



SYNCHRONOUS MALIGNANCY OF PAPILLARY THYROID CARCINOMA AND HODGKINS LYMPHOMA IN A YOUNG PATIENT

Oncology

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ABSTRACT

Here, we report the case of a 35-year-old man who presented with fever and swelling on right side of neck. Radiological examination pointed towards a diagnosis of cancer for which total thyroidectomy along with neck dissection was done. Histopathology findings confirmed papillary thyroid carcinoma and incidental finding of Hodgkin's lymphoma in lymph nodes. The patient was started on chemotherapy (ABVD) and his symptoms started to improve. The second primary malignancy is a second malignant neoplasm occurring in a patient with known cancer. This case highlights the uncommon phenomenon of the double primary malignancy of PTC and HL and the medical challenges involved in management of such cases.

KEYWORDS

INTRODUCTION

Double primary malignancies (DPM) in young patients are rare, although their incidence has been increasing in recent years. In patients with DPM, 2 different types of primary malignant tumors occur at the same time or successively. DPM can be metachronous or synchronous, depending on the time interval between the 2 tumors. Both Hodgkin lymphoma and thyroid cancer are seen frequently individually, lymphoma of the thyroid gland is also commonly seen found, but their joint presentation is rare.

Secondary thyroid malignancies are well known to be associated with history of chemotherapy and radiotherapy for Hodgkin lymphoma (HL) patients. Nevertheless, the synchronous presentation of these 2 types of malignancies in a young patient is exceptional. The clinical characteristics and treatment outcomes of synchronous lymphoma and thyroid cancer remain unclear.¹

CASE

We report the case of a male patient in his mid 40s, diagnosed with hypothyroidism in 2012, who presented with complaints of fever and swelling on right side of neck since 5 months. On USG, right lobe of thyroid showed a well-defined, irregular calcified lesion measuring 9x8 mm (hypoechoic, as tall as wide, shows microcalcification and minimal internal vascularity), labelled Thyroid Imaging Reporting and Data Systems (TIRADS)-5, suggestive of CA Thyroid; additionally multiple enlarged cervical lymph nodes of varying sizes and a 17 mm left supraclavicular lymph node was found. CECT showed no enhancing mass lesion in thyroid gland but multiple enlarged cervical lymph nodes in high mediastinum, bilateral supraclavicular regions and right level 2 region were seen. FNAC of right cervical lymph nodes indicated a metastatic papillary thyroid carcinoma.

Patient underwent Total Thyroidectomy with Right Modified radical neck dissection (MRND)-II with Left Jugular Node Dissection and Superior Mediastinal Node excision. Histopathology showed papillary thyroid carcinoma (classic variant), staging P T_{1a}N_{1b}M₀. Central compartment node measured 2.5 x 2.5 x 1.5 cm with no PTC features. 5/16 right cervical lymph nodes were positive for PTC deposits.

Central compartment node and right cervical lymph nodes were suggestive of Hodgkin's Lymphoma for which immunohistochemistry was advised which confirmed a diagnosis of Classical Hodgkin's Lymphoma (CD30+, CD15+, PAX-5+ and CD45, Cd20-).

PET-CT revealed multiple FDG avid discrete and coalescent bilateral supraclavicular, mediastinal and abdominal lymph nodes, few with mass formation in the mediastinal region (lymphomatous involvement above and below the diaphragm) suggestive of Ann Arbor stage 3B. Patient was then given 2 cycles of ABVD, following which an interim PET scan was done which showed complete metabolic response. The patient was then given 4 more cycles of ABVD and achieved complete remission.

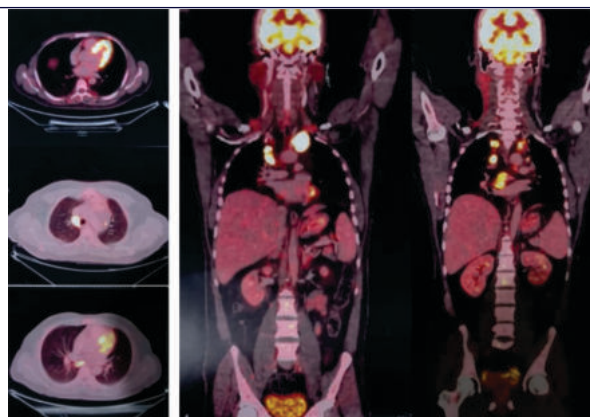


Image 1 And 2 - Intensely Fdg Avid Mediastinal Lymph Nodes

DISCUSSION

Double primary malignancies are rare with a reported incidence of 0.73% to 11.7% in a retrospective cohort of about 1.1 million cancer patients. A higher prevalence has been observed in the elderly as compared to young patients, in which it is quite rare.²

The pathophysiology behind the occurrence of multiple primary malignancies has been theorized to be common carcinogen-induced multiple cancers in an exposed epithelial surface, called "field cancerization" as seen in head-neck tumors, as a late side effect of treatment used to treat the first tumor and a genetic predisposition to neoplasia. Other possible causative factors include persistent carcinogen exposure from environment, increased use of organ transplant, progressive ozone depletion and effects of ionizing radiation, and the increasing use of newer treatment modalities such as hormonal manipulation, genetic manipulation, target therapies, and immunomodulators.³

The use of ultrasonography to diagnose thyroid cancer has sensitivity of 97.4% and specificity of 33.3%.⁴ In our patient, USG of right lobe of thyroid showed a well-defined, irregular calcified lesion measuring 9x8 mm (hypoechoic, as tall as wide, shows microcalcification and minimal internal vascularity), labelled Thyroid Imaging Reporting and Data Systems (TIRADS)-5, suggestive of CA Thyroid; additionally multiple enlarged cervical lymph nodes of varying sizes and a 17 mm left supraclavicular lymph node was found.

PET-CT is of great value in the early diagnosis of double primary malignancies.⁵ In our patient lymph nodes suggestive of Hodgkin's lymphoma were found during surgery for Papillary cancer of thyroid. IHC was done for the same which confirmed a diagnosis of Hodgkin's lymphoma and then initial PET-CT was done to stage the cancer. PET-CT findings were suggestive of multiple FDG avid discrete and coalescent bilateral supraclavicular, mediastinal and abdominal lymph

nodes, few with mass formation in the mediastinal region (lymphomatous involvement above and below the diaphragm).

The treatment of choice for differentiated thyroid cancers is surgery, whenever possible, followed by radioiodine (I^{131}) in selected patients and thyrotropin suppression in most patients, according to the National Comprehensive Cancer Network (NCCN) guidelines. Surgeries include total thyroidectomy, near-total thyroidectomy, lobectomy, etc. according to different patient qualification criteria. NCCN and ATA (American Thyroid Association) recommend that therapeutic neck dissection for patients with clinically involved central or lateral neck lymph nodes should accompany total thyroidectomy to provide clearance of disease from the central neck. Prophylactic central-compartment neck dissection (level VI) may be considered in patients with clinically uninvolved central neck lymph nodes, especially for advanced primary tumor.

Treatment of Hodgkin lymphoma is tailored to disease stage, comorbidities and performance status of patient. Hodgkin lymphoma is considered to be a curable malignancy, but therapies for this disease can have significant long-term toxicity. General treatment modalities include chemotherapy, radiation therapy and hematopoietic stem cell transplantation. ABVD, MOPP, A+AVD, Stanford V, BEACOPP are some induction chemotherapy regimens for HL.

There is no standardized treatment for DPM currently because of low occurrence seen. Our patient underwent Total Thyroidectomy with Right Modified radical neck dissection (MRND)-II with Left Jugular Node Dissection and Superior Mediastinal Node excision for the lesion in right lobe of thyroid and was then given 2 cycles of ABVD for HL. An interim PET scan done showed complete metabolic response. The patient was then given 4 more cycles of ABVD and achieved complete remission.

CONCLUSION

Synchronous occurrence of papillary carcinoma of thyroid and HL is a rare sighting and requires careful observation, continuous monitoring and elaborate treatment planning.

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