

Cervical Lymphadenopathy Revealing Papillary Thyroid Carcinoma: A Case Report and Review of Literature

H. OUAKRIM¹, M. BEN LAFQIH², S. RAFT³, G. EI MGHARI⁴, N. EI ANSARI⁵

^{1,2,3,4,5}Department of Endocrinology, Diabetes, Metabolic diseases, and Nutrition, Mohammed VI university hospital of Marrakesh, Morocco

Corresponding Author: OUAKRIM Hind

DOI: <https://doi.org/10.52403/ijrr.202308133>

ABSTRACT

Introduction: Cervical lymphadenopathy can be caused by various factors, including infections and malignancies. Papillary thyroid carcinoma (PTC) is a type of thyroid cancer that can lead to metastasis in the cervical neck lymph nodes. Ultrasound is recommended for preoperative lymph node evaluation, and preventive central lymph node dissection is advised for moderate- and high-risk PTC patients. This case study describes a young patient who was diagnosed with PTC through cervical ultrasound and biopsy of the cervical adenopathy.

Case Presentation: A 27-year-old patient with no significant medical history presented with a left jugulo-carotid lymph node of about 1 cm. A cervical ultrasound showed three suspicious lymph nodes with a left thyroid nodule. An excision biopsy of the largest lymph node revealed thyroid tissue with abnormalities suggesting papillary carcinoma with nodal metastasis. A total thyroidectomy was performed with central and homolateral lymph node dissection, revealing an encapsulated papillary carcinoma with nodal metastasis. The patient received radioactive iodine therapy and was placed on L-thyroxine for substitution and suppression. Regular follow-up is assured.

Discussion: Lymphadenopathy can result from regional or systemic disease and may indicate an underlying condition. PTC should be considered in any patient with cervical adenopathy, even if the thyroid is normal in size. The combination of radiology and fine-needle aspiration cytology (FNAC) is essential for diagnosing cervical

masses and their metastatic origin. Total thyroidectomy with ipsilateral and/or contralateral cervical lymph node dissection is the best treatment for lymph nodes revealing PTC, followed by post-surgical radiation therapy. The prognosis remains favorable, although lymph node metastases are a predictor of recurrence.

Conclusion: PTC, which mainly presents as cervical lymphadenopathy, is rare. Early detection and proper management of PTC are crucial for the patient's long-term outcome. With careful monitoring and regular follow-up, patients with PTC can achieve a favorable prognosis and quality of life.

Keywords: Papillary thyroid carcinoma, Cervical lymphadenopathy, fine-needle aspiration cytology, Total thyroidectomy, lymph node dissection, radioactive iodine therapy.

INTRODUCTION

Cervical lymphadenopathy per se is often a diagnostic challenge to medical professionals owing to its varied etiologies malignancies, primary or metastatic, and infections are the main causative factors that should be included in the differential diagnoses of cervical lymphadenopathy [1,18] The lymph node metastases revealing a CPT are not common.

Papillary thyroid carcinoma (PTC) remains the most prevalent form of thyroid malignancy. It

represents more than 70% to 90% of thyroid tumors [4]. Although the prognosis is

usually good, it often causes cervical neck lymph node metastasis [4]. that is related to local recurrence and mortality which needs appropriate preoperative screening of potential risk of lymph node metastasis for complete or partial thyroidectomy and lymph node dissection [3].

Currently, ultrasound is recommended as the main means of preoperative lymph node evaluation. Surgery is the preferred treatment for PTC with cervical lymph node metastasis. At present, the American Thyroid Association (ATA) recommends that preventive central lymph node dissection should be performed in the treatment of primary tumors for patients with moderate-and high-risk PTC [6].

We report a case of PTC revealed by a cervical adenopathy in a young patient. The diagnosis was made with cervical echography coupled with biopsy of the adenopathy and anatomopathological study.

CASE PRESENTATION

B.M, a 27-year-old patient with no significant medical history, who has had dysphagia for 3 months, for which he consulted a doctor. Clinical examination revealed a left jugulo-carotid lymph node of about 1cm. A complementary cervical ultrasound was performed, which showed three suspicious-looking left jugulo-carotid lymph nodes (figure 1) with heterogeneous appearance, without visible hilum, measuring 2.38 x 1cm, 1.5 x 0.7cm, and 1.48 x 0.53cm, respectively, along with a left thyroid nodule (figure 2) with regular

contours and heterogeneous echostructure measuring 2.2 x 1.9 x 1.8cm classified as Eutirad 3. The patient underwent excision biopsy of the largest lymph node, which on histopathological examination revealed thyroid tissue with discrete abnormalities suggestive of papillary carcinoma with vesicular architecture: cylindro-cubical cells with coffee bean-shaped plicated nucleus, mixed fibrosclerotic stroma, infiltration of the capsule without visible vascular emboli, suggestive of probable nodal metastasis. A normal thyroid function test was performed with TSH: 1.56uui/ml. The patient was referred to surgery, and a total thyroidectomy was performed with central and homolateral lymph node dissection. Histopathology revealed an encapsulated papillary carcinoma with vesicular differentiation in the left thyroid lobe without extrathyroidal extension on dystrophic nodular goiter. This tumor focus measured 2.3cm in its largest dimension and was classified as pT2 according to the PTNM 2017. The lymph node dissection revealed metastatic lymph nodes in the central and lateral III and IV regions, consistent with papillary thyroid carcinoma with vesicular differentiation. The patient received an ablative dose of radioactive iodine therapy and was subsequently placed on L-thyroxine for substitution and suppression. Regular follow-up is being conducted at our center, with clinical evaluation, measurement of serum TSH and thyroglobulin levels, and radiological monitoring by cervical ultrasound.

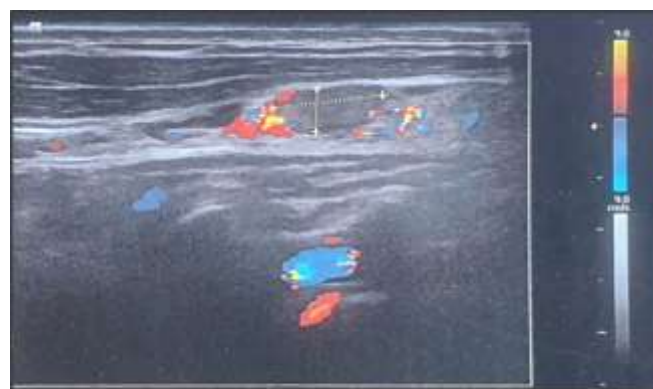


Figure 1: left jugulo-carotid lymph node

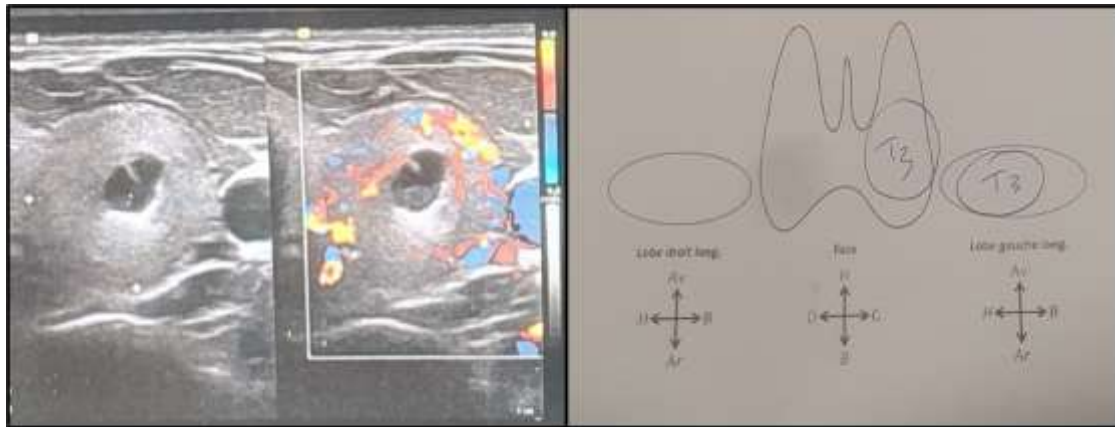


Figure 2: left thyroid nodule

DISCUSSION

Lymphadenopathy refers to enlargement and/or altered consistency of lymph nodes manifesting due to regional or systemic disease and serves as an excellent clue to the underlying disease.

Lymph node metastasis indicative of papillary carcinoma of the thyroid are rare, estimated between 10% and 21% [1].

Papillary thyroid cancer (PTC) always has a favorable prognosis, but with the risk of cervical lymph nodes metastasis and regional recurrence [7]. The most common site of PTC metastasis is cervical lymph nodes, especially the central lymph nodes [9], and nearly 50% of PTC patients present with central lymph nodes metastasis when routine central lymph node dissection is performed [2].

Cervical lymph node metastasis of PTC is believed to disseminate sequentially first to the central neck and only later to the lateral neck [2]. It has been indicated that disease persistence and recurrence and distant metastasis are significantly more frequent in PTC patients with Lateral lymph nodes metastasis (N1b) compared with patients of Central lymph nodes metastasis (N1a) and clinically negative for lymph nodes (cN0) [2].

According to Zhang, an age of less than 40 years, male sex, multifocality and bilaterality of papillary carcinoma of the thyroid are risk factors for ganglion metastasis [1].

Ultrasound is recommended imaging method for screening of lymph node metastasis in patients with papillary thyroid cancer before thyroidectomy and lymph node dissection [3]. Also, ultrasound is superior to computed tomography for screening of benign or malignant nature of thyroid nodules [8,9]. It makes it possible to select the ganglion to be punctured, to guide the FNAC and to look for signs of malignancy at the thyroid level by the TIRADS score, but also at the ganglion level by the existence of microcalcifications or cystisation [5].

However, ultrasound is operator-dependent, and retropharyngeal, retrosternal, and mediastinal regions are difficult to evaluate through ultrasound. And the sensitivity of ultrasound is variable and low for central lymph node metastasis. Routine computed tomography is not recommended by the 2015 American thyroid association management guidelines [6,7] but computed tomography may use an adjunct to neck ultrasound to assess lymph node metastasis in patients with papillary thyroid cancer before thyroidectomy and lymph node dissection.

Thus, the diagnosis of metastasis of papillary carcinoma should always be mentioned in any patient with cervical lymphadenopathy even if the thyroid is of normal size [6,7,14].

The combination of radiology and thyroid fine-needle aspiration cytology (FNAC) was

the key to the diagnosis, of which the confirmation remains histological.

FNAC is an essential examination for determining the cytological nature of a cervical mass, particularly its metastatic origin [6,17].

In the case of lymph nodes revealing papillary carcinoma of the thyroid, the best treatment consists of a total thyroidectomy with ipsilateral and / or contralateral cervical lymph node dissection [6].

Post-surgical radioiodine therapy, which completes the treatment, improves prognosis, and facilitates monitoring. Whole body scintigraphy allows early detection of metastasis. The prognosis remains good even though lymph nodes metastasis is a predictor of recurrence [10].

The diagnosis of papillary thyroid cancer in our patient was revealed by lateral cervical adenopathy, which remains a rare finding circumstance, and the combination of cervical ultrasound and histological study led to a positive diagnosis of papillary thyroid cancer. Postoperative pathological findings revealed central and lateral cervical lymph node metastases, which is in accordance with the literature.

CONCLUSION

Cervical lymphadenopathy is a clinical sign of several etiologies, hence the need for systematic clinical and paraclinical evaluation.

Papillary thyroid carcinoma, which presents primarily as cervical lymphadenopathy, is not common. The nature of these lesions is confirmed by a combination of cervical ultrasound and histological study. If the cervical lymphadenopathy is confirmed to be metastatic thyroid carcinoma, total thyroidectomy and lymph node dissection is the most appropriate approach. When this is followed by a postoperative radionuclide scan and a lifetime dose of thyroxine suppression, the outcome is likely to be successful.

Declaration by Authors

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Swathantra and al. Papillary carcinoma of thyroid with an unusual coexistence of metastatic deposits and tuberculosis in the cervical lymph nodes. Medical Journal of Dr. D.Y. Patil University 7(1):p 59-61, Jan-Feb 2014. | DOI: 10.4103/0975-2870.122784
2. Hengqiang Zhao and al. Risk factors for skip metastasis and lateral lymph node metastasis of papillary thyroid cancer
3. Navika Shukla and al. Association Between Age and Nodal Metastasis in Papillary Thyroid Carcinoma. Otolaryngology– Head and Neck Surgery 1–7_ American Academy of Otolaryngology–Head and Neck Surgery Foundation 2020 DOI: 10.1177/0194599820966995
4. Jameson, J. L. (2008). Disorders of the thyroid gland. Harrison's principles of internal medicine, 2224-2247
5. Diouf MS, Thiam A, Maïga S, Deguenonvo REA, Diop A, et al. (2019) Cystic cervical lymph nodes metastasis revealing a papillary carcinoma of the thyroid gland: A case report. Arch Otolaryngol Rhinol 5(2): 040-042. DOI: <http://doi.org/10.17352/2455-1759.000094>
6. Bryan R. Haugen and 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 Jan 1; 26(1): 1–133. doi: 10.1089/thy.2015.0020
7. Omar Lachhab and al. GANGLIONARY INVASION IN THE THYROID CANCERS. N° Annales des Sciences de la Santé, ISSN: 2421-8936 17, Vol. 1: 40-44
8. Chenxi Liu and al. Risk factor analysis for predicting cervical lymph node metastasis in papillary thyroid carcinoma: a study of 966 patients. BMC Cancer (2019) 19:622. <https://doi.org/10.1186/s12885-019-5835-6>
9. Mehdi Hasnaoui et al. Volumineuse adénopathie cervicale kystique métastatique d'un microcarcinome papillaire de la

- thyroïde. Pan African Medical Journal. 2021;38(400).
10.11604/pamj.2021.38.400.25732
10. Rhizlane El Khiati. Metastase axillaire d'un carcinome papillaire de la thyroïde : à propos d'un cas. Pan African Medical Journal. 2013; 16:12. doi:10.11604/pamj.2013.16.12.1478
 11. Michael E. Kupferman and al. Patterns of Lateral Neck Metastasis in Papillary Thyroid Carcinoma. ARCH OTOLARYNGOL HEAD NECK SURG/VOL 130, JULY 2004
 12. Lu G, Chen L. Cervical lymph node metastases in papillary thyroid cancer: preoperative staging with ultrasound and/or computed tomography. Medicine 2022; 101:9(e28909)
 13. Sunwook Han and al. Occult papillary thyroid carcinoma presenting with cervical neck lymph node metastasis. Korean Journal of Clinical Oncology 2019; 15:132-134 <https://doi.org/10.14216/kjco.19023>
 14. Mohan N, Chia YY, Ng CFJ, Iyer GN, Tan HK, Tan NC, Radhiah S. Lymph Node Metastasis from Papillary Thyroid Carcinoma or Tuberculous Lymphadenitis: A Diagnostic Dilemma. Int J Head Neck Surg 2017;8(3):121-124.
 15. Norman O Machado and al. Papillary Carcinoma of the Thyroid Presenting Primarily as Cervical Lymphadenopathy. SQU Med J, December 2009, Vol. 9, Iss. 3, pp. 328-332, Epub. 19th Dec 2009
 16. Hu Hei and al. Individual prediction of lateral neck metastasis risk in patients with unifocal papillary thyroid carcinoma. European Journal of Surgical Oncology 45 (2019) 1039e1045
 17. Ting-Ting Zhang and al. The association between tumor's location and cervical lymph nodes metastasis in papillary thyroid cancer. Gland Surg 2019;8(5):557-568 | <http://dx.doi.org/10.21037/gs.2019.10.02>
 18. Yuyang Tong and al. Radiogenomic Analysis of Papillary Thyroid Carcinoma for Prediction of Cervical Lymph Node Metastasis: A Preliminary Study. Frontiers in Oncology | www.frontiersin.org 1 June 2021 | Volume 11 | Article 682998
 19. Jianliang Zhang and al. Prediction of Cervical Lymph Nodes Metastasis in Papillary Thyroid Carcinoma (PTC) Using Nodal Staging Score (NSS). Journal of Oncology Volume 2022, Article ID 9351911, 7 pages <https://doi.org/10.1155/2022/9351911>

How to cite this article: H. OUAKRIM, M. BEN LAFQIH, S. RAFI, G. EL MGHARI, N. EL ANSARI. Cervical lymphadenopathy revealing papillary thyroid carcinoma: a case report and review of literature. *International Journal of Research and Review*. 2023; 10(8): 1056-1060. DOI: <https://doi.org/10.52403/ijrr.202308133>
