INTRODUCTION

Thyroid cancers are rare and represent 1% of malignant tumors (Dalmasol et al., 2009; Kilfoy et al., 2009). The prevalence of thyroid cancers appears slightly higher in goiter endemic areas, and is about three times more common in women than in men (Belot et al., 2008). Today, epidemiological data on thyroid cancers are available in developed countries, dominated by the papillary type (47 cases). Metastasis was observed in 13% of patients. The pTNM classification evaluated in 18 cases showed a predominance of grade I (13 cases). Lymphomas were dominated by lymphoma diffuse large B-cell (5 cases).

RESULTS

Epidemiology

A total of 92 cases of thyroid cancers have been identified, representing 1.1% (7930 cases) of all cancers registered during the study period. Mean age was 45.4 ± 0.3 years and the proportion of females was 78.3%. We identified 92.4% carcinomas and 7.6% lymphomas. Carcinomas were well differentiated in 80 cases and were dominated by the papillary type (47 cases). Metastasis was observed in 13% of patients. The pTNM classification evaluated in 18 cases showed a predominance of grade I (13 cases). Lymphomas were dominated by lymphoma diffuse large B-cell (5 cases).

CONCLUSIONS

This study is the first global standard for thyroid cancer pathology in Togo. The high frequency of follicular form suggests an unrecognized iodine deficiency. The improvement of the technical platform of the LAP (immunohistochemistry) will increase the diagnosis of rare forms of thyroid cancer.

Keywords: Thyroid - cancer - epidemiology - histology - pathology - Togo
Tchin Darre et al

Asian Pacific Journal of Cancer Prevention, Vol 16, 2015

The samples tested were made up of thyroid nodules (62 cases; 67.4%) of total thyroidectomy with neck dissection in 17 cases (18.5%) and total thyroidectomy without neck dissection in 13 cases (14.1%). Macroscopic examination of the surgical specimen showed a nodular appearance of polychrome tumor whose boundaries were clear in 29 cases and in 63 cases badly limited. Two histological groups were listed: carcinoma (n=85 cases; 92.4%); lymphoma (n=7; 7.6%). Carcinomas were well differentiated in 80 cases consist of papillary carcinoma (n=44 cases) and follicular carcinoma (n=36 cases) (Table 1). Metastasis was mentioned in 12 patients (13%). It was papillary carcinoma in 8 cases and follicular carcinoma in 4 cases. The pTNM classification was evaluated in 18 cases, and showed a predominance of grade I (n=13 cases), followed by grade II (n=4 cases) and grade III (n=2 cases). Non-Hodgkin lymphomas were diagnosed in 5 cases and Hodgkin lymphomas in 2 cases. Non-Hodgkin lymphomas were all classical form, diffuse large B-cell. The two cases of Hodgkin lymphoma consisted of nodular sclerosis observed in one case in a man and mixed cellularity type observed in a woman.

Discussion

This study on thyroid cancers in Togo assembled all histological confirmed cases across the country, since the pathology laboratory of the University Hospital Lome Sylvanus Olympio is the only center for all request for histopathological examinations; it does not have the techniques immunohistochemistry. This study is not exhaustive of these thyroid cancers in Togo because of lack of a registry of cancer, but it especially provides extensive data on epidemiological and histological aspects of these cancers. The prevalence of thyroid cancers is weak in the world, according to studies ranging from 0.1 to 3.7 per 100,000 in men and 0.4 to 9.6 per 100,000 in women (Kilfoy et al., 2009; Sawka et al., 2014). Two to thirty percent of thyroid cancers go unnoticed and are discovered at autopsy (Davies et al., 2006). In our study, the thyroid cancers accounted for 1.1% of all cancers; this finding is consistent with the literature data where the prevalence is usually around 1% (Davies et al., 2006). The evolution of the incidence of thyroid cancers can vary within a country, due to the occurrence of a particular epidemiological context or a change in diagnostic performance (Cotterill et al., 2001; Zhu et al., 2009). In the first case, it’s necessary to highlight the influence of nuclear radiation. The prevalence of thyroid cancers in Europe has increased after the Chernobyl accident in 1986, especially in children, while it remained stable in adults (Cotterill et al., 2001). It appears a clear female predominance with a sex ratio of 3.6. This result is similar to data from several authors who reported a proportion of female between 75% and 85% of thyroid cancers (Carling et al., 2014). All age groups were affected by thyroid cancers; however, we observed an increase in frequency with age, a finding consistent with that is reported in the literature (Colonna et al., 2010). Mean age was 45.4 years (range: 19 - 83 years). This result is similar to that of Rakotoarisoa et al. in Madagascar who reported a mean age of 43.9 years, with range of 23 - 71 years (Rakotoarisoa et al., 2010). Most of the samples came from hospitals sized in the city of Lome; this could be explained by the fact that the implantation site of the only pathology laboratory Togo is Lome. Papillary carcinoma remains the main histological type of thyroid cancers; this is the case in this study with 47.8% of cases. They have been observed in 50% of cases in the study of Rakotoarisoa et al., and in 71% according to Kalk et al. (Kalk et al., 1997; Rakotoarisoa et al., 2010). Contrary, the follicular carcinoma was more frequent in our study (39.1%) compared to that observed in most studies which reported a frequency comprised between 8-15% (Colonna et al., 2007). The high frequency of this form of thyroid cancers in our study, confirms the known relationship between thyroid cancers and endemic goiter, the point of considering the impact of thyroid cancers as a regional indicator of endemic goiter (Hahn et al., 2001; Colonna et al., 2007). We did not find any study which clearly identifies regions of iodine deficiency in Togo. An aggressive course with lymph node and lung metastases

Table 1. Distribution of Thyroid Cancer According to Histological Types

| Histological Type           | Number of Cases (n) | Percentage (%) | Mean Age (Years) |
|----------------------------|---------------------|----------------|------------------|
| Papillary carcinoma        | 44                  | 47.8           | 43.8±1.6         |
| Follicular carcinoma       | 36                  | 39.1           | 41.6±0.4         |
| Anaplastic carcinoma       | 3                   | 3.3            | 47.4±1.8         |
| Medullar carcinoma         | 2                   | 2.2            | 48.3±0.2         |
| Non-Hodgkin lymphoma       | 5                   | 5.4            | 56.6±2.2         |
| Hodgkin lymphoma           | 2                   | 2.2            | 59.5±0.5         |
| Total                      | 92                  | 100%           | 45.4±0.3         |

Figure 1. Gender Distribution of Thyroid Cancers According to the Age

Figure 1. Gender Distribution of Thyroid Cancers According to the Age

Table 1. Distribution of Thyroid Cancer According to Histological Types

| Histological Type           | Number of Cases (n) | Percentage (%) | Mean Age (Years) |
|----------------------------|---------------------|----------------|------------------|
| Papillary carcinoma        | 44                  | 47.8           | 43.8±1.6         |
| Follicular carcinoma       | 36                  | 39.1           | 41.6±0.4         |
| Anaplastic carcinoma       | 3                   | 3.3            | 47.4±1.8         |
| Medullar carcinoma         | 2                   | 2.2            | 48.3±0.2         |
| Non-Hodgkin lymphoma       | 5                   | 5.4            | 56.6±2.2         |
| Hodgkin lymphoma           | 2                   | 2.2            | 59.5±0.5         |
| Total                      | 92                  | 100%           | 45.4±0.3         |
was observed in most cases with papillary carcinoma (Rego-Iraeta et al., 2009). Indeed, cervical lymph node metastases found in this study were mostly related to papillary type. The medullar and anaplastic carcinomas were rare, with respectively 3.3% and 2.2% of thyroid cancers. Rakotoarisoa et al. reported a frequency of 2.5% of anaplastic and medullar type (Rakotoarisoa et al., 2010). These results are explained by their rarity, as described in the literature; but by the lack of current measurement of blood calcitonin level and the lack of immunohistochemical examination which are necessary for the diagnosis in our laboratory. Primary thyroid lymphoma is a rare disease that continues to pose diagnostic problems in laboratories in developing countries, with no new diagnostic techniques. In laboratories equipped in the Western countries with techniques of immunohistochemistry and cytogenetics, it is easier to distinguish lymphoma anaplastic carcinoma (Montury et al., 1998; Stein 2013). Most of primary lymphomas develop from an autoimmune Hashimoto’s thyroiditis in the elderly (often 70 years) with a 3/1 female prevalence (Stein et al., 2013). The most common type of primary thyroid lymphoma with up to 70% of cases is diffuse large B-cell lymphoma (Michels et al., 2002). In our study, of the seven cases, five were diffuse lymphoma B.

Thyroid cancers are relatively common in Togo, occur in the adults persons with a female prevalence. Further cancer registry will be required in order to precise the real prevalence of this type of cancer in our country. The most common histological type was papillary carcinoma; however the high frequency of follicular carcinoma suggests a major role of iodine deficiency in the occurrence of these cancers. The improvement of the technical platform of the LAP (immunohistochemistry) should increase the diagnosis of rare forms such as medullar and anaplastic carcinoma.

References

Belot A, Grosclaude P, Bossard N, et al (2008). Cancer incidence and mortality in France over the period 1980-2005. Epidemiol Rev Public Health, 56, 159-75.

Carling T Udelsman R (2014). Thyroid cancer. Annu Rev Med, 65, 125-37.

Colonna M, Bossard N, Guizard AV, et al (2010). Descriptive epidemiology of thyroid cancer. Ann Endocrinol, 71, 95-101.

Colonna M, Guizard AV, Schwartz C, et al (2007). A time trend analysis of papillary and follicular cancers as a function of tumor size: a study of data from cancer registries in six France (1983-2000). Eur J Cancer, 43, 891-900.

Cotterill SJ, Pearce MS, Parker L (2001). Thyroid cancer in children and young adults in the North of England. Increasing incidence is related to the Chernobyl accident? Eur J Cancer, 37, 1020-6.

Dal Maso L, Bosetti C, La Vecchia C, Franceschi S (2009). Risk factoring for thyroid cancer: an epidemiological review Focused on nutritional factoring. Cancer Causes Control 20, 75-86.

Davies L, Welch HG (2006). Increasing incidence of thyroid cancer in the United States, 1973-2002. JAMA, 295, 2164-7.

Hahn K, Schnell-Inderst P, Grosche B, Holm LE (2001). Thyroid cancer diagnosis After administration of iodine-131 in childhood. Radiat Res, 156, 61-70.

Kalk WJ, Sitas F, Patterson AC (1997). Thyroid cancer in South Africa. An indicator of iodine deficiency regional. S Afr Med J, 87, 735-8

Kilfoy BA, Zheng T, Holford TR, et al (2009). International patterns and trends in thyroid cancer incidence, 1973-2002. Cancer Causes Control, 20, 525-31.

Michels JJ, Delcambre C, Marnay J, et al (2002). Primary thyroid lymphomas: clinicopathologic study of 30 cases and review of the literature. Ann Pathol, 22, 10-7.

Montury S, De Clermont H, Gatina JF (1998). Prevalence of thyroid cancer in Reunion from the scintigraphic data. Bull Soc Pathol Exot, 91, 22-5.

Rakotoarisoa AHN, Ralamboson SA, Rakotoarivelo RA, et al (2010). The thyroid cancers in Madagascar. Bull Soc Pathol Exot, 103, 233-7.

Rego-Iraeta A, Perez-Mendez LF, Mantinan B, Garcia-Mayor RV (2009). Time trends for thyroid cancer in northwestern Spain: true rise in the incidence of micro and larger forms of papillary thyroid carcinoma. Thyroid, 19, 333-40.

Sassolas G, Hafdi Nejjari-Z, Remontet L, et al (2009). Thyroid cancer incidence is the rise abating? Eur J Endocrinol, 160, 71-9.

Sawka AM, Brierley JD, Ezzat S, Goldstein DP (2014). Managing newly Diagnosed thyroid cancer. CMAJ, 186, 269-75.

Stein SA, Wartofsky L (2013). Primary thyroid lymphoma L. Wartofsky: a clinical review. J Clin Endocrinol Metab, 98, 3131-8.

Zhu C, Zheng T, Kilfoy BA, et al (2009). A birth cohort analysis of the incidence of papillary thyroid cancer in the United States, 1973-2004. Thyroid, 19, 1061-6.