



## Thyroid Carcinoma in University of Port Harcourt Teaching Hospital

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### Authors' contributions

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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**Short Communication**

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### ABSTRACT

**Introduction:** Thyroid carcinoma is a relatively uncommon disease with an estimated incidence of less than 1% of all cancers. Most of the thyroid carcinomas are papillary or follicular while medullary and anaplastic cancers are rare. The mainstay of treatment is total thyroidectomy, radioiodine and radiotherapy.

**Aim:** To review the clinico pathological features and management of thyroid carcinoma as seen in university of Port Harcourt Teaching Hospital.

**Patients and Methods:** This is an 8 year retrospective study of all patients with thyroid carcinoma managed at the University of Port Harcourt Teaching Hospital from 1<sup>st</sup> January 2008 to 31<sup>st</sup> December 2015. Relevant data extracted from the records were analysed using the Statistical Package for Social Sciences (SPSS) version 16.

**Results:** Thirty two patients with thyroid carcinoma were analysed out of 222 cases of thyroid

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diseases seen within the study period. There were 10 males and 22 females giving a male to female ratio of 1:2.2. Their ages ranged from 24 to 64 years with a mean of  $46.6 \pm 3.4$  years and peak age incidence was in the 7<sup>th</sup> decade. Follicular carcinoma was the commonest histological type. All patients had subtotal lobectomy or thyroidectomy and post operative complications were observed in 7 (21.9%) patients. Mortality rate was 3.1%.

**Conclusion:** Carcinoma of the thyroid was most commonly seen in the 7<sup>th</sup> decade of life and predominantly in females with follicular carcinoma being the commonest histological type encountered. In order to reduce the incidence of follicular carcinoma, we advocate widespread introduction of dietary iodine supplementation.

*Keywords: Thyroid carcinoma; patients; University of Port Harcourt Teaching Hospital.*

## 1. INTRODUCTION

Thyroid carcinoma is a relatively uncommon disease with an estimated incidence of less than 1% of all carcinomas [1]. It accounted for 1.3% of all malignant conditions at the University College Hospital, Ibadan [2]. However, it is the commonest endocrine tumor and may present either as a solitary or dominant thyroid nodule [3,4].

Most thyroid carcinomas are papillary or follicular tumors while medullary and anaplastic cancers are rare [4,5].

The mainstay of treatment of thyroid cancers is total thyroidectomy [6], radioiodine [7] and radiotherapy [8]. In developing countries, however, radiotherapy and radio isotopes are not readily available in most centres.

The aim of this study is to review the clinic pathological features and management of thyroid carcinomas as seen in University of Port Harcourt Teaching Hospital.

## 2. PATIENTS AND METHODS

This is an 8 year retrospective study of all patients with thyroid carcinoma managed in the University of Port Harcourt Teaching Hospital (UPTH) between 1<sup>st</sup> January 2008 and 31<sup>st</sup> December, 2015.

Information retracted from the clinical and histopathological records include age, sex, clinical presentation, histopathological diagnosis, treatment, post operative complications and outcome. The data were analysed using SPSS version 16.

The limitations of this study include the inability to find two case notes, incomplete records in two others and absence of certain information like

TNM, tumor size, etc in the case notes that would have been useful for analysis.

Ethical approval was obtained from the institution.

## 3. RESULTS

A total of 76 patients with thyroid neoplasms were seen out of the 222 cases of thyroid diseases that presented in our hospital within the study period. Forty one of them were benign tumours while 35 were thyroid carcinomas. Only 32 cases of thyroid carcinomas were analysed because 3 of them were excluded from the study due to incomplete clinical records.

There were 10 males and 22 females giving a male to female ratio of 1:2.2.

Their ages ranged from 24 to 64 years with a mean of  $46.6 \pm 3.4$  years. The peak age incidence (37.5%) was in the 7<sup>th</sup> decade. See Table 1.

Thirty (93.8%) patients presented with multinodular goitre while only 2 (6.2%) presented with solitary thyroid nodule.

No case of hyperthyroidism nor clinical evidence of metastasis was seen among the studied patients. Pre operative investigations done included thyroid function test, indirect laryngoscopy, x-ray of the neck and thoracic inlet, full blood count, electrolytes, urea and creatinine and urinalysis. Serum calcium, albumin and phosphate were not estimated both pre and post operatively. All the patients were euthyroid and there was no case of recurrent laryngeal nerve paralysis. There was retrosternal extension and tracheal deviation in 4 and 6 cases respectively.

All the patients had subtotal lobectomy or thyroidectomy and specimen sent for

histopathological analysis which confirmed malignancy. The histology revealed follicular carcinoma in 20 (62.5%) patients and papillary carcinoma in 6 (18.8%). Other histological findings are as shown in Table 2.

They were subsequently placed on levo thyroxine for life. Radio iodine is not available in our centre and those that will benefit from it were referred. Only 2 patients had completion thyroidectomy. Post operative complications were observed in 7 (21.9%) patients (see Table 3). One patient had recurrence (follicular carcinoma at the same site) after 2 years and was referred for radio iodine therapy. The 4 patients with reactionary haemorrhage were all re explored and haematoma evacuated. There was hoarsness in one patient which lasted for about 3 months. Hypothyroidism was observed in 2 patients after 2 years post operatively.

**Table 1. Age distribution**

Age distribution	Number of patients (%)
21-30	8 (25)
31-40	4 (12.5)
41-50	4 (12.5)
51-60	4 (12.5)
61-70	12 (37.5)
>70	0 (0)

**Table 2. Histological type**

Histological type	Number of patients (%)
Follicular carcinoma	20 (62.5)
Papillary carcinoma	6 (18.8)
Poorly differentiated carcinoma	4 (12.5)
Medullary carcinoma	2 (6.3)

**Table 3. Post operative complications**

Post operative complications	Number of patients (%)
Reactionary haemorrhage	4 (12.5)
Hypothyroidism	2 (6.2)
Hoarsness	1 (3.1)
Recurrence	1 (3.1)

Post operatively, the patients were followed up for about 30 months. However, 6 of them were lost to follow up after 4 months of post operative clinic visits.

Only 1 patient died and this was due to disease progression during the follow up period giving a mortality rate of 3.1%.

#### 4. DISCUSSION

Malignant thyroid lesions accounted for 14.4% of thyroid diseases in this series. This is similar to the findings of other studies within Nigeria [9,10]. In agreement with other reports [9,10], there was a female preponderance in our study with a male to female ratio of 1:2.2. The female preponderance in thyroid carcinoma could be correlated with the expression of oestrogen receptor on neoplastic epithelium [11].

Adeneji et al. [9] and Amabibi et al. [10] reported 5<sup>th</sup> and 6<sup>th</sup> decades respectively as the peak age incidence of patients with thyroid carcinomas in their studies. In this present study, the commonest occurrence was found in the 7<sup>th</sup> decade. No identifiable reason was noted for this variation. There was no patient with thyroid carcinoma under 20 years of age which was similar to the report of Amabibi et al. [10].

In agreement with other studies [12,13], majority of the patients presented with multinodular goitre. Only 2 (6.2%) patients presented with solitary thyroid nodule.

The study of Mulandzi et al. [14] in Durban, South Africa showed racial differences in the proportions of thyroid neoplasms. Papillary carcinoma (57%) was the commonest malignancy among Indians living in South Africa while follicular carcinoma (68%) was the commonest among black Africans in South Africa. This implies that racial and genetic factors may play an important role in the aetiopathogenesis of thyroid neoplasms. Similarly, in a study by Harach et al. [15] on childhood thyroid cancer in England and Wales, papillary carcinomas were the commonest accounting for 68% of all thyroid cancers. In our study, follicular carcinoma was the commonest cancer accounting for 62.5% of cases followed by papillary carcinoma in 18.8%. The finding of follicular carcinoma as the commonest thyroid malignancy is in line with that of several reports in Nigeria as well as other parts of the tropics [9,11,16,17]. This finding may be explained by a high prevalence of iodine deficiency in these regions [18]. In iodine deficiency, serum thyroid stimulating hormone (TSH) increases and the proliferation rate of thyroid cells increases by 5 to 30 fold leading to marked thyroid hyperplasia and hypertrophy [19]. It has been documented that thyroid tumours caused by iodine deficiency are due to chronic TSH overstimulation, possibly

working in consonance with epidermal growth factor and insulin-like growth factor [20,21]. Furthermore, it is also noted that another mechanism by which iodine deficiency contributes to thyroid tumorigenesis is by increasing hydrogen peroxide mediated reactive oxygen species generation which can damage DNA and result in mutations [22].

Other histological types of thyroid carcinoma were not common in this study. Medullary carcinoma constituted 6.3% of cases which is similar to the 5.1% reported by Thomas and Ogunbiyi [23].

It has been documented that surgery is the initial treatment of these patients and this was limited to the amount of disease present at operation in most cases in order to limit post operative complications [24]. Other treatment modalities which included radiotherapy, radio active iodine therapy and post operative suppression with thyroxine are given as indicated [24]. All our patients had sub total lobectomy or thyroidectomy and post operative complications were noted in 21.9% of the patients.

## 5. CONCLUSION

Carcinoma of the thyroid was most commonly seen in the 7<sup>th</sup> decade of life and predominantly in females with follicular carcinoma being the commonest histological type encountered.

In order to reduce the incidence of follicular carcinoma, we advocate widespread introduction of dietary iodine supplementation.

## CONSENT

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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