

Frequency of Thyroid Cancer at King Fahad Hospital, Madinah

1. Muhammad Jawed 2. Aftab Ahmed Shaikh 3. Muhammad Iqbal Khan

1. Asstt. Prof. of Surgery & Bariatric Surgeon, Surgical Unit-1, Dow University Hospital OJHA Campus Karachi 2. Consultant Radiologist, King Fahad Hospital Madina Munawara 3. Senior Registrar, Jinnah Postgraduate Medical Centre, Karachi

ABSTRACT

Objective: To assess the frequency of common thyroid cancer at King Fahad Hospital, Madinah.

Study Design: Retrospective study.

Place and Duration of Study: This study was carried out on all the patients treated for Cancer of Thyroid Gland, at King Fahad Hospital (KFH)-Madinah between Jan 2009 to February 2012.

Patients and Methods: Ninety-one patients diagnosed with Cancer of Thyroid of various Age, Sex & Races were registered with King Fahad Hospital Madinah.

Results: 75% patients were Saudi nationals, 10 % patients were from other Arab countries and the remaining 15 % were non-Arabs. There were 72% females and 28% Males. The Ages ranged from 14 years to 94 years. 34% of these patients were less than 30 years of Age at the time of the diagnosis. Over 90 % of the cases presented with Swelling Anterior Neck while in other 10% of the cases Dysphagia or Dyspnoea with Rt. or Lt. supraclavicular mass/swelling was the major complaint. 71% patients under went various surgical procedures for the Neck swelling. The Total Thyroidectomy was done in 48% patients. The Histology revealed 52 % of pure Papillary Carcinoma and 23 % were of Follicular origin. Majority of the diagnosed patients of Ca. Thyroid were referred to King Faisal Specialist Hospital Riyadh for Radioactive Iodine Ablation Therapy. The follow-up was poor as patients were from highly mobile population and belonged to Nine different countries.

Conclusion: The study reveals that the presentation of Ca. Thyroid in our series is essentially similar to what has been reported from other parts of the world.

Key Words: Radioactive Iodine (RAI) Ablation Therapy, Thyroidectomy, Thyroglobulin, Goiter, Malignancy, Thyroid.

INTRODUCTION

Thyroid cancer is a relatively rare and comprises a heterogeneous group of malignant neoplasms that show differences in biological behavior, but the prognosis as well¹⁻². Follicular cancer tends to metastasize to the lungs and bones, while the papillary carcinoma commonly spreads to the lymph nodes. Metastases to the cervical lymph nodes are located in the 15% -50% of papillary carcinoma when time of diagnosis³. Thyroid cancer is the most common of all cancers of the endocrine glands, which represents 87% of all cancers of the endocrine glands. Thyroid cancer, although relatively rare, is the second most common cancer among women in Saudi Arabia⁴⁻⁷.

Over the past two decades, there has been significant improvement in the survival of the cancer patients in general and those suffering from Cancer of thyroid. This is largely attributed to the multicentre prospective studies conducted by various Centers in the United States, Europe and other internationally recognized institutes^{8,9}. However this may not be the case in the developing countries where social as well as the regional factors contributes to the outcome of the disease. The study of epidemiology and pattern of cancer is of the utmost importance for the establishment of the both preventive and therapeutic measures. This

calls for the setting up of a Multicentre National Cancer Registry in the Kingdom of the Saudi Arabia for Ca. Thyroid patients.

PATIENTS AND METHODS

The King Fahad Hospital (KFH)-Madinah is a tertiary care referral hospital in the Kingdom of Saudi Arabia. A retrospective study was done of all the patients treated for Cancer of Thyroid Gland at the hospital between Jan 2009 to February 2012. Between this period 91 patients were treated at the hospital for the various types of thyroid malignancies. The Medical Records of these patients of Ca. Thyroid were reviewed for the Age at diagnosis, Sex & Mode of presentation. An attempt is also made to analyze the Ethnic distribution, Initial diagnosis before registration with KFH, Clinical Extent of the disease at Initial Presentation, the Commonest type of Malignancy and the type of treatment given in these patients.

RESULTS

Ninety-one (91) patients diagnosed with Cancer of Thyroid of different Age, Sex and races were registered at KFH between the study period. Of these, 68 patients were Saudi nationals, 09 patients were from other Arab countries and remaining 14 patients were

non-Arabs Chart No-1. There were 66 Females and 25 Males. The Female to male ratio was 5:2. The Ages ranged from 14 years to 94 years. 31 of these patients were less than 30 years of Age at the time of the diagnosis. Over 90 percent of the cases presented with Swelling Anterior Neck while in other 8 to 10 percent cases Dysphagia & Dyspnoea with Rt. or Lt. supraclavicular mass/swelling was the major complaint. Their mode of presentation is given in Table-1. Of these 91 patients , one patient was diagnosed having Sub-Sternal mass, one patient came with the complaints of Scrotal swelling who was diagnosed coincidentally as a case of Ca. Thyroid and the one patient came with the diagnosis of Lipoma Thyroid. Majority of the patients 63 (69%) were referred from various local or territory hospitals around Madinah with the provisional diagnosis of Goiter while 07(8 %) patients were referred with the diagnosis of Ca. Thyroid.

Clinical Extent: Well Differentiated Papillary Ca. tends to metastasize to local neck nodes while Follicular lesions tends to hematogenously metastasize mostly to Lungs and Skeleton^{3,9,10,11}. In our series the disease was diagnosed at early stage as in 73 (80 %) patients the disease was localized while wide spread Metastasis (Lungs Bone etc.) was noted in 13 (14 %) patients. Five (5.5 %) patients came with the Recurrence of the disease.

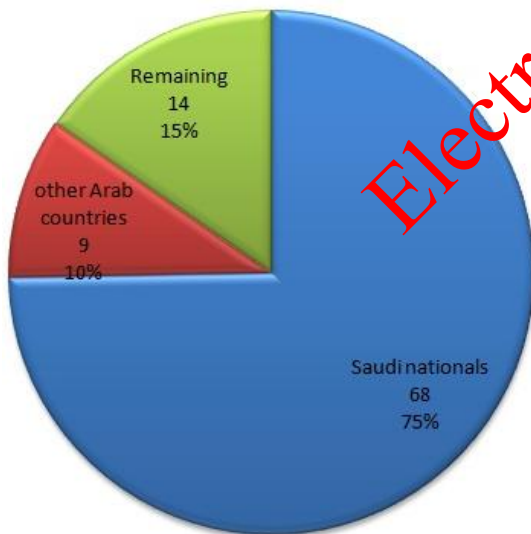


Chart No.1: Nationality

Predominant Histology & Treatment: Primary treatment offered at KFH was Surgery which was followed by the Radioactive Iodine 131 Ablation Therapy at King Faisal Specialist Hospital (KFSH)-Riyadh. The surgical procedures were chosen according to the Clinical Status and the Extent (staging) of the disease. 65 (71%) patients under went various surgical procedures for the Neck Swelling. The Total Thyroidectomy was done in 31 (48 %) patients, Near

Total Thyroidecomy in 8 (12 %) patients, Sub-Total Thyroidectomy in 12 cases (18%) while the Partial Thyroidectomy was carried out in 14(21 %) patients Table No. 2. Due to poor general condition or other accompanying systemic diseases the surgery was not possible in 10 (11 %) patients and these patients were given only symptomatic treatment. Due to extensive disease 11 (12 %) patients were Inoperable , these patients were refereed to KFSH Riyadh for further management while in other 5 patients the details of the surgery was not available.

Majority of the diagnosed patients of Ca. Thyroid from KFH-Medina were referred to King Faisal Specialist Hospital - Riyadh for Radio-active I-131 Ablation Therapy.

Table No.1: Presenting symptoms

Symptoms	No. of Patients	Percentage
Neck mass	91	100%
Dysphagia	17	18.68%
Pain	10	10.98%
Dyspnea	8	8.79%
Hoarseness	6	6.59%
Thyrotoxicosis	3	3.29%
Weight loss	2	2.19%

Table No.2: Surgical Procedures (n=65)

Symptoms	No. of Patients	Percentage
Total	31	48%
Thyroidectomy		
Near Total	8	12%
Sub-Total	12	18%
Partial	14	21

DISCUSSION

The incidence of thyroid cancer is increasing much faster than any other cancer in the United States (including liver cancer), almost tripled from 1980 to 2006. Improved diagnosis has been proposed as the main reason for this change by some, while others argue that other factors are responsible for the increase^{10,11}. Cancer of thyroid is more common in women than men¹². In our set up, majority of the female patients attending out patient clinics are Muslims , covering their faces and neck and hesitate to uncover. Without proper physical examination of the neck, small or deeply cited thyroid nodule may remain obscure or undiagnosed . This indicates the importance of the physical examination of the neck even if the presenting complaint is only dysphagia or dyspnoea. The female patients may be explained the importance of the physical exam to overcome this problem.

It is interesting to note that patients with the complaint

of Neck swelling attended the hospital after considerable laps of time. 10 % of these patients came with the history of Neck swelling for a period more than 10 years while 22 % patients with Neck swelling for a duration between 5 to 10 years. Despite of other complications, in the long-standing cases there is high probability of cancerous changes in thyroid nodules. Awareness in the general population regarding Thyroid related diseases and its outcome in long-standing cases may be an ultimate remedy.

Although most thyroid nodules are not cancerous, thyroid cancer is diagnosed in about 10,000 people each year in United States¹³. The Fine Needle Aspiration Cytology (FNAC) of palpable nodules in the thyroid gland may also greatly contribute in the early detection of the disease. The thyroid scan may differentiate between Hot and Cold nodules. As reported in many international journals the cold nodules are more prone to be cancerous than Hot nodules¹⁴. This may increase the sensitivity of FNAC and help in selecting patients for the procedure. The thyroid scintigraphy and FNAC is routinely carried out in our hospital and majority of our patients had thyroid scanning and FNAC in this series.

Total or near Total thyroidectomy is preferable to a more limited excision, specially in persons with primary lesions that are larger than 2.5 cm, multiple or locally invasive^{15,16}. In our series 39 patients (60 %) out of selected 65 patients for thyroid surgery had Total or near Total Thyroidectomy.

The use of Radioactive Iodine 131 in the treatment of cancer of thyroid has a sound theoretical basis¹⁷. Iodine organification is a thyroid specific function and ¹³¹I is an effective agent for delivering radiation to the thyroid tissue with low radiation dose to other portions of the body. Despite the theoretical suitability it is not clear whether such therapy prolongs life. Various series report either no effect or an effect only in a subset of patients. However this modality is commonly employed because of paucity of long-term complications and acute adverse effects at least in the adult. Due to some limitations, this treatment was not possible at KFH Medina. With the provision of a consultant Endocrinologist and active Nuclear Medicine department, this treatment will soon be started at this hospital.

The Human Thyroglobulin (Tg) is secreted only by thyroid gland and can be elevated in benign thyroid conditions (goiter, benign nodules). It is also secreted by most differentiated thyroid cancer¹⁸. Post thyroidectomy and ablation therapy, the thyroglobulin measurement does appears to be highly sensitive and specific in the follow up. Sensitivity range 83-100 % and specificity 83-97%. We noticed that very few patients were screened for this important diagnostic modality in our series. This may be due to the reason as the patients were treated in "Split Manner" between

KFH-Medina and King Faisal Specialist Hospital Riyadh and the follow up record of majority of the patients was maintained by KFSH Riyadh.

It was difficult to define the long-term survival rate of these patient as the patients were from a highly mobile population and patients over 9 countries were included in this study. The follow up of the patients was also very poor as most the patients were attending KFSH-Riyadh for their follow-up visits after Radioactive Iodine 131 Therapy.

CONCLUSION

We have attempted to document those aspects of the management of Thyroid cancer which we believe to be important. We are concerned that patients managed outside the King Fahad Hospital-Medina following surgery, face considerable inconvenience of traveling for their treatment & also for the follow up visits post Radioactive Iodine 131 therapy. Moreover the documentation at re-referral is usually inadequate, which make logical decision making with regard to further therapy at our hospital difficult. Often, it is necessary to make empirical decision based on little data provided. This situation is clearly not ideal for the patients. We hope that the provision of Radioactive Iodine 131 therapy at this hospital will bring an improvement in patients care and management. We also purpose to undertake a quantitative analysis of the problems we have pointed out in this paper.

REFERENCES

1. Larson SD, Jackson LN, Riall TS. Increased incidence of well-differentiated thyroid cancer associated with Hashimoto thyroiditis and the role of the PI3k/Akt pathway. *J Am Coll Surg* 2007;204: 764-775.
2. Garner CN, Ganetzky R, Brainard J. Increased prevalence of breast cancer among patients with thyroid and parathyroid disease. *Surg* 2007;142: 806-813.
3. Shah SH, Muzaffar S, Soomro IN, Hasan SH. Morphological Pattern and Frequency of Thyroid Tumors. *JPMA* 1999;49:131-3.
4. Al Sobhi SS. The Current Pattern of Thyroid Surgery in Saudi Arabia and How to Improve It. *Annals of Saudi Med* 2002;22(3-4):3-4.
5. Htwe TT, Hamdi MM, Swethadri GK, Wong JOL, Soe MM, Abdullah MM. Incidence of Thyroid Malignancy among Goitrous Thyroid Lesions from the Sarawak General Hospital. *Singapore Med J* 2009;50(7):724-728.
6. Handa U, Garg S, Mohan H, Nagarkar N. Role of fine needle aspiration cytology in diagnosis and management of thyroid lesions: A study on 434 patients. *J Cytol [serial online]* 2008 [cited 2009];25:13-7.
7. Ross SD. Predicting Thyroid Malignancy. *The J*

- Clin Endocrinol & Metabol 2006;91(11):4253-5.
8. Enewold L, Zhu K, Ron E. Rising thyroid cancer incidence in the United States by demographic and tumor characteristics, 1980-2005. Cancer Epidemiol Biomarkers Prev 2009;18(3):784-91.
 9. Ferlay J, Shin HR, Bray F. GLOBOCAN 2008 v1.2, Cancer incidence and mortality worldwide: IARC CancerBase No. 10 [Internet]. Lyon, France: International Agency for Research on Cancer; 2010. Available from <http://globocan.iarc.fr>.
 10. Reynolds RM. Changing trends in incidence and mortality in Scotland. Clin Endocrinol 2005; 62(2):156-162.
 11. Leenhardt L, Grosclaude P, Cherie-Challine L. Increased incidence of thyroid carcinoma in France: a true epidemic or thyroid nodule management effects? Report from the French Thyroid Cancer Committee 2004;14(12):1056-1060.
 12. Al-Amri AM. Pattern of Thyroid Cancer in the Eastern Province of Saudi Arabia: University Hospital Experience. J of Cancer Therapy 2012; 3:187-191.
 13. Al-Nauim AR, Ahmed M, Bakheet S. Papillary Thyroid Cancer in Saudi Arabia, Clinical, Pathologic and Management Characteristics. Clin Nuclear Med 1996;21(4):307-311.
 14. Musani MA, Khan FA, Malik S, Khambaty Y. Fine needle aspiration cytology: sensitivity and specificity in thyroid lesions. J Ayub Med Coll Abbottabad 2011;23(1):34-36.
 15. Yen TC. Tc-99m MIBI for Postsurgical diagnosis of metastasis Hurtle cell carcinoma. Eur J Nucl Med 1994;1 21:980.
 16. Mazzaferri EL, Jhiang SM. Long term impact of Initial surgical & medical therapy of Papp. & Foll: cancer of Thyroid. Am. J Med 1994: 418-428.
 17. Ramsden J, Watkinson JC. Thyroid cancers. Scott-Brown's Otorhinolaryngology, Head and Neck Surgery. 7th ed. Hodder Arnold 2008;2: 2663-701.
 18. Lin DT, Deschler DG. Neck Masses. Current Diagnosis and Treatment, Otolaryngology Head and Neck Surgery, 2nd ed. Mc Graw Hill: 2008.p.397-407.

Address for Corresponding Author:**Muhammad Jawed**

Asstt. Prof. of Surgery & Bariatric Surgeon,
Surgical Unit-1, Dow University Hospital,
OJHA Campus, Karachi
Email: doctorjawed@yahoo.com
Cell No. 03322514095

Electronic Copy