International Surgery Journal
Srinivasan AR et al. Int Surg J. 2018 Dec;5(12):4035-4039
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20185040

Original Research Article

A hospital based study on the surgical outcomes of thyroid malignancies

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Received: 21 September 2018
Accepted: 29 October 2018

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ABSTRACT

Background: Thyroid cancer is a heterogeneous disease that affects all age groups. The tumors are found to be more aggressive in the elderly. The distribution of these cancers in India continues to remain uncertain. The impact of geographic locations in the incidence of thyroid malignancies is yet to be explored. This study was done to estimate the prevalence and distribution of thyroid cancers.
Methods: This hospital based retrospective study was done at the Department of Surgery of our medical college hospital. About 50 medical records of patients diagnosed with thyroid cancers at our hospital were analyzed. Data on clinical examination, ultrasound findings and histopathology findings were documented.
Results: Out of the 50 patients studied 16 patients had dysphagia, eight patients had dyspnoea and 24 patients had regional metastasis. The most common surgery done for the primary cancer is total thyroidectomy. Hemithyroidectomy was done in 10 patients with SNG, out of which one patient had discrete lymph node per operatively and node dissection was carried out.
Conclusions: TSH suppressive doses are recommended for all patients with papillary and follicular thyroid cancers. A cohort study to analyze the survival outcomes of the patients treated with both the surgical modalities will give an insight into the management of thyroid malignancies.

Keywords: Papillary carcinoma, Neck dissection, Thyroidectomy, Multinodular goiter

INTRODUCTION

Thyroid carcinoma is a fascinating tumor because of the diversity in tumor presentation and behavior. It is a relatively rare tumor, though it is the most common endocrine malignancy. Despite the fact that majority of the thyroid disorders are hypothyroidism and other hormone imbalances, the incidence of thyroid malignancy is on the rise in the last few decades. This increase in the incidence could be attributed to routine head and neck evaluations by physical examinations and early detection through improved diagnostic and investigative procedures.[1] Thyroid cancer is a heterogeneous disease that affects all age groups. The tumors are found to be more aggressive in the elderly. Females have an increased preponderance to thyroid malignancies, and among all the types, papillary carcinoma is the most common type.

The management of thyroid cancers continues to be a challenge, due to the survival rates of differentiated cancers.[2] Therefore, irrespective of the type or extent of treatment, a high index of suspicion is required for the diagnosis of these cancers. Undifferentiated thyroid cancers continue to have a dismal prognosis.[3] Anaplastic thyroid carcinoma remains one of the most difficult human malignancies to treat and is highly lethal. Medullary thyroid cancer is one of the best characterized solid malignancies.

While most of the cancers can be treated surgically, the role of alternative therapies like chemotherapy, radiation therapy and iodine irradiation needs to be evaluated.[4] The British Thyroid Association came up with set recommendations as a guideline for the management of thyroid cancers in 2014. Accordingly, ultrasound imaging and fine needle aspiration cytology (FNAC) is the mainstay in diagnosis of thyroid malignancies.[5] Magnetic resonance imaging (MRI) or computerized tomography (CT) may be done in suspected cases to assess the extension of the tumor and involvement of the adjacent tissues like vocal cord, etc. The association has brought out guidelines for the surgical management of these thyroid cancers.[6] The decision on differentiating between the need for a total thyroidectomy or hemi thyroidectomy has been well outlined by these guidelines.[7]

In consequence to the British guidelines, the Americal Thyroid Association brought out their guidelines in 2015 with an emphasis on the need to monitor the Thyroid Stimulating Hormone (TSH) levels. It also highlights the mandate for monitoring Thyroglobulin (Tg) levels.

As far as the available literature goes, there are no separate guidelines in India for the therapeutic management of thyroid malignancies.[4] The knowledge base about thyroid malignancies is continuously evolving and an in depth research will help improve the management modalities in India. and may lead to better treatment options in the future.

Objectives

- To evaluate the role of TSH suppressive treatment with thyroxine for malignancies of thyroid.
- The assess the outcome of patients treated for thyroid malignancies

METHODS

Study setting

This retrospective study of hospital records was done in the Department of General Surgery of our medical college hospital with a diagnosis of thyroid cancers between January 2008 and September 2010.

Study population

The medical records of all patients with thyroid cancers admitted in our medical college hospital from January 2008 to September 2010 were selected for the study. Patients who had thyroid carcinoma on histopathology examination were included in the Study.

Ethical approval

Approval from the Institutional Ethics Committee was obtained prior to the commencement of the study.

Data collection

Data regarding the clinical examination and indirect laryngoscopy (done by E.N.T. Surgeons) for evaluation of vocal cord status were recorded. Ultrasound findings of the neck and fine needle aspiration cytology (FNAC) findings were documented. Patients who were symptomatic or had a positive or indeterminate FNAC were subjected to surgery. The relevant information was tabulated and used for analysis. After Surgery, all patients with differentiated thyroid cancers received suppressive dose of thyroxine. The observations were compared with the current literature on thyroid cancers and conclusions were drawn.

Data analysis

Data was entered and analyzed using Microsoft Excel 2007 spreadsheet. The prevalence and determinants of thyroid cancers were expressed as percentages.

RESULTS

All patients with thyroid cancer proven by histopathology admitted between January 2008 and September 2010 were included in the study. The study group consisted of 50 patients. The sex distribution of the study participants is given in Figure 1. About 90% of the participants were females while 10% were males.

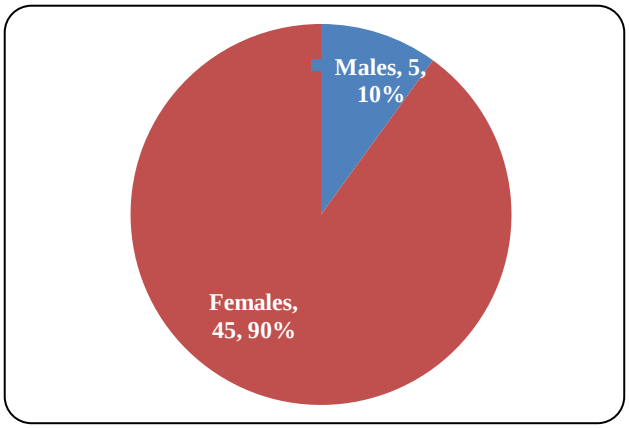

Figure 1: Sex distribution of the study participants.

The age distribution of the patients is given in Figure 2. In this study the peak incidence of thyroid cancers was between 21-30 years of age. The peak incidence of thyroid malignancies in males was >50 years of age and in females is between 21-30 years of age.

The clinical findings of the study participants are given in Table 1. Out of the 50 patients studied 16 patients had dysphagia, 8 patients had dyspnoea and 24 patients had regional metastasis. No other forms of thyroid malignancies like lymphomas or sarcomas were encountered. Frequency of patients with thyroid cancer associated with sex is given in Figure 3.

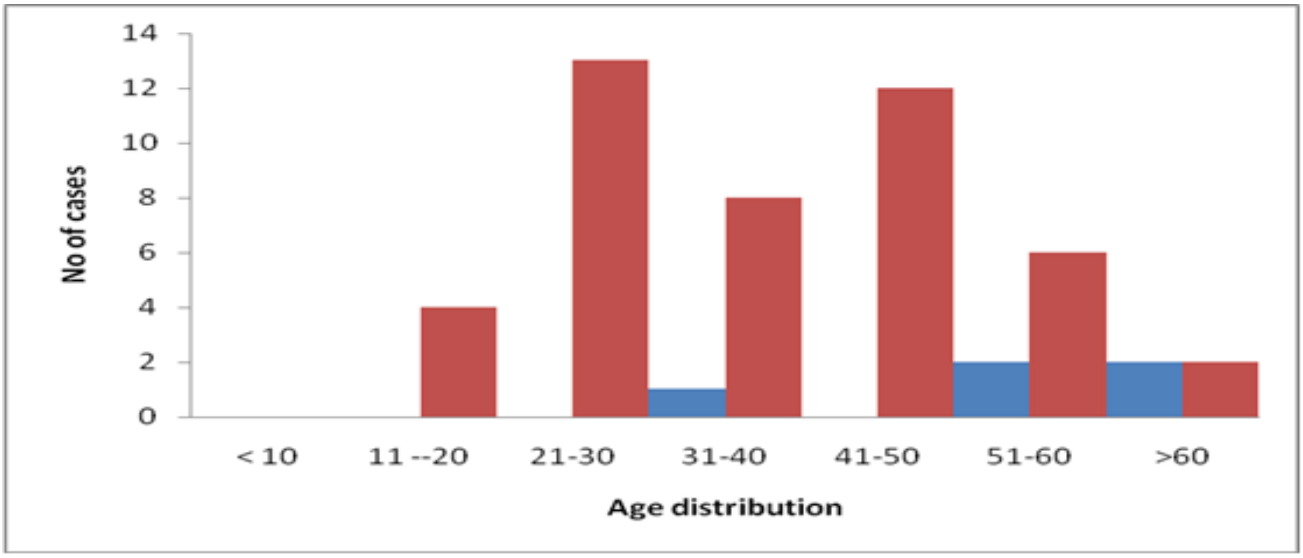

Figure 2: Age distribution for patients with thyroid cancer.

Table 1: Findings of patients with thyroid malignancies.

Symptoms	Papillary	Follicular	Medullary	Anaplastic	Total	%
MNG	24	2	2	2	30	60
SNG	15	3	2	0	20	40
Dysphagia	3	3	0	2	8	16
Dyspnea	2	0	0	2	4	8
Hoarsensess	2	0	0	2	4	8
Regional lymph node metastasis	22	0	2	0	24	48
Distant Metastasis	1	0	0	0	1	2

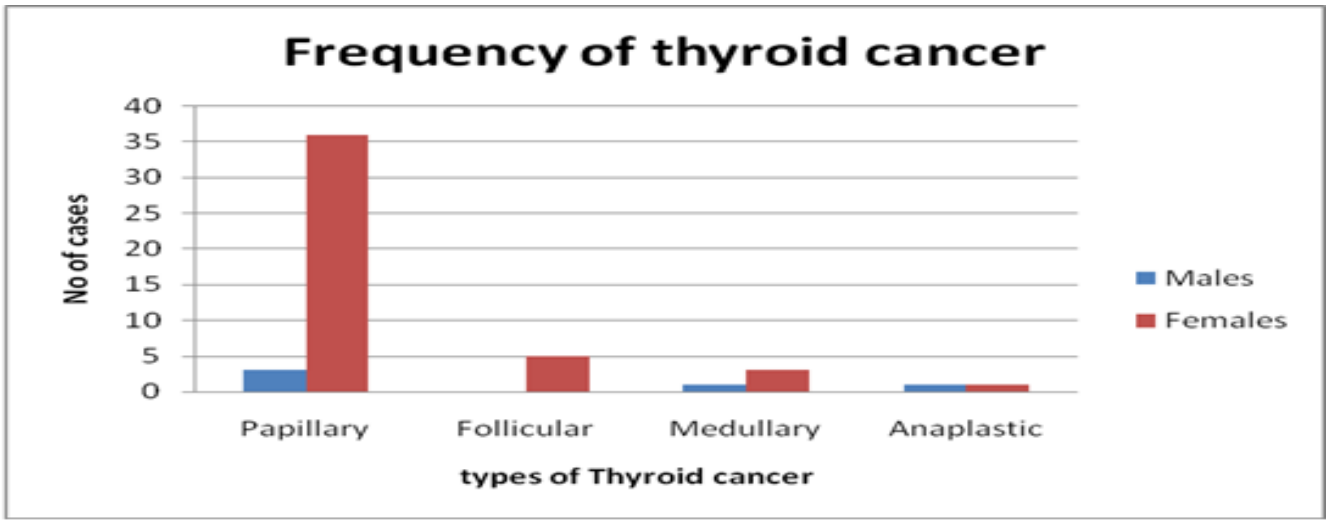

Figure 3: Frequency of patients with thyroid cancer associated with gender.

Treatment of thyroid malignancy

The most common surgery done for the primary cancer is total thyroidectomy. Hemithyroidectomy was done in 10 patients with SNG, out of which one patient had discrete lymph node per operatively and node dissection was carried out. Out of 24 patients, 20 with palpable cervical node were subjected to neck node dissection on the involved side (i.e. the side with palpable nodes) (Table 2).

Table 2: Distribution of treatment for patients with thyroid malignancy.

Types of surgery	Papillary	Follicular	Medullary	Anaplastic
Thyroidectomy				
Total thyroideectomy	24	5	3	0
Subtotal thyroidectomy	4	0	0	0
Hemithroidectomy	9	0	1	0
Neck dissection				
Anterior neck dissection	1	0	1	0
MRND/FND	18	0	0	0

Out of the 32 patients in which total thyroidectomy was done, 4 patients had post–op hypocalcemia, which was treated with calcium gluconate. The patients recovered and remained asymptomatic during follow up. Patients with undifferentiated anaplastic carcinoma were treated with radiotherapy and chemotherapy.

All patients with differentiated thyroid cancers were followed postoperatively with suppressive doses of thyroxine.

DISCUSSION

Papillary carcinoma of thyroid is the most common thyroid malignancy in the study group. Usually 2/3rd of patients with differentiated thyroid carcinoma have disease localized to thyroid at presentation.[8] In the study group, 60.3% patients have disease localized to the thyroid. The most common symptom at presentation for all thyroid cancers is a thyroid swelling.[9] About 60% of the patients presented with multinodular goiter.[10] Total thyroidectomy is now advocated for all well differentiated thyroid cancers and medullary thyroid cancer. Central compartmental dissection is to be done for all medullary thyroid cancers.[11-13] Modified radical neck dissection is recommended only in the presence of metastatic cervical lymph nodes.[14,15] In the study group, total thyroidectomy was the most common surgery performed. Out of 24 patients with palpable cervical lymph node, 20 (83.3%) underwent neck node dissection on the involved side.

A combination of radiotherapy and chemotherapy (with Adriamycin) is the most appropriate therapy for undifferentiated carcinomas.[16] TSH Suppressive doses of levothyroxine are recommended for all patients with papillary and follicular thyroid cancers.[17] This was followed for all patients in the study group with differentiated thyroid cancers. The goal of this therapy is to maintain serum TSH concentration of 0.1 Mu / L or less.[18]

CONCLUSION

This study has explored the role of thyroidectomy and neck dissection in the surgical management of thyroid malignancies. TSH suppressive doses are recommended for all patients with papillary and follicular thyroid cancers. Life expectancy of patients following surgery could not be ascertained due to the short duration of the study. A cohort study to analyze the survival outcomes of the patients treated with both the surgical modalities will give an insight into the management of thyroid malignancies.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Srinivasan AR, Rajachidambaram K, Karthick P, Vijay Anand M. A hospital based study on the surgical outcomes of thyroid malignancies. Int Surg J 2018;5:4035-9.