Al-Kindy College Medical Journal (KCMJ)

Case Report

Rapidly Progressing Non-Hodgkin's Lymphoma of Thyroid Gland

Madhusmita Patnaik [1], Gautam Patnaik [2], Jayshree Swain[1*], Jayabhanu Kanwar [1*],

[1] Department of endocrinology, IMS & SUM Hospital, Siksha O Anusandhan (deemed to be) University, K8 Lane 1, Kalinganagar, Bhubaneswar, Odisha 751003, India

[2] Special Centre for Molecular Medicine G5Q8+P3W, Jawaharlal Nehru University, New Delhi, Delhi 110067, India

* Corresponding author's email: drjayshree_swain@yahoo.com

Article history:
Received 4 August 2023
Accepted 9 October 2023
Available online 1 April 2024

https://doi.org/10.47723/nrpvbk52

Keywords: Primary thyroid lymphoma, NHL of thyroid, tracheal invasion

ABSTRACT

Primary Non-Hodgkin's Lymphoma (NHL) of the thyroid gland is a rare disease comprising of 2.5 - 5% of all thyroid malignancies. It has the female preponderance, found mostly in 6th or 7th decade. The most common sub type is diffuse large B cell lymphoma (DLBCL). Ultrasonography of the neck and thyroid gland along with Fine Needle Aspiration Cytology (FNAC) are essential tools for early diagnosis of this disease. The main treatment of choice is chemotherapy following this radiotherapy. The prognosis of the patients mainly depended upon the size and grade of tumor, stage of disease and patient's age. In this study, we report a case of a 73-year-old women rapidly growing neck mass deteriorated quickly within 10 days. The thyroid gland invades and compresses the trachea led to succumb early.

Introduction

The non-Hodgkin's lymphoma (NHL) involving thyroid is a very rare entity. The malignant lymphomas occur only 2% to 8% among all the malignancies of thyroid and around 2-3% cases are NHL (1-5). It is usually affecting the older age group mostly over 6th decade with female predilection. Female are more prone that of male (3:1). Most of these Lymphomas are B Cell type of NHL in comparison to T cell Lymphoma, which is rare. Most of the cases are euthyroid in nature (4,6). NHL has the feature of clinical and histological polymorphisms, which leads to late diagnosis hence worsening the disease prognosis (7).

Case Report

A 76-year-old female was presented with rapidly increasing thyroid gland in the last 10 days. It appeared suddenly and size was increased progressively, associated with mild pain. Subsequently after 4 days she developed breathlessness on exertion which was gradually progressed to breathlessness on rest. Breathlessness was associated with cough and scanty mucoid expectoration. Before one day of

admission, she felt discomfort in chest on left side anteriorly with dull, continuous, non-radiating pain by nature and aggravated on exertion. There was no history of fever, dysphagia, hemoptysis or palpitation. Only she had significant past history of COPD, for which she had taken treatment for off and on. She was conscious and oriented to time, place and person. She presented with pulse rate-84/min, BP-140/80, respiratory rate-20/min and temperature-980F. On physical examination there was a large mass over anterior part of neck, on palpation which was firm, smooth, immobile and non-tender without any thrill. She had kyphosis with barrel shaped chest. Trachea was not visible. Apex beat was also neither visible nor palpable. Chest movements were restricted bilaterally(B/L) with diminished vocal fremitus and less than 2cm chest expansion. Hyper resonant percussion note was detected all over the chest with obliterated liver dullness and cardiac dullness. There were vesicular breath sound and diminished vocal resonance B/L with few rhonchi and crepitation over infra scapular area. Heart sounds S1 and S2 were muffled. Other systems were seemed to be intact. With this finding our provisional diagnosis was COPD with acute exacerbation, acute coronary syndrome and thyroid mass.

Significant Laboratory investigations were found to be leukocytosis with neutrophilic predominance. Thyroid profile was within the normal limit FT3-2.92 (N-2.5-3.9pg/ml), FT4-0.99(N-0.61-1.12ng/dl), TSH-1.3(N-0.34-5.00µIU/ml). Serum cholesterol was high up to 215 mg/dl. X-ray chest showed the usual COPD features. ECG was done at that time showed heart rate of 110/mm with T wave inversion in L1 and aVL. Also, the Trop-I was positive at that time. The patient was resuscitated with routine emergency treatment. The patient was stable over next 5 days of treatment. In the meantime, Echocardiography of heart revealed normal LV function and 60% ejection fraction. Ultrasound of abdomen were done, suggested no abnormality. Other important investigations like Ultrasonography of neck, FNAC of thyroid and High-Resolution Computer Tomography (HRCT) of thorax were being performed. Ultrasonography of neck suggested enlarged hypoechoic multiple strands in right lobe and isthmus of thyroid while color Doppler of left lobe of thyroid showed a hypoechoic lesion. There were also few enlarged lymph nodes along with loss of fatty helium observed through the scan. FNAC of thyroid suggested high cellularity with immature large lymphoid cells in dispersed pattern mixed with few mature lymphocytes and plasma cells. Cells were highly fragile having large irregular nuclei with nuclear cleaving, 1-3 conspicuous nucleoli and moderate cytoplasm. Impression of FNAC was non-Hodgkin's lymphoma of thyroid gland (DLBCL centroblastic type). Then further it was planned to do, biopsy of thyroid gland and immunohistochemical markers but before it could be done, on 6th day, the patient was suddenly detoriated with dyspnea worsening by progression of time. HRCT thorax revealed the thyroid mass invaded into trachea, multiple mediastinal lymphadenopathies, fibrosis of lower lobe of right lung, and traction bronchiectasis. Tracheostomy and intubation could not be possible due to massive obstruction as invasion of thyroid mass into the trachea at that time, as a result she succumbed on that day. The final diagnosis was done- Aggressive primary thyroid non hodgking's lymphoma (diffuse large b-cell centroblastic type lymphoma) with tracheal invasion.

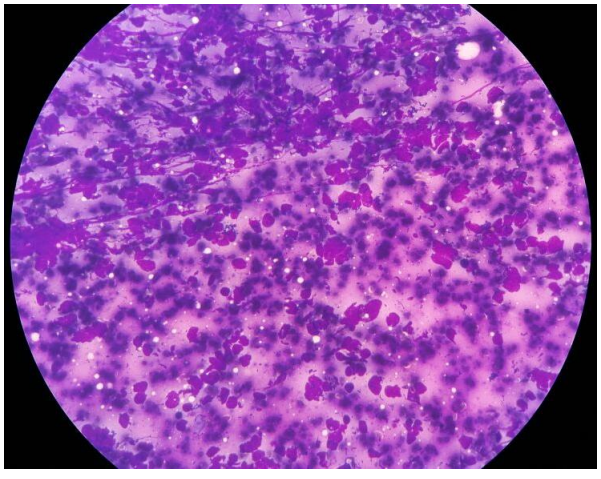

Figure 1: Premature lymphocytes

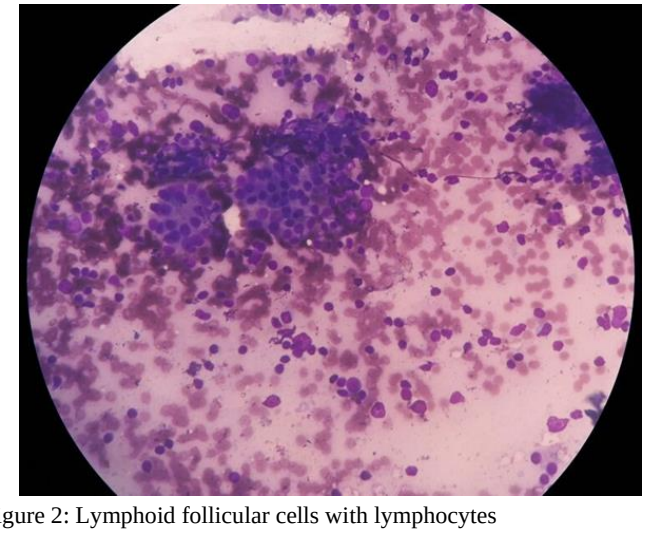

Figure 2: Lymphoid follicular cells with lymphocytes

Figure 3: Thyroid Gland (Front left and Lateral right)

Discussion

Primary Thyroid Lymphomas (PTL) is the lymphomas of thyroid gland only or it may involve adjacent lymph nodes along with the thyroid gland without distance metastasis. NHL of thyroid is a rare condition, which can be arising from the parenchyma of thyroid (8). The occurrence is less than 5% of all thyroid malignancy and within a range of 2.5% of all lymphomas (9). It primarily affects older individuals and is more common in women than in males (2.5 – 8.4:1)

(10). The enlargement of thyroid can be often rapid, which leads to tracheal or laryngeal compression seen in our case.

Mostly the patients are diagnosed with a cervical mass having rapid and painless growth, which coincides to our study. Some of the patients (30%) can be diagnosed by the signs and symptoms like dyspnea, coughing, choking dysphagia, and hoarseness of voice due to compression of adjoining structures (11,12). Other symptoms like fever, weight loss and night sweating are less common (13). Most of the neoplasms are B cell lymphoma, where T cell is very less. DLBCL is the most common sub types found in our case, which has the occurrence rate of 70% (14). DLBCL of thyroid at a stage of localized area is usually having a better prognosis, but mostly heterogeneous hence leads to poor prognosis (3).

Presently Fine Needle Aspiration Cytology (FNAC) is essential for such diagnosis. The positive diagnosis through this method ranges from 25-90%. Mostly there are features of plenty typical lymphoid cells with pleomorphism showing prominent nucleoli, presence of lymphoglandular bodies and absence of cellular cohesion (14). It can be used for accurate diagnosis of thyroid gland NHL. Open biopsy should be performed where the diagnosis couldn't be decided by FNAC alone or kept reserved where this facility is not available. (15) In our case we could not able to do this test due to shortage of time and severity as the patient was suddenly detoriated. This lesion is so aggressive, it invades the trachea with in few days. (16) Radiological investigation through ultrasonography, these can be distinguished from thyroid parenchyma by presence of hypoechoic mass (8). The above features are figured in our study.

The therapeutic approach in this type is controversial due to rare entity. Multidisciplinary approach like Surgery, Chemotherapy and radiotherapy can be modalities of treatment (14). Radiotherapy can be applied for local control of disease which is more sensitive, whereas chemotherapy aims at controlling hidden or disseminated disease, hence improving the longer out come through conventional Cyclophosphamide, Doxorubicin, Vincristine and Prednisolone (CHOP) regimen (13,14). Radiation is commonly given after chemotherapy of 3-6 courses. Recently Rituximab has been introduced, which is being effective in DLBCL elderly patient (17). But the role of surgery of the mass is controversial (18). The prognosis depends upon the age of patient, grade of tumor, and stage of disease (3,4,8). MALT Lymphoma has a better prognosis than that of DLBCL (3). Similarly, tumors seen in children and young adult have a good prognosis (8).

Conclusion

Primary lymphoma of thyroid is rare entity. We are describing a rare case of PTL, where our report is stressed the requisite for clinical understanding such a baffled case. In case of thyroid enlargement, there are difficulties in diagnosis to confirm a case of primary thyroid NHL resulting starting the treatment late. Due to rare incidence of such disease, each case should be evaluated and treated separately. Early diagnosis and aggressive treatment may save the life of the patient.

Funding

This research did not receive any specific fund.

Conflict of Interest

Authors declare no conflict of interest.

Ethical Approval: Not required as it is a case report but patient consent was approved for publication of this study

ORCID

Jayshree Swain 0000-0001-5013-2894

References

[1] Hoshino C, Yamabe A, Sekikawa Y, Ishihara K, Ikeda H, Narita M, Inoue M. Primary Thyroid Lymphoma as A Manifestation of Rapidly Growing Thyroid Causing Progressive Respiratory Distress. Journal of Medical Cases. 2012 Jan 5;3(1):15-9. https://doi.org/10.4021/jmc387w

[2] Kumar R, Khosla D, Kumar N, Ghoshal S, Bera A, Das A, Sharma SC. Survival and failure outcomes in primary thyroid lymphomas: a single centre experience of combined modality approach. Journal of thyroid research. 2013 May;270(6):1897-901. https://doi.org/10.1155/2013/269034

[3] Hedhili F, Kedous S, Jbali S, Attia Z, Dhambri S, Touati S, Chebbi AG, El May A, Gritli S. Primary thyroid lymphoma: Case report and review of the literature. Egyptian Journal of Ear, Nose, Throat and Allied Sciences. 2015 Jul 1;16(2):171-3. https://doi.org/10.1016/j.amsu.2016.12.023

[4] Monika Bobde, Meera Mahajan, Smita Mulay, Bhale C.P. :Primary Thyroid Lymphoma : A Rare Case Report : International Journal of Current Medical And Applied Sciences, 2016, October, 12(2), 112-114.

[5] Colovic M, Matic S, Kryeziu E, Tomin D, Colovic N, Dushan H, Atkinson E. Outcomes of primary thyroid non-Hodgkin's lymphoma. Medical Oncology. 2007 Jun 1;24(2):203. https://doi.org/10.1007/BF02698041

[6] CANDA MŞ, TUNA EB, GÖRÜCÜ G, KOÇDOR MA. Primary lymphoma of thyroid: A case report. Turkish Journal of Cancer. 2001;31(1):39-43. https://doi.org/10.1016/j.amsu.2016.12.023

[7] Mahfoudhi M, Khammassi K, Gorsane I, El Euch M, Turki S, Salah MB, Abdallah TB. Primary Thyroid Non-Hodgkin's Lymphoma. Open Journal of Pathology. 2015 Aug 17;5(4):114-6. https://doi.org/10.4236/ojpathology.2015.54015

[8] Roshed MM, Ahsan SM, Rashed KA. Non-Hodgkin's Lymphoma in Thyroid Gland. Journal of Medicine. 2013 Apr 15;14(1):83-4. https://doi.org/10.3329/jom.v14i1.14584

[9] Allaoui M, Benchafai I, Mahtat EM, Regragui S, Boudhas A, Azzakhmam M, Boukhechba M, Al Bouzidi A, Oukabli M. Primary Burkitt lymphoma of the thyroid gland: case report of an exceptional type of thyroid neoplasm and review of the literature. BMC clinical pathology. 2016 Dec;16(1):1-6. https://doi.org/10.1186/s12907-016-0028-6

[10] 1. Sternberg SS, Mills SE, Carter D. Sternberg's diagnostic surgical pathology. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins; 2010.

[11] Rosai J, Ackerman LV, Goldblum JR, Lamps LW, McKenney JK, Myers JL. Rosai and Ackerman's Surgical Pathology. Philadelphia: Elsevier; 2018.

[12] Derringer GA, Thompson LD, Frommelt RA, Bijwaard KE, Heffess CS, Abbondanzo SL. Malignant lymphoma of the thyroid gland: a clinicopathologic study of 108 cases. The American journal of surgical pathology. 2000 May 1;24(5):623-39. https://doi.org/10.1097/00000478-200005000-00001

[13] Katna R, Shet T, Sengar M, Menon H, Laskar S, Prabhash K, D'Cruz A, Nair R. Clinicopathologic study and outcome analysis of thyroid lymphomas: experience from a tertiary cancer center. Head & neck. 2013 Feb;35(2):165-71.

[14] https://doi.org/10.1002/hed.22928
Peixoto R, Pinto JC, Soares V, Koch P, Gomes AT. Primary thyroid lymphoma: a case report and review of the literature. Annals of Medicine and Surgery. 2017 Jan 1;13:29-33. https://doi.org/10.1016%2Fj.amsu.2016.12.023

[15] Wirtzfeld DA Winston JS, Hicks WL Jr, Loree TR: Clinical presentation and treatment of non-Hodgkin's lymphoma of the thyroid gland: Ann Surg Oncol. 2001 May;8(4):338-41. https://doi.org/10.1007/s10434-001-0338-4

[16] Allen Y. Wang, Jeffrey T. Wang, Yi Shen and Brett Levin: Case Report: Relapse of Non-Hodgkin's Lymphoma Involving the Trachea: Acute Subglottic Obstruction: Case Reports in Otolaryngology Volume 2014 (2014), Article ID 230682,1-4. https://doi.org/10.1155/2014/230682

[17] Jonak C, Troch M, Müllauer L, Niederle B, Hoffmann M, Raderer M. Rituximab plus dose–reduced cyclophosphamide, mitoxantrone, vincristine, and prednisolone are effective in elderly patients with diffuse large B-cell lymphoma of the thyroid. Thyroid. 2010 Apr 1;20(4):425-7. https://doi.org/10.1089/thy.2009.0440

[18] Chen C, Tibbetts KM, Tassler AB, Schiff BA. Tracheal invasion and perforation from advanced primary diffuse large B-cell thyroid lymphoma: a case report and literature review. Am J Otolaryngol, 2013 Sep-Oct; 34(5): 559-62. https://doi.org/10.1016/j.amjoto.2013.04.004

To cite this article: Patnaik M, Patnaik G, Swain J, Kanwar J. Rapidly Progressing Non-Hodgkin's Lymphoma of Thyroid Gland. AL-Kindy College Medical Journal, 2024;20(1)74-77. https://doi.org/10.47723/nrpvbk52