International Journal of Medical Case Reports
Pankaj Sharma et al. Int J Med Case Reports. 2020 Jul 3 (3) 16-20
www.ijomcr.net ISSN : 2455-0574

Case Report

Thyroid lymphoma: A case report.

Pankaj Sharma[1], Rahul Kumar[2], Tripti Prajapati[3], Sakshi Garg[4]

[1]Department of Radiodiagnosis, All India Institute of Medical Sciences, Rishikesh.
[2,3]Department of Surgical oncology, All India Institute of Medical Sciences, Rishikesh.
[4]Department of Pathology, All India Institute of Medical Sciences, Rishikesh.

Corresponding Author: Tripti Prajapati.

Abstract:

Thyroid lymphoma constitutes 0.5% to 5.0% of all thyroid malignancies and is one of the uncommon variety of extra nodal diffuse large B-cell Lymphoma (DLBCL). Uncommon presentation and lack of pathognomic cytological features can lead to delay in diagnosis. Radiologist plays a critical role in providing early diagnosis and guiding further diagnostic modality like core cut biopsy and immunohistochemistry. Here, we report a case of thyroid swelling in a 50-year-old lady, which was initially misdiagnosed as anaplastic thyroid carcinoma and was later diagnosed as thyroid lymphoma based on radiological and pathological features.

Keywords: - Thyroid lymphoma, malignancy, CECT, Immunohistochemistry.

INTRODUCTION:

Thyroid lymphoma is a rare disease that continues to produce diagnostic challenges to clinicians and radiologist worldwide. Initial radiological presentation of the disease is diverse and has shared features with other pathologies of the thyroid gland. Most thyroid lymphomas are of B-cell origin and diffuse large B cell lymphoma is the most common type.[1] A high index of clinical and radiological suspicion is required for guiding management.

CASE REPORT:

A 50-year-old lady presented to our institute with neck swelling for the last 4 years, which had increased in size from the last 3 months. She also had complaints of grade IV dysphagia and breathing difficulty for the last 4 months. She was on thyroxine supplementation because of hypothyroidism for 4 years. She had undergone evaluation at another centre and her initial aspiration cytological evaluation was suggestive of papillary carcinoma thyroid. She underwent CECT neck and thorax at our department, and it revealed a large multi-lobulated heterogeneously enhancing mass lesion, measuring 7 x 8.4 x 6 cm, involving both lobes and isthmus of thyroid [Figure 1].

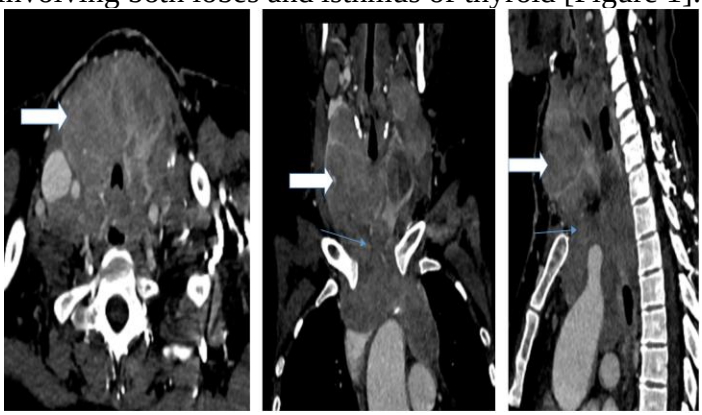

Figure 1: Axial contrast enhanced CT neck with coronal and sagittal reformation in venous phase demonstrates heterogeneously enhancing lesion (white arrow) involving both lobes and isthmus, which shows indistinct fat planes with mediastinal lymphadenopathy (blue arrow) in coronal and sagittal planes.

The lesion was causing compression of the trachea with extension into the tracheoesophageal groove. It was abutting and displacing bilateral internal carotid artery and right internal jugular vein. There was

non-visualization of both internal jugular veins. Inferiorly, the lesion was showing retrosternal extension with ill-defined fat planes with conglomerated mediastinal lymphadenopathy. Multiple enlarged conglomerated necrotic lymph nodes at bilateral level II, III and IV. The thoracic scan revealed multiple enlarged conglomerated lymph nodes at the bilateral upper and lower paratracheal, subcarinal, pre-vascular and aortopulmonary window, completely encasing the great mediastinal vessels, trachea and oesophagus [Figure 2].

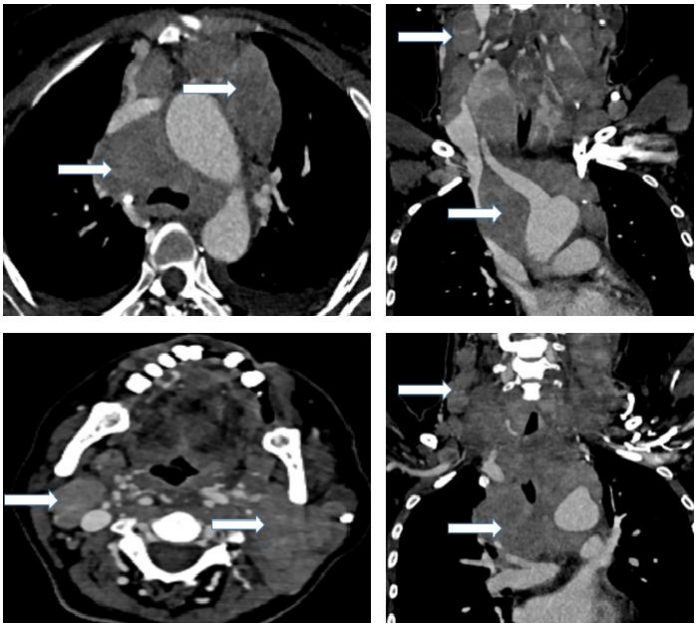

Figure 2: Axial contrast enhanced CT neck and upper thorax with coronal reformation in venous phase demonstrates bulky conglomerated cervical and mediastinal lymph nodes (white arrows) which insinuates between mediastinal great vessels.

Based on the above findings, a probable diagnosis of lymphoma with secondary involvement of thyroid was considered; an abdominal scan was done for the complete staging of the disease, which showed no significant abnormality.

A guided biopsy from the lesion suggested the diagnosis of Non-Hodgkin's lymphoma. On immune-histochemistry PanCK was positive in thyroid follicles [Figure 3], and LCA, CD-20and CD-3 were positive in tumour cells suggestive of Non-Hodgkin's Lymphoma-B cell type [Figure 4 and 5]. Her bone marrow biopsy and aspiration showed hypocellular marrow with no abnormal cells.

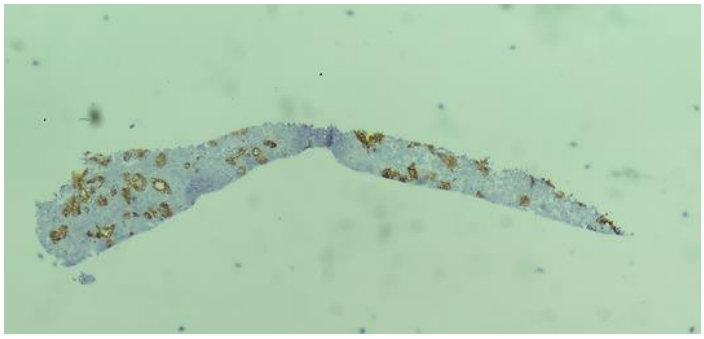

Figure 3: Photomicrograph shows Pan CK positivity in only thyroid follicles. Tumor cells are negative. IHC PAN CK, 10x.

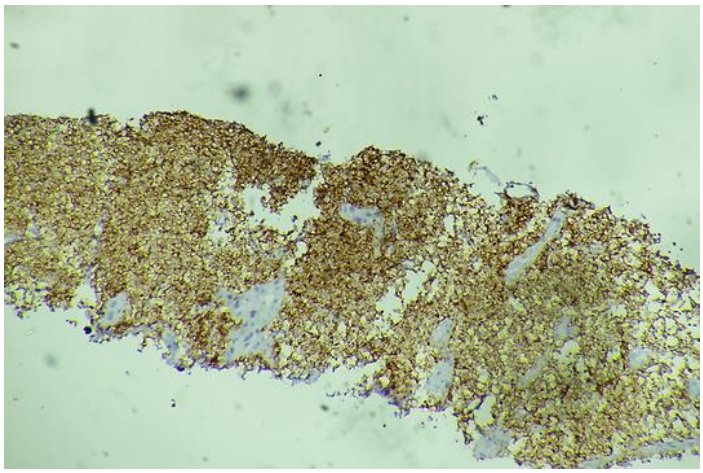

Figure 4. Photomicrograph shows tumor cells are diffusely positive for LCA. IHC LCA 20x.

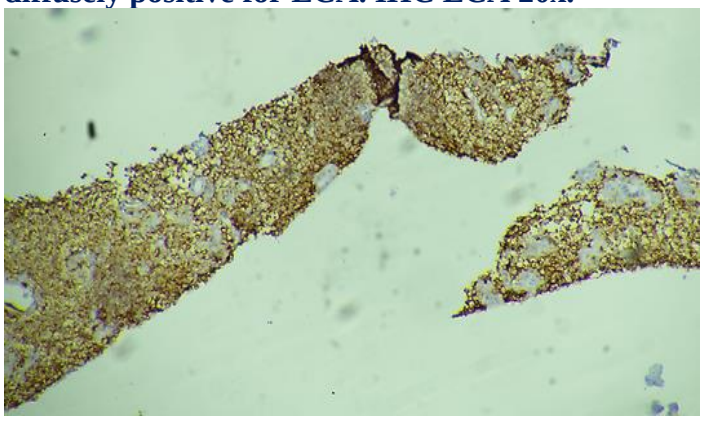

Figure 5. Photomicrograph shows tumor cells are diffusely strong positive for CD 20. IHC CD20, 10x.

The patient was planned for systemic chemotherapy and was referred to a medical oncologist for further treatment.

DISCUSSION:

DLBCL is commonest non-Hodgkin's lymphoma subtype and presents as nodal lesions in majority of cases. Extra nodal disease is seen in 25 to 30% of cases and is commonly seen at GI sites.[2] Thyroid involvement from an extra nodal primary or thyroid itself being the primary site is an uncommon presentation. It accounts for 0.5 to 5.0 % of all thyroid malignancies. [3] Conventionally staging is done as per the Ann-Arbor system. [4] Disease exclusively limited to thyroid without any regional nodal involvement (IIE) is labelled IE. Stage IIIE implies when disease has spread to both sides of diaphragm and stage IVE applies to disseminated disease or multi organ involvement. In our patient considering the thyroid lesion, neck and mediastinal nodes, stage assigned was IIE.

Thyroid lymphoma is a rare malignancy and accounts for 0.5% to 5% of all thyroid malignancies. [3] Most of them are non-Hodgkin's lymphomas and diffuse large B cell lymphoma is the commonest subtype. In our patient, histopathology came out to be DLBCL Non-Hodgkin's lymphoma

Thyroid lymphoma is more prevalent in females and the mean age of presentation is 67 years. Painless progressive cervical mass is the most common presentation.(5)Compressive symptoms are seen in around one-third of the patients.[6] In our patient demographic and clinical presentation matches up.

Diagnosis:

Thyroid lymphoma has a faster progression rate as compared to well-differentiated malignancies of the thyroid gland and when it becomes locally aggressive leading to compression of surrounding structures, it becomes very difficult to differentiate it from dreadful anaplastic carcinoma of the thyroid gland. Ultrasonography is usually the first imaging modality and is nowadays considered an extension of physical examination. It is always critical to correctly identify the limited clues that these lesions offer and to advise the clinician about core cut biopsy.

Thyroid lymphoma typically shows one of the three patterns, they can either be nodular, diffuse or mixed. Posterior acoustic enhancement is one of the characteristic sonological features that help to distinguish lymphoma from other thyroid pathology. [7] When presenting as solitary mass, homogeneous appearance due to lack of calcification, necrosis and cystic degeneration helps to differentiate it from anaplastic carcinoma of the thyroid.[8] Diffuse lymphoma has a heterogeneously hypoechoic appearance of the parenchyma with the presence of septated structures within. [9]

A contrast-enhanced CT scan of neck and thorax is helpful in the evaluation of the extent of disease and is the staging modality of choice.[10] Thyroid lymphoma can appear as a solitary nodule or multiple nodules with homogeneous isodensity to muscle and this feature is often misinterpreted as an invasive lesion, leading to misdiagnosis as anaplastic carcinoma thyroid.[11] It is very critical to differentiate between the two probabilities as an approach to management differs drastically. Calcification and necrosis are commonly seen in Anaplastic carcinoma and is rarely seen in lymphoma.[12,13] Imaging features of lymphadenopathy also help in differentiation of two entities. Lymph nodes in lymphoma show homogeneous density with hypo-enhancement on post-contrast scans, while lymph nodes in anaplastic carcinoma show heterogeneous enhancement with necrosis and calcification.

Cytological evaluation is commonly used and lack of characteristic features presents a diagnostic challenge. Sensitivity and specificity continue to increase with newer adjuncts such as flow cytometry, immunohistochemistry (IHC) and Polymerase chain reaction-based assays. Thyroid lymphoma are positive for leucocyte common antigen, MS4A1 (CD20), and λ light chain and negative for cytokeratins on IHC evaluation.[14] Core biopsy allows histological evaluation and facilitates the distinction between Hashimoto's thyroiditis, thyroid lymphoma and anaplastic carcinoma.

In our case, the patient presented with a swelling of long duration that had undergone rapid progression over the last few months and she was having compressive symptoms. There was a high clinical suspicion of anaplastic transformation in a long-standing malignancy of thyroid. On characteristic radiological features imaging diagnosis of secondary thyroid lymphoma was made. Histological and immunohistochemical evaluation came out to be Non-

Hodgkin's lymphoma, DLBCL subtype. However, pathologists were unable to comment on whether the thyroid involvement is primary or secondary. It was only on the basis of radiological findings the diagnosis of secondary thyroid lymphoma was given.

Treatment:

Lymphoma responds brilliantly to systemic chemotherapy which is the standard of care for the treatment. Combined modality treatment with chemotherapy and radiotherapy has also been discussed in the literature.

CONCLUSION

Thyroid lymphoma is a rare entity and in absence of well-defined diagnostic imaging and cytological features, it can sometimes be misdiagnosed as other pathological counterparts especially anaplastic carcinoma of the thyroid, particularly when contiguous mediastinal and abdominal lymphadenopathy is not very obvious. Lack of calcification and necrosis can be used as differentiating features. A high index of suspicion is required for the diagnosis of thyroid lymphoma which should always be considered a differential diagnosis while evaluating a locally aggressive thyroid lesion with homogeneous attenuation. Contiguous neck nodal lesion with mediastinal / abdominal extension help in predicting the secondary thyroid lymphoma.

Conflict of Interest: none

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CITE THIS ARTICLE:

Pankaj Sharma, Rahul Kumar, Tripti Prajapati, Sakshi Garg Thyroid Lymphoma: A case Report. . Int J Med Case Reports. 2020 Jul 3 (3) 16-20