



Complications of Advanced Stage of Various Types of Thyroid Tumors at Tertiary Care Hospital

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Authors' contributions

This work was carried out in collaboration among all authors. Authors AAL, GAK and AGD designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors AGD and TAB managed the analyses of the study. Author RAP managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Objective: To determine the complications associated various types of tumors of advanced stage of thyroid disease at tertiary care hospital.

Study Design: Descriptive study.

Place and Duration: Two years study from April 2018 to March 2020 was conducted in Liaquat University of Medical and health sciences Jamshoro.

Patients and Methods: All patients were admitted from Outpatient department (OPD) with advance stage of tumor of thyroid and either of gender were included. The patients were evaluated fully after history and clinical examinations berries sign and specific investigations of thyroid profile (T3,T4,TSH), ultrasound of thyroid, fine-needle aspiration cytology FNAC, image guided biopsy, frozen section biopsy for confirmation of diagnosis, indirect laryngoscopy, x - Ray neck and MRI. All the patients were assessed for pre-operative evaluation (complications) with advanced stage of thyroid tumors. All the data regarding developed complications was recorded via study proforma. Data was analyzed by using the SPSS version 20.

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Results: Most of the patients were found with age groups of 20 to 34 years and 35 to 55 years. Out of all, 25 patients were diagnosed papillary carcinoma, 12 patients were diagnosed as follicular carcinoma, 7 patients had Anaplastic carcinoma, 4 patients were diagnosed lymphoma and 2 patients were diagnosed as medullary carcinoma. As per complications of advanced disease 23 patients had thyroid swelling with cervical lymphadenopathy and pain, 13 patients had thyroid swelling with change of voice, 7 patients had thyroid swelling with dyspnea and dysphagia, 5 patients were presented with thyroid swelling with bony pain, weight loss and pathological fractures, 2 patients were presented with thyroid swelling with diarrhea.

Conclusion: Various complications such as swelling, pain, hemorrhage, cervical lymphadenopathy, change in voice, weight loss, pathological fracture, dyspnea and dysphagia were frequently seen in patients presented with advanced stage of thyroid disease.

Keywords: Thyroid tumors; complications; advanced stage.

1. INTRODUCTION

Complications in thyroid tumors are common problem all over the world. Initially complication of the patient is the thyroid swelling in front of neck. The thyroid swelling may be physiological or pathological. Pathological may be infective, inflammatory, viral, benign may be simple solitary nodule, simple multi nodular, toxic solitary, toxic multi nodular, primary or secondary thyrotoxicosis benign and malignant [1,2]. Thyroid swelling commonly seen in females due to hormonal changes and reproductive factors, and estrogen receptors may play role for developing goiter formation. Thyroid tumors is commonly seen in those patients having simple solitary thyroid nodule (goiter) or multinodular goiter [3,4]. Thyroid tumors are a common malignancy of the endocrine system. Thyroid Tumors are more commonly seen in those patients who have history of exposed radiations [5]. The international studies report the ratio of malignancy in solitary thyroid swelling is 10 to 20% and ratio of malignancy in multinodular goiter is 3 to 5%. The risk of malignancy in a euthyroid patient with multi-nodules is estimated to be 3-10% with a range of 2 to 10% [6]. Papillary carcinoma for 30-40% of all type of thyroid tumors, follicular carcinoma has poor survival as compared to papillary carcinoma [6,7,8,9], anaplastic carcinoma has grave prognosis. Medullary carcinoma arises of para-follicular C-Cells. Majority of patients present with various complications, with long standing thyroid swelling with rapidly enlarge along with cervical lymph adenopathy, pain in thyroid tumors, change in voice, dyspnea, dysphagia, loss of appetite, weight loss, bone pain, pathological fracture, Diarrhea [1,2,10-13]. There is several investigations for the diagnosis such as doppler ultrasound of neck, fine needle aspiration cytology (FNAC) of thyroid tumors,

doppler ultra sound guided biopsy, or open biopsy if indicated, X – Ray of neck, C T scan of neck and MRI [14,15,16]. Over all treatment options are divided in early stage and advance stage. Early stage surgery Lobectomy with frozen section biopsy with total thyroidectomy with sampling, clearance, lymph node surgery, modified radical thyroidectomy and radical thyroidectomy and advanced stage Debulking type of surgery, tracheal ablation radioactive iodine (Radiotherapy), external beam radiotherapy, chemotherapy, gene therapy and immunotherapy [16-18]. The risk of malignancy in thyroid nodules increases as the serum TSH increases. TSH measurement should be part of the initial workup in every patient with a thyroid nodule and be used as a guide for further management. Recent studies have investigated the relationship between serum TSH concentration and thyroid cancer. TSH was found to be an independent predictor of malignancy in thyroid nodules. This study has been conducted to assess the pre-operative evaluation of advanced stage of thyroid tumors at tertiary care Hospital.

2. PATIENTS AND METHODS

It was a descriptive study of 50 patients carried out at surgical wards of Liaquat University of Medical and Health Sciences Jamshoro from April 2018 to March 2020. All patients were admitted from Outpatient department (OPD) with advance stage of tumor of thyroid and either of gender were included. All the patients who were not agreeing to participate in the study were excluded. The patients were evaluated fully after history and clinical examinations berries sign and specific investigations of thyroid profile (T3,T4,TSH), ultrasound of thyroid, FNAC, image guided biopsy either ultrasound, frozen section biopsy for confirmation of diagnosis, indirect

laryngoscopy, x - Ray neck and MRI. All the patients were assessed for developed complication with advanced stage of thyroid tumors. All the data was recorded in the study proforma. Data was analyzed by using the SPSS version 20.

3. RESULTS

Total 50 patients were studied and the age range of the patients was 20 to 75 years. Out of all 17 patients were seen in age group 20 to 34 years, 14 patients were in age group of 35 to 55 years, 12 patients were in age group of 56 to 65 years and 7 patients were in age group of 66 to 75 years (Table 1).

Out of all study subjects 25 patients had papillary carcinoma, 12 patients were seen with follicular carcinoma, 7 patients had anaplastic carcinoma, 4 cases were diagnosed with lymphoma and 2 patients had medullary carcinoma (Table 2).

Table 1. Age distribution of the patients=n50

Age group	No of patients	%
20 to 34	17	34.0%
35 to 55	14	28.0%
56 to 65	12	24.0%
66 to 75	7	14.0%

Table 2. Types of thyroid tumors =n50

Types of Tumors	No of patients	%
Papillary cell carcinoma	25	50.0%
Follicular cell Carcinoma	12	24.0%
Anaplastic carcinoma	7	14.0%
Lymphoma	4	8.0%
Medullary carcinoma	2	4.0%

As per pre-operative evaluation 25 patients were presented with thyroid swelling with cervical lymphadenopathy and pain, 12 patients were presented with thyroid swelling with change of voice, 7 patients were presented with thyroid swelling along with dyspnea and dysphagia, 4 patients were presented with thyroid swelling along bony pain, weight loss and pathological fractures, 2 patients were presented with thyroid swelling with diarrhea (Table 3).

4. DISCUSSION

Thyroid tumors are a most commonly seen all over the world. The overall risk was reported to be increasing worldwide with changing in characteristics, expose radiations. The patients of Thyroid tumors presented with thyroid swelling with rapidly enlarge with pain, inside hemorrhage and vascular invasion, change of voice, dyspnea, bony pain, Weight loss, pathological fractures and diarrhea [19,20]. Geographical and racial factors play important roles in the pathogenesis of thyroid tumors. If patients developed thyroid tumors and not diagnosed at early stage so patients can suffered in lot of complications and life of patients will be critical. Patients who developed thyroid swelling better to diagnose with help of thyroid profile (T3 T4 TSH), ultrasound of neck, FNAC, Thyroid scan, C T guided biopsy .on the basis of biopsy were diagnosed, benign and malignant thyroid tumors, prognosis of tumor depend on age of patient, metastases, extension, size of the tumor (AMES) age, grade, extent, size of the tumor (AGES) Girardia et al. [21] in his study showed age range between 12 to 90 years. Mostly occurrence was between the 51 to 60 years. Papillary carcinoma frequently found among all age group, although its high relatively frequency was between 31 to 50 year of the age, lymph node metastasis, well-differentiated thyroid carcinoma, greater tumor diameter and higher association with neurovascular invasion remain more frequent among young people. Mustafa et al. [22] in his study reported that the papillary carcinoma 75% to 85%, follicular carcinoma 10 % to 20%, medullary carcinoma 5% to 85, poorly differentiated and anaplastic thyroid cancer <5%, thyroidectomy is initial step in treatment .radioactive iodine 131 is used in papillary, follicular thyroid cancer for ablation of residual thyroid tissue. Prognosis of thyroid carcinoma depends on its stages at the time of diagnosis. Early diagnosis have better outcome. Merchant et al. [23] in his study reported that out of 50 patients 21 patients were in age group 31 to 45 year, 15 patients were in age group 15 to 30 year, 11 patients were in age group 46 to 60 year and 8 patients were in age group 61 to 75 year. 54 patients were presented with neck swelling, with weight loss, dyspnea in 28 patient's cervical lymphadenopathy 12 patients, dysphagia in 9 patients, change of voice in 11 patients, 2 patients presented with metastatic symptoms. 44 patients s were diagnosed papillary carcinoma, 6 patients were diagnosed follicular, 2 patients

Table 3. Complication according to different types of advanced stage tumors =50

Type of Tumor	Complications	No of patients	Percentage
Papillary Carcinoma	Thyroid Swelling with cervical lymphadenopathy & pain, inside Hemorrhage	25	50.0%
Anaplastic Carcinoma + Follicular Carcinoma	Thyroid swelling with change of voice	12	24.0%
Anaplastic + Follicular	Thyroid swelling with dyspnea & Dysphagia	07	14.0%
Follicular Carcinoma	Thyroid swelling With bone pain , pathological fracture, Weight loss	04	08.0%
Medullary Carcinoma	Thyroid swelling with Diarrhea + Hypertension	02	04.0%

were diagnosed medullary, 1 patients were diagnosed anaplastic and hurtle cell carcinoma was in 2 patients. Chidambaram et al. [24]. In his study 57 patients were presented with thyroid swelling, 10 patients had lymph node swelling, 6 patients had hoarseness of voice, 3 patients had Dysphagia, 3 patients had dyspnea, 5 patients had Distant metastasis.48 patients were diagnosed papillary carcinoma, 11 patients were diagnosed follicular carcinoma and 1 patient was diagnosed anaplastic carcinoma.

5. CONCLUSION

It was concluded that various complications of thyroid tumors like thyroid swelling, pain, hemorrhage, cervical lymphadenopathy, change in voice, weight loos, pathological fracture, dyspnea and dysphagia were seen with different types of advanced thyroid tumor. Swelling in neck with enlarges cervical lymph node commonly in papillary cell carcinoma, change in voice, dyspnea in anaplastic carcinoma and pathological fracture in follicular carcinoma, diarrhea and cervical lymph adenopathy in medullary cell carcinoma. If thyroid tumors not diagnosed and treated early stage patients can die with in years.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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