

ABSTRACT

Objectives: To improve our local data and demographics of thyroid neoplasm in Makkah region, Kingdom of Saudi Arabia and provide some basic statistics for future studies in our local community.

Methods: A record based retrospective epidemiological study was conducted and included 314 thyroid disease patients who were presented to our centers at Makkah region, Kingdom of Saudi Arabia between December 2009 and December 2019.

Results: A descriptive statistical analysis was carried out. The average age was 42.77 years, with a female- to-male ratio of 3:1, and most of the patients were Saudi (77%). Fifty-seven percent of cases were benign, while in malignant cases, 33.4% were papillary thyroid carcinoma. The mean follow-up time was 15.44 months, with excellent compliance in 39.4% of the patients.

Conclusion: Thyroid tumors have a leading incidence in head and neck tumors in Makkah, Kingdom of Saudi Arabia, mandating further studies to determine the causes and distribution in other regions of the country.

OBJECTIVES

To improve our local data and demographics of thyroid neoplasm in Makkah region, Kingdom of Saudi Arabia and provide some basic statistics for future studies in our local community.

MATERIAL AND METHODS

A record based retrospective review of a prospectively maintained demographic and clinical database of 314 thyroid disease-related patients including all the patients with thyroid nodule who were presented to our centers in Makkah region, KSA, from December 2009 to December 2019 and treated surgically. Exclusion criteria included patients less than 14 years old and patients with thyroid nodules who were treated medically. The study was approved by the Institutional Review Board of King Abdullah Medical City (KAMC), Makkah, KSA, and the National Biomedical Ethics Committee, King Abdulaziz City for Science and Technology (Protocol number 14-07-1433, registration number H-02-K-001). Preoperative data such as patient symptoms, type of surgery before referral, family history, drug history, vocal cord assessment, thyroid function test, the main radiological study in the patient, and pathological results of biopsy or reviewed pathology were recorded. Operative data related to the types of thyroid and neck surgeries, the result of the pathology type, and the TNM cancer stage were also obtained. Post-operative data included a clinical examination of the vocal cord and radiology, followed by neck US and computerized tomography (CT), if the patient received radioactive iodine (RAI). The dose for well-differentiated thyroid cancer cases, thyroglobulin level post-RAI ablation, post-operative hypocalcemia, recurrent laryngeal nerve (RLN) paralysis, and records of any revision surgery and outcome were incorporated into the database.

Statistical analysis: The Statistical Package for Social Sciences version 22 (IBM Corp., Armonk, NY, USA) package was used to analyze the data. The participants variables were estimated using descriptive statistics, including frequency counts and percentages for categorical variables.

RESULTS

A total of 314 cases in our study with 179 benign cases and 135 malignant cases. The median age was 42.77 years, with a female-to-male ratio of 3:1. Most patients were Saudi (77%), half were from the Western KSA (157 Jeddah, Makkah, Taif),

The data for 314 Thyroid Patients divided into Preoperative (TABLE 1) and Post Operative data (TABLE 2)

From the last follow-up visit of cancer cases after thyroid surgery and RAI ablation, and according to the the American Thyroid Associations (ATA) of differentiated thyroid carcinoma (DTC), 39.4% of the participants had an excellent response status, and mean follow-up was 15.4 months (Figure 1). The outcome of the 7 cases of non-DTC as follows: one case anaplastic thyroid cancer died from the disease within 5 months of the diagnosis, and the remaining 6 medullary thyroid cancer cases; had excellent response without any evidence of

CONCLUSIONS

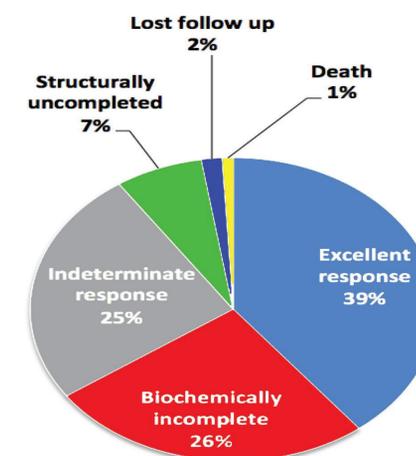
thyroid tumors have a leading occurrence in head and neck tumors in Makkah, KSA. The continuous building of surgical experience and data collection are very important in achieving research and clinical excellency. Furthermore, conducting more studies to determine their causes and distribution in other regions of the country is needed

REFERENCES

- Saeed MI, Hassan AA, Butt ME, Baniyaseen KA, Siddiqui MI, Bogari NM, et al. Pattern of thyroid lesions in western region of Saudi Arabia: a retrospective analysis and literature review. *J Clin Med Res* 2018; 10: 106-116.
- Musani A, Khan A, Ashrafi K, Jawaid I, Muger N, Malik S. Spectrum of thyroid disease presenting in ENT dept. Evaluation by *FNAC Pak J Otolaryngol* 2010; 26: 74-75.
- Al-Qahtani KH, Tunio MA, Asiri MA, Bayoumi Y, Balbaid A, Aljohani NJ, et al. Comparative clinicopathological and outcome analysis of differentiated thyroid cancer in Saudi patients aged below 60 years and above 60 years. *Clin Interv Aging* 2016; 11: 1169-1174.
- Alghamdi IG, Hussain II, Alghamdi MS, Dohal AA, Almalki SS, El-Sheemy MA. The incidence rate of thyroid cancer among women in Saudi Arabia: an observational descriptive epidemiological analysis of data from Saudi cancer registry 2001-2008. *J Immigr Minor Health* 2015; 17: 638-643.
- Hardman JC, Smith JA, Nankivell P, Sharma N, Watkinson JC. Re-operative thyroid surgery: a 20-year prospective cohort study at a tertiary referral centre. *Eur Arch Otorhinolaryngol* 2015; 272: 1503-1508.
- Zakaria HM, Al Awad NA, Al Kreedes AS, Al-Mulhim AM, Al-Sharway MA, Hadi MA, et al. Recurrent laryngeal nerve injury in thyroid surgery. *Oman Med J* 2011; 26: 34-38.
- Kohnen B, Schurmeyer C, Schurmeyer TH, Kress P. Surgery of benign thyroid disease by ENT/head and neck surgeons and general surgeons: 233 cases of vocal fold paralysis in 3509 patients. *Eur Arch Otorhinolaryngol* 2018; 275: 2397-2402.
- Haugen BR, Alexander EK, Bible KC, Doherty GM, Mandel SJ, Nikiforov YE, et al. 2015 American thyroid association management guidelines for adult patients with thyroid nodules and differentiated thyroid cancer: the American thyroid association guidelines task force on thyroid nodules and differentiated thyroid cancer. *Thyroid* 2016; 26: 1-133.
- Qureshi IA, Khabaz MN, Baig M, Begum B, Abdelrehaman AS, Hussain MB. Histopathological findings in goiter: a review of 624 thyroidectomies. *Neuro Endocrinol Lett* 2015; 36: 48-52.
- Ogawa C, Kammori M, Onose H, Yamada E, Shimizu K, Yamada T. Follicular carcinoma arising from the pyramidal lobe of the thyroid. *J Nippon Med Sch* 2009; 76: 169-172.
- Enomoto K, Uchino S, Watanabe S, Enomoto Y, Noguchi S. Recurrent laryngeal nerve palsy during surgery for benign thyroid diseases: risk factors and outcome analysis. *Surgery* 2014; 155: 522-528.
- Aljabri KS, Bokhari SA, Al MA, Khan PM. An 18-year study of thyroid carcinoma in the western region of Saudi Arabia: a retrospective single-center study in a community hospital. *Ann Saudi Med* 2018; 38: 336-343.
- Rathod GB, Parmar P. Fine needle aspiration cytology of swellings of head and neck region. *Indian J Med Sci* 2012; 66: 49-54.
- Mundasad B, Mcallister I, Pypier P, Carson J. Accuracy of fine needle aspiration cytology in diagnosis of thyroid swellings. *Int Rev Cytol* 2003; 14.

Variables	N (%)
Compression symptoms	68 (21.6)
Family history of cancer	9 (2.8)
Pre-operative vocal cord palsy confirmed by flexible scope :	
Unilateral	17 (5.4)
Bilateral	1 (0.3)
Normal	296 (94.3)
Type of previous thyroid surgery (n=43) :	
Hemi-thyroidectomy	22 (7.0)
Subtotal thyroidectomy	14 (4.4)
Near total thyroidectomy	7 (2.2)
Radiology :	
US	182 (57.9)
US+CT	74 (23.6)
CT	58 (18.5)
Thyroid FNA/histopathology :	
Benign	150 (47.8)
FLUS/Follicular neoplasm	69 (22.0)
PTC	89 (28.3)
Medullary	5 (1.6)
Lymphoma	1 (0.3)

Variables	N (%)
Type of thyroidectomy :	
Hemi-thyroidectomy	83 (26.4)
Total/completion thyroidectomy	231 (73.6)
Neck dissection :	
Unilateral	18 (5.7)
Bilateral	15 (4.8)
Post-operative VC palsy :	
Old unilateral	5 (1.6)
New unilateral	4 (1.3)
Bilateral	0 (0.0)
Mobile VC	305 (97.1)
Revision surgery (n=17/314) :	
Neck dissection	5 (1.6)
Completion	12 (3.8)
Histopathology :	
Benign	179 (57.0)
Papillary	105 (33.4)
Follicular	16 (5.1)
Hurthle cell	6 (1.9)
Medullary	6 (1.9)
Anaplastic	1 (0.3)
Lymphoma	1 (0.3)
Papillary thyroid carcinoma variants :	
Classical	75 (71.4)
Follicle	26 (24.8)
Tall cell	4 (3.8)
RAI treatment given to (n=94/127) (74.0 %) :	
Done in our center	80 (63.0)
Done outside our center	14 (11.0)
Number of radioactive iodine doses :	
1	64 (68.1)
2	11 (11.7)
3	19 (20.2)
Follow up thyroglobulin :	
<1ng/ml	52 (41.0)
1-10 ng/ml	33 (26.0)
>10 ng/ml	40 (31.5)
Missed	2 (1.6)



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