5% of cases (50/115) patients were sent by the health workers for goiter.

Measurements

The average height of goiter was 12.1 cm \pm 3.5 cm with extremes of 10 and 29 cm and the average width was 14.4 cm \pm 5.4 cm with extremes of 10 and 32 cm.



Figure 1: Large goiter measured to according the width

Table 1: Operating techniques

Operating techniques	Effective	Percentage
Isthmo-lobectomy	27	23,5
Subtotal Thyroidectomy	85	73,9
Total Thyroidectomy	3	2,6
Total	115	100

Table 2: Post operative complications

Post opérative complications	Effective	Percentage
Hémorrhage with compressive hématoma	3	14,3
Dysphonia	10	47,7
Dyspnea	3	14,3
Hypoparathyroidism	1	4,7
Hypothyroidism	3	14,3
Keloid scars	1	4,7
Total	21	100

Hormonal situation

The hormonal balance (tetraiodo thyroxine, and thyroid stimulating hormone) has been achieved in all patients. It was hyperthyroid goiters in 21.7% of cases (25/115). These cases have been treated medically by the antithyroid synthesis before surgery. The rest of patients were euthyroidism either 78.3% (90/115). Cytology found a benign goiter in 97.4% (112/115) cases, malignant (thyroid cancer) in 2.6% of patients (3/115). Thyroid ultrasound large goiters were multinodular in 100% of cases.

The cervical radiography of face and profile conducted in 87 patients was normal in 25.2% (22/87). There was the tracheal deviation in 48.2% (42/87), tracheal compression in 20.6% (18/87), calcifications in 11.5% (10/87), goiter plunging in 11.5% (10/87).

Medical treatment before surgery

All cases of hyperthyroidism (21.7%) have been treated with the hormone synthesis antithyroid (topped 5 mg, 20 mg). In the service most often the initial dose is 40 mg daily, it is adjusted according to the result of hormonal control until the euthyroidism. This euthyroidism remained under treatment for 1 to 2 months before the surgery.

Surgical treatment of large goiters

Type of incision

The earlier cervicotomy type Kocher was conducted in 99.1% of cases (114/115) and the cervical incision in L in 0.9% (1/115) for neck dissection reason.

Diagnosis per operative

Operating per exploration found large goiters multinodular in 100% of cases, bilateral and benign in 73.9% of cases (85/115), bilateral and malignant in 2.6% (3/115) of the cases, unilateral and benign in 23.5% (27/115).

Operative techniques

We proceeded to the subtotal thyroidectomy in 73.9% of the cases at the patients with bilateral and benign goiters, to the isthmo - lobectomy in 23.5% of cases at the patients with unilateral and benign goiters, to the total thyroidectomy in 2.6% of cases at the patients with bilateral and malignant goiters.

The recurrent nerve

The recurrent nerve has been seen on one side in 40% of cases (46/115) and both sides in 53% of cases (61/115). He has not been seen in 7% of cases (8/115).

Parathyroid glands

The parathyroid glands have been seen and saved on one side in 42.6% of cases (49/115) and views of the 2 sides and saved in 50.4% of the cases. They have not been seen in 7% (8/115).

Drainage: We used the drain type Redon in 99.1% (114/115) and a blade of glove in 0.9% (1/115).

Histology: Histology concluded an adenoma in 97.3% of cases (108/111) and carcinoma in 2.7% (3/111).

Postoperative

The postoperative were simple in 81.7% (94/115), complicated in 18.3% (21/115). The morbidity was 18.3%.

Post operative complications

3 cases of hemorrhage with hematoma compressive (14,3%) occurred in immediate post surgery that required a hemostasis of emergency by surgery and transfusion. Dysphonia was found in 47.7% of the cases (10/21). It was due to a lesion of the recurrent nerve for a short term corticotherapy was made. Dyspnea has represented 14.3% (3/21) of complications. It became severe two patients leading to apnea which necessitated an emergency tracheotomy.

3 cases of total thyroidectomy gave hypothyroidism postoperative (14.3% of cases). These patients have been on thyroid hormones of synthesis to life.

Post operative mortality

The post operative mortality was 0%.

Post operative follow-up of large goiters

Removal of the drain

In this study the drain was removed between the 2nd and 4th day post-operative in 98.3% of cases (113/115). In 1.7% of cases (2/115) the drain remained in place over 4 days. It was cases who presented the postoperative bleeding.

Operating post stays

The average length of stay post operative was 1.7 days \pm 1.13 with extremes of 1 and 10 days.

The post operative stay did not exceed 4 days in 94.8% of the cases (109/115). The stay reached 10 days in a patient or 0.9% of cases because he presented a post operative dyspnea which required a tracheotomy and a stay in the intensive care unit.

The postoperative ORL examination

It was performed in 96.6% of cases (111/115). It was normal in 89.1% of cases (99/111) and it had a transitional recurrent palsy in 10.8% of cases (12/111).

Calcémie post operative

Carried out calcium in postoperative in 96 patients was normal in 95.8% of cases (92/96), low in 4.2% of cases (4/96).

4. DISCUSSION

It was a retrospective and prospective study on 6 years period from 2009 to 2014. During this study 115 large goiters records were collected.

The frequency of large goiters compared to all of the thyroidectomy was 15.1%. This same trend was found by Gardiner in Royaume Uni ($P = 0, 812$) [3]. However Chohail H in Maroc, Tahsin C in Turquie and Tall in Dakar [11, 15, 19] reported respectively higher frequencies ($P < 0,05$). This difference could be explained by the fact that in their studies large goiter was defined as any visible goiter remotely (type III according to WHO).

We have not observed difference between the average age of our patients (44, 43 years) and that of the other authors [12, 13, 15, 17].

Women were more likely than men with a sex ratio 7.2 in favor of women. It was the same in other studies with (3.8 to 5.1) women [13, 15, 17]. This female predominance could be explained by puberty, pregnancy, and childbirth.

In our study the diagnosis of large goiter was based on the measurements (height and width of the swelling) pre operative. So was called goiter all large goiter including the height or width was greater than or equal to 10 cm. However, in studies of Gardiner in Royaume Uni, Dyde A.K in Hollande and Andreas H in Allemagne [3, 12, 16] the diagnosis was respectively based on the weight of the thyroid in post operative and the size of the gland on ultrasound thyroid in pre operative. We believe that measurements allow to make the diagnosis of large goiter prior to the operation. They are simple, practical and not expensive as they are by the clinic.

Subtotal thyroidectomy was conducted in 73.9% of the cases. This rate is higher than that of Gardiner KR (9.4%; $P < 0.05$) [3]. This difference could be explained by the fact that his study focused on large multinodular goiters and their surgical trend was total thyroidectomy. Total thyroidectomy represented 2.6% of the cases in our study. This rate is lower than those of Gardiner (73.4%, $P < 0.05$), from Chohail (18.0%, $P < 0.05$) and Tahsin C (52.2%, $P < 0.05$) [3, 11, 15]. This difference could be explained by our surgical attitude to keep a stump in case of thyroidectomy due to the cost and availability of thyroid hormones of complementary syntheses in post operative in case of thyroidectomy total.

Total thyroidectomy consists of removing all the thyroid gland (the isthmus and the 2 lobes). Subtotal thyroidectomy consists of completely removing the isthmus and 1 lobe and partially the other lobe by keeping a stump at a pole.

The technique of sub-total thyroidectomy preserves the functionality of the gland and thus prevents treatment with the thyroid hormone for life of total thyroidectomy. This hormonal treatment for life poses problems of availability, cost and compliance in our context. We performed isthmo - lobectomy in cases of unilateral and benign goiter and total thyroidectomy in cases of malignant goiter.

We found a rate of morbidity of 18.3% of cases. We found no difference between this rate and those of the other authors [3, 11, 14]. The main complications were the compressive hematoma and dysphonia. The compressive hematoma was due to no or insufficient drainage. The dysphonia was due to injury to the recurrent nerve.

The post operative mortality was null. It was the same in the study of Gardiner KR ($P > 0.05$) [3], Tahsin C ($P > 0.05$) [15] and Toufik Bi in Algerie ($P > 0.05$) [18].

5. CONCLUSION

Large goiters are frequent in our service. Women are much more affected than men. Diagnosis of large goiters was based on the measurement of the swelling in surgical pre operative. The treatment is surgical.

Morbidity after surgery is rare, and the mortality is zero. Authorization of the Ethics Committee.

We, undersigned, authors of this article give evidence that we received the authorization of the Ethics Committee for the realization of this study.

Conflicts of Interest: The authors state that there is no conflict of interest in the publication of this article.

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