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Family Goiter at the Hospital of Sikasso (Mali) About 4 Cases

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Abstract **Case Report**

Goiter is the most common endocrine pathology in the world [2]. Its medical treatment is based on hormone therapy, iodotherapy and its surgical treatment is based on thyroidectomy. Familial goiter appeared to be more common in the gotrigenic regions of Europe, rarer in North America. In Africa, particularly in Mali, there have been few studies on familial goiter. The purpose of this study was to report 4 cases of goiter in the same siblings with a history of goiter in the mother and paternal grandmother to review the literature.

Keywords: Goiter, family, clinical, surgery, histology, Mali.

INTRODUCTION

Goiter is a localized or generalized hypertrophy of the thyroid gland [1]. Goiters can be congenital or acquired, diffuse or nodular, functional or non-functional, benign or malignant [1] Goiter is the most common endocrine pathology in the world [2]. The global frequency of goiter is estimated at 15.8% [2]. In Mali, the frequency is estimated at 3.52%. Goiter is a public health problem in Mali. If medical treatment is based on hormone therapy, iodoid therapy; surgical treatment is based on thyroidectomy. Thyroid surgery has benefited from technical advances including endoscopy and robotics [3,4]. Post-thyroid complications are now rarer and are marked by recurrent lesions, compressive hematomas, hypocalcemia and hemorrhages. Morbidity and mortality were estimated at 6.5% and 1% respectively [5].

Familial goiter appeared to be more common in the goitrigenic regions of Europe, rarer in North America [6, 7]. In Africa, particularly in Mali, there have been few studies on familial goiter. The purpose of this study was to report 4 cases of goiter in the same siblings with a history of goiter in the mother and paternal grandmother to review the literature.

OBSERVATIONS

Observation 1: A 57-year-old patient, first son of the family, father of 2 girls and 4 boys all free from goiter, with no particular personal medical-surgical history. He consulted for antero-cervical swelling that had appeared since the age of 12 and a monstrous deformity of the cervical region (Figure 1). Interviewing found signs of dysphagia-type compressions and moderate dyspnea without signs of hyperthyroidism or hypothyroidism.

The physical examination noted an antero-cervical swelling, mobile on swallowing on inspection without collateral venous circulation or modification of the adjacent skin. On palpation, the swelling was firm, regular and mobile with respect to the two planes without thrill and measured 18 cm on the cranio-caudal axis and 22 cm on the transverse axis without cervical and supraclavicular lymphadenopathy. The thyroid workup including HRT, T3, T4 was normal. The thyroid ultrasound revealed bilateral multinodular isthmolobar goiter and the cervical x-ray was normal. It

was therefore a bilateral isthmolobar goiter in clinical and biological euthyroidism with slight dysphagia and dyspnea. The operative procedure was subtotal thyroidectomy under general anesthesia with orotracheal intubation, recurrent nerves and parathyroid glands were respected. The surgical specimen weighed 650g, (figure 2). Pathological examination concluded in a macro-micro vesicular colloidal adenoma of the thyroid. The operative consequences: phonation, swallowing were good. Postoperative monitoring of hormones TSH, T4, T3, calcium levels were normal at 1 month, 3 months, 6 months.

OBSERVATION 2

A 40-year-old patient, 2nd son of the family, father of 8 boys and a girl free from goiter, with no previous medical-surgical personnel. He consulted for antero-cervical swelling since the age of 15 years. , without any other particular sign, (figure 3); the swelling was mobile on swallowing without modification of the skin opposite or lymphadenopathy visible on inspection; on palpation it was firm, mobile in relation to the 2 planes without thrill and measured 22 cm on the cranio-caudal axis and 26 cm on the transverse axis; the rest of the exam unremarkable. The thyroid workup including TSH, T3, T4 was normal. The thyroid ultrasound was in favor of bilateral multi-nodular isthmolobar goiter and the cervical and chest X-ray were unremarkable. It was therefore a bilateral isthmolobar goiter in clinical and biological euthyroidism. The operative procedure was subtotal thyroidectomy under general anesthesia with orotracheal intubation, the operative part weighed 800 g (figure 4). Pathological examination concluded in a macro-micro vesicular colloidal adenoma of the thyroid. The operative consequences: phonation, swallowing were good. Postoperative monitoring of hormones TSH, T4, T3, calcium levels were normal at 1 month, 3 months, 6 months.

OBSERVATION 3

A 44-year-old patient, the first daughter of the family, mother of 7 children free from goiter with no previous medical and surgical personnel. She consulted for an antero-cervical swelling that had appeared since the age of 10 without signs of hyperthyroidism or hypothyroidism (figure 5). This swelling was mobile on swallowing without modification of the skin opposite and measuring 20 cm over the length 'cranio-caudal axis and 25 cm on the transverse axis, without any other particular sign.

The thyroid workup including TSH, T3, T4, was normal. The thyroid ultrasound was in favor of bilateral multinodular isthmolobar goiter and the cervical x-ray was unremarkable. It was therefore a bilateral isthmolobar goiter in clinical and biological euthyroidism. The operative procedure was subtotal thyroidectomy under general anesthesia with orotracheal intubation, the operative specimen weighed 850 g (Figure 6). Pathological examination was in favor of a macro-micro vesicular colloidal adenoma of the thyroid. The operative consequences: phonation, swallowing were good. Postoperative monitoring of hormones TSH, T4, T3, calcium levels were normal at 1 month, 3 months, 6 months.

OBSERVATION 4

A 47-year-old patient, second daughter of the family and mother of 6 children, free from goiter, with no particular medical-surgical history. She consulted for antero-cervical swelling after treatment for hyperthyroidism (weight loss, nervousness, palpitation) (figure 7). This swelling was mobile on swallowing without modification of the skin opposite and measured 25 cm on the cranio-caudal axis. and 32 cm on the transverse axis. The remainder of the exam was unremarkable. The thyroid workup including TSH, T3, T4 was normal. The thyroid ultrasound was in favor of bilateral multinodular isthmolobar goiter and the cervical x-ray was unremarkable, so it was bilateral isthmolobar goiter with clinical and laboratory euthyroidism. The operative procedure was subtotal thyroidectomy under general anesthesia with orotracheal intubation, the operative specimen weighed 910 g (figure 8). The pathological examination was in favor of a macro-micro vesicular colloid adenoma of the thyroid. The operative consequences: phonation, swallowing were good. Postoperative monitoring of hormones TSH, T4, T3, calcium levels were normal at 1 month, 3 months, 6 months.

DISCUSSION

The familial character of these four cases of goiter suggests a hereditary and endemic factor. This could be explained by the fact that our patients are of the same siblings and resided in the same region where the production and consumption of certain goitrogenic foods such as sweet potato, apple cabbage, cassava is excessive. The family history of goiter was found in 28.9% of patients in a study carried out in Mali over a period of 09 years [8]. In another study carried out in Mali over a period of 05 years, it was found 24.3% of familial goiter [9]. In an African region rich in iodine, a prevalence of goiter greater than 50% has been reported [10]. In Greek regions where goiters are endemic, a higher prevalence of goiter has been observed in children of parents with goiters than in children of non-goitrous parents [11]. Several studies in twins in Greek and Denmark showed a higher concordance rate for monozygotic twins than for dizygotic twins of the same sex [10, 11].

In the present study, the pathological examination concluded in a macro-micro vesicular colloidal adenoma of the thyroid in all patients.In the literature several types of familial goiter, characterized by a disturbance in a normal specific intracellular process, were identified. . Three cases of hyperplastic and hypocolloid familial goiter were observed in an

anatomical and spectrophotometric study of DNA by CARLTON AUGER and ROBERT GARNEAU in Quebec [6, 7]. Congenital goiters are increasingly classified as part of inborn errors of metabolism, a group of diseases that involve an aberration of a specific enzymatic system. The synthesis, storage and secretion of thyroid hormones require the functional integrity of several enzyme systems. The DNA spectrophotometry study has not been performed in our patients. This could be due to a lack of resources and technologies in our developing countries.

The four cases of goiter that we report probably correspond to innate errors of metabolism but which occurred in a goitrogenic zone of Mali. Without the spectrophotometric study of DNA, it is impossible to determine the nature of the functional disorder.

CONCLUSION

The familial character of goiters suggests to faith a hereditary and endemic factor. Goiter is a public health problem in Mali. If the medical treatment is based on hormone therapy, iodotherapy; surgical treatment is based on thyroidectomy. Post-thyroidectomy complications are rarer today and are marked by recurrent lesions, compressive hematomas, hypocalcemia and hemorrhages.

Conflicts of interest

The authors declare no conflict of interest.

Contributions from the authors

Aly Boubacar Diallo, Bathio Traoré, Moussa Diassana,, Bernard Coulibaly and Mamed Sacko participated in the care of the patient in the writing of the article and in the bibliographic research; Amadou Maïga, Amadou Bah, Assitan Koné and Moussa Konaté participated in the bibliographic research; Adegné Togo participated in the bibliographic research.

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