

## Clinico-Biological Evolution of Hyperthyroid Goiters After Total Thyroidectomy in The Department of Endocrinology-Internal Medicine at Mali Hospital, Bamako, Mali

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### Abstract

### Original Research Article

**Introduction:** Clinical and biological manifestations after total thyroidectomy constitute one of the frequent reasons for consultation in our medical services. Several studies on thyroid pathology have been carried out in Mali, but none to our knowledge has been devoted to the postoperative clinical and biological follow-up of hyperthyroid goitres after total thyroidectomy, hence the interest of this study which aimed to evaluate the clinico-biological manifestations after total thyroidectomy of hyperthyroid goitres in the department of Endocrinology-Internal Medicine, Surgery of the Hospital of Mali. **Materials and methods:** This was a descriptive, retrospective study from January 2010 to December 2014. All patients who had undergone total thyroidectomy for hyperthyroid goiter, who were treated before discharge with levothyrox (50 to 150 µg/day) to prevent hypothyroidism, who had a complete file and who were followed up in the Endocrinology-Internal Medicine and Thoracic Surgery Departments of the Mali Hospital were included. **Results:** We collected 550 cases, of which 54 met our inclusion criteria, i.e. a prevalence of 9.8%. The series was composed of 51 (94.4%) women and 3 (5.6%) men, i.e. a sex ratio of 0.06. The most common age range was 41-60 years with extremes of 22 and 75 years. Anterocervical swelling was the reason for consultation in 98.1% of cases. At D7 post-op, we noted dysphonia in 10 (18.5%) patients, 5 (9.25%) cases of hypocalcemia and 33 (61.1%) cases of hypothyroidism on 38 samples. The other manifestations were: at 1 month follow-up, asthenia (5.6%), biological hypothyroidism (9.3%), at 3 months follow-up: transient hypoparathyroidism (3.7%), a loss of sight rate (7.4%), at 6 months follow-up: signs recorded were asthenia, fragility of the phaneras, lethargy, a loss rate of 11.1%. At one year follow-up, the most frequent signs were: skin infiltration (3.7%), definitive hypoparathyroidism (3.7%), a loss rate of 16.7%. **Conclusion:** Total thyroidectomy is a radical treatment which is responsible for the appearance of clinical and biological signs requiring a long term monitoring in order to detect some potentially serious complications which can engage the vital or functional prognosis in the absence of an adequate management.

**Keywords:** Evolution, total thyroidectomy, Mali hospital, Mali.

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## INTRODUCTION

A goiter is a thyroid gland that has doubled in size from normal or exceeded 40 g [1]. Hyperthyroidism is a frequent pathology, with multiple symptoms and variable tolerability. In general, in elderly patients, the characteristics of hyperthyroidism are less obvious and cardiac symptoms or signs of

dementia are frequent. It is a rather female pathology, which can affect all age groups, depending on the etiology [2].

Clinical and biological manifestations after total thyroidectomy are a frequent reason for consultation in our medical services. Several studies on

thyroid pathology have been carried out in Mali [3, 4], but none to our knowledge has been devoted to the postoperative clinical and biological follow-up of hyperthyroidal goitres after total thyroidectomy, hence the interest of this study which aimed to evaluate the clinico-biological manifestations after total thyroidectomy of hyperthyroidal goitres in the department of Endocrinology-Internal Medicine, Surgery of the Mali Hospital.

## MATERIALS AND METHODS

This was a descriptive, retrospective study from January 2010 to December 2014. All patients who had undergone total thyroidectomy for hyperthyroid goiter, who were treated before discharge with levothyrox (50 to 150 µg/day) to prevent hypothyroidism, who had a complete file and who were followed up in the Endocrinology-Internal Medicine and Thoracic Surgery Departments of the Mali Hospital were included. Patients who had not undergone surgery, who had undergone subtotal thyroidectomy, who were seen outside the study period, and who had unusable records were not included. Strict respect of the anonymity of each patient's medical record was observed. Data entry and analysis were performed on

SPSS19.0. The statistical Test used was Pearson's Chi2 with  $p < 0.05$  as significant value.

## RESULTS

We collected 550 cases, of which 54 met the inclusion criteria, i.e. a prevalence of 9.8%. The series was composed of 51 (94.4%) women and 3 (5.6%) men, i.e. a sex ratio of 0.06. The age group 41-60 years was the most represented with extremes of 22 and 75 years. Housewives represented 61.1% of the cases. Anterocervical swelling was the reason for consultation in 98.1% of cases (see Table 1). Forty-four (81.5%) patients were on synthetic antithyroid drugs (ATS) before thyroidectomy. Bradycardia was found in 24 (44.4%) patients before surgery. At day7 post-op, we noted dysphonia in 10 (18.5%) patients (Cf. table 3), 5 (9.25%) cases of hypocalcemia and 33 (61.1%) cases of hypothyroidism on 38 samples. The other manifestations were: at 1 month follow-up, asthenia (5.6%), biological hypothyroidism (9.3%). At 3 months follow-up, we found transient hypoparathyroidism (3.7%), a loss of sight rate (7.4%), and at 6 months follow-up, the signs were asthenia, fragility of the phaneras, lethargy, a loss rate of 11.1%. At one year follow-up, the most frequent signs were skin infiltration (3.7%), definitive hypoparathyroidism (3.7%), a loss rate of 16.7% (see Tables 4, 5, 6 and 7).

**Table-1: Distribution of patients by reason for consultation**

Patterns	workforce	Percentage
Anterocervical swelling	53	98,1
Plunging goiter	1	1,9
Total	54	100,0

**Table-2: Distribution of patients by personal medical history**

Personnal history	workforce	Percentage
HTA	21	38,9
Diabetes	6	11,1
HTA+Diabetes	3	5,6
Heart disease	2	3,7
No	22	40,7
Total	54	100

**Table-3: Postoperative clinical follow-up at Day 7**

Clinic	workforce	Percentage
Dysphonia	10	18,5
Hematoma	2	3,7%
Dyspnea	2	3,7%
Suppuration	1	1,9
Bleeding	1	1,9
Simple	38	70,4
Total	54	100,0

**Table-4: Clinical and biological postoperative follow-up at 1 month**

Follow-up at 1 month	workforce	Percentage
Asthenia	3	5,6
Dysphonia	2	3,7
Drowsiness	1	1,9
Frustration	1	1,9
Dry skin	1	1,9
Cheloid	1	1,9
Biological hypothyroidism	5	9,3
Simple	40	74
Total	54	100,0

At the first postoperative month we recorded 11 cases of signs of hypothyroidism.

**Table-5: Postoperative clinical and biological follow-up at 3 months**

Follow-up at 3 months	workforce	Percentage
Asthenia	1	1,9
Dysphonia	1	1,9
Skin infiltration	1	1,9
Dryness of the skin	1	1,9
Hypocalcemia	2	3,7
Simple	44	81,5
Lost to view	4	7,4
Total	54	100,0

At 3 months of follow-up, 4 of our patients were lost to follow-up (7.4%). Signs of hypothyroidism and hypoparathyroidism were found in 5 cases (9.3%).

**Table-6: Clinical and biological postoperative follow-up at 6 months**

S Follow-up at 6 months	workforce	Percentage
Asthenia	1	1,9
Fragile hair and nails	1	1,9
Lethargy	1	1,9
Dysphonia	1	1,9
cheloid	1	1,9
Lost toview	6	11,1
Simple	43	79,6
Total	54	100,0

**Table-7: Clinical and biological postoperative follow-up at 1 year**

1 year follow-up	workforce	Percentage
Skin infiltration	2	3,7
Hypoacusis	1	1,9
Pretibial edema	1	1,9
Asthenia	2	3,7
Chéloid	1	1,9
Lost to view	9	16,7
Simple	38	70,4
Total	54	100,0

## DISCUSSION

In Mali, as in many other Black African countries, surgical treatment of thyroid pathology is frequent. Our prevalence was 9.8%. It is very variable according to the authors, 59%, 3.6% and 0.8% according to S. Ayache *et al.* Ayache *et al.* [5], TOURE A. Guinea [6] and SANOGO *et al.* [7]. The age group 41-60 years was the most represented with 48.1% of

cases. The mean age of 47 years in our series was higher than in the series of Sanogo in Mali [7], of M. ZERIOUH BRAHIM [8] and of TOURE A in Guinea [6]. We found a sex ratio of 0.06. This female predominance is found in all the literature (see Table 8). This distribution can be explained by the female sex hormones whose involvement in such diseases has been widely studied in the literature. Female sex is a risk

factor for thyroid pathology. Antercervical swelling was the most frequent reason for consultation (98.1%), SANOGO *et al.* [7] reported (99.4%). At 7 days postoperatively, the following signs were found: - Hemorrhage (1.9%), this was reported by different authors: CONESSA in Senegal (1.4%) [9], SANOGO *et al.* (1.5%) [7], KOUMARE (3.3%) [10], ROSATO in Italy (2.6%) [11], TOURE A in Guinea (2.1%) [6] and BAKKA in India (7.6%) [12]. Transient recurrent injury (18.5%). This complication was reported by CONESSA in Senegal (2.8%) [9], KOUMARE in Mali (1.7%) [10], ROSATO in Italy (2.5%) [11], TOURE A in Guinea (3.1%) [6], BAKKA in India (11.7%) [12] and AGAC A in Turkey (16%) [13]. Hematoma (3.7%) and wall suppuration (1.9%). They were found in 0.5% of patients in the study by TOURE A in Guinea 2006 [6]. -Transient hypoparathyroidism (9.25%). It was 17.2% and 10% in India [12] and Turkey [13]. At one month of follow-up, 3.7% of our patients had a transient recurvature, and 5.15% in the series by M. ZERIOUH BRAHIM [8]. At the third month of follow-up, several patients presented clinical signs of hypothyroidism such as weight gain (74%), bradycardia (44.4%), skin infiltration in (1.9%) and asthenia (1.9%). These signs are known from hypothyroidism and are here due to total thyroidectomy, their presence in this pathology has been described by several authors [14, 15]. Transient recurrent involvement (1.9%) was reported by CONESSA in Senegal (2.3%) [33], ROSATO in Italy (2.5%) [35], TOURE in Guinea (4.6%) [6]. Transient hypoparathyroidism observed in 3.7% of patients was found in 12% of patients by S. Ayache *et al.* [5]. The follow-up of 36 patients found 6 months after total thyroidectomy revealed the following signs: asthenia (1.9%), fragile skin (1.9%), lethargy (1.9%). The frequency of these signs during hypothyroidism has been reported in the literature [15-17]. The definitive

recurrent damage (1.9%), it was reported by Thomusch O. in Germany 2000 (1.1%) [18], Efremidou, (1.3%) [19], Duclos, (2.08%) [20]. As for Definitive hypoparathyroidism (3.7%), it was in the range of (0.3%), (1.5%) and (2.9%) according to Efremidou [19], Thom- usch O. Germany [18] and Bellantone R [21]. The postoperative course of our patients was re-evaluated over a period of one year, and we found skin infiltration (3.7%) and pretibial oedema (1.9%). These signs are found in some authors [15, 17, 22]. The definitive recurvular damage (1.9%), it was lower than those of S. Ayache *et al.* (2.7%) [5], Bellantone R and M. ZERIOUH BRAHIM (2.6%) [8]. Definitive hypoparathyroidism (3.7%), was higher than the result of M. ZERIOUH BRAHIM (1.28%) [29]. Nine (16.7%) patients were lost to follow-up. This rate is lower than that of Oumar Ag.2015 [23] at 3 months of follow-up (15.7), at 6 months of follow-up (18.6), at one year of follow-up (18.6).

### Limitations of the study

Our work whose objective was to study the clinical and biological aspects after total thyroidectomy of hyperthyroid goiters encountered some difficulties which constitute its limitations namely: -The lack of financial means of the patients, having limited the realization of the dosage of the TSH which has a high cost. The non-return of patients after their first follow-ups, which prevented us from evaluating the evolutionary aspects, The retrospective character of our study (lack of information and data in the consulted files), -The small size of our series. The postoperative follow-up survey was carried out by exploiting hospital records and by collecting information from telephone calls with appointments in possible cases (cases resident in Bamako). This methodology was tedious because of incomplete, changed or incorrectly recorded addresses.

**Table-8: Sex ratio by author**

Authors	N	Male	Female	Sex-ratio
RAFIQUE G. au Pakistan [30]	250	5	245	0,02
NICOLA en Italie [31]	108	27	79	0,34
SANOGO <i>et al.</i> [26]	131	17	114	0,15
VIGNIKIN au Benin [32]	889	87	802	0,11
<b>Our Mali 2016 series</b>	<b>54</b>	<b>3</b>	<b>51</b>	<b>0,06</b>

## CONCLUSION

Thyroidectomy is a radical treatment which is responsible for the appearance of clinical and biological signs requiring a long term monitoring in order to detect some potentially serious complications which can engage the vital or functional prognosis in the absence of an adequate management.

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