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Huge posterior triangle lymphadenopathy as a rare sole presentation of papillary thyroid carcinoma

Rozległa limfadenopatia trójkąta szyjnego tylnego jako rzadki, jedyny objaw brodawkowatego raka tarczycy

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Abstract

Papillary thyroid carcinoma is well-known for its low malignant potential with good prognostic outcome. It usually presents as a palpable thyroid mass but scarcely manifests as an isolated cervical lymphadenopathy. A 50-year-old man presented with a huge posterior cervical lymphadenopathy which was suspicious for metastatic papillary thyroid carcinoma on fine needle aspiration cytology. The thyroid gland was clinically not visible or palpable. After computed tomography of the neck, the patient was preceded with total thyroidectomy and right selective lymph node dissection. Histopathological assessment confirmed metastases in the lymph node and papillary thyroid carcinoma in the resected gland. The paper revisits this unfortunate case of huge metastatic posterior triangle papillary thyroid carcinoma, illustrating the surgical outlines and discussing literature review.

Keywords: papillary thyroid carcinoma, lymphadenopathy, neck dissection

Streszczenie

Rak brodawkowaty tarczycy jest znany z niskiej złośliwości oraz dobrych wyników prognostycznych. Zazwyczaj występuje w postaci wyczuwalnej masy w obrębie tarczycy, natomiast bardzo rzadko objawia się jako izolowana limfadenopatia szyjna. Do ośrodka zgłosił się pięćdziesięcioletni mężczyzna z rozległą limfadenopatią szyjną nasuwającą podejrzenie przerzutowego raka brodawkowatego tarczycy w badaniu biopsji aspiracyjnej cienkoigłowej. W badaniu klinicznym tarczycza niewidoczna i niewyczuwalna. Po wykonaniu tomografii komputerowej szyi pacjenta poddano całkowitej tyreoidektomii i selektywnej prawostronnej resekcji węzłów chłonnych. W badaniu histopatologicznym węzła i wyciętego gruczołu tarczowego potwierdzono przerzut do węzła chłonnego oraz rozpoznanie raka brodawkowatego tarczycy. W pracy omówiono przypadek rozległego przerzutowego raka brodawkowatego tarczycy zlokalizowanego w trójkącie szyjnym tylnym, przedstawiając ogólne aspekty chirurgiczne oraz przegląd piśmiennictwa.

Słowa kluczowe: rak brodawkowaty tarczycy, limfadenopatia, usunięcie węzłów chłonnych szyi

INTRODUCTION

Papillary thyroid carcinoma (PTC) presenting as an isolated cervical lymphadenopathy is not uncommon. Up to date, it may account for less than a quarter of total cases. However, it rarely exists in the absence of primary foci in the thyroid gland itself⁽¹⁾. The majority of the cases are found in mid-jugular (level III) and

low-jugular (level IV) chains with an incidence of 51% and 33%, respectively⁽²⁾. Nevertheless, only 1.7% of cases occur in the posterior cervical groups (level V) showing its remarkable rarity⁽²⁾. Apart from cervical lymphadenopathy, PTC can infrequently be discovered with recurrent laryngeal nerve palsy, parapharyngeal space masses and isolated male breast swelling, hence posing a diagnostic curiosity^(3,4).

CASE SUMMARY

A 50-year-old man presented with 2-year-history of right neck swelling, which was progressively increasing in size over the span of one year (Fig. 1). He otherwise did not complain of any dysphagia, dyspnoea, hoarseness, haematemesis or stridor. Upon examination, he was noted to have a firm, hard, well-defined mass located at the posterior edge of the sternocleidomastoid muscle, extending below the clavicle and measuring 10 × 15 cm. The thyroid gland was not palpable and the examination further revealed palpable level II, III, IV, and V cervical lymph nodes. Fine needle aspiration cytology (FNAC) of the nodes showed cohesive papillary clusters of neoplastic epithelial cells and overlapping nuclei, which were round or oval with pale, powdery chromatin, small nucleoli and nuclear grooving; suggestive of metastatic PTC.

Contrast-enhanced computed tomography (CT) of the neck revealed two lobulated enhancing soft tissue masses with a non-enhancing area within in keeping with necrosis measuring 7.4 × 7.9 cm, displacing the right sternocleidomastoid muscle and the right trapezius laterally (Fig. 2). The right internal jugular vein was compressed but patent. Also, a right thyroid nodule with calcification was noted. An accompanying ultrasound showed a well-defined solid lesion in the right lobe, measuring 0.6 × 0.7 cm. There were no significant abnormalities in basic blood parameters, such as full blood count, electrolytes, and thyroid function test. Laryngoscopy was normal.

The patient then underwent a total thyroidectomy and right modified radical neck dissection type III. A single nodule within the right thyroid gland, and a firm and enlarged, necrotic level V cervical lymph node involving the posterior body of sternocleidomastoid muscle, the internal jugular vein and extending beneath the right clavicle were found intraoperatively (Fig. 3). Multiple enlarged level I to IV nodes were also removed (Fig. 4).



Fig. 1. An isolated right neck enlargement with no apparent thyroid swelling

Histopathological examination revealed a 36 × 30 × 22 mm sized focus of PTC in the right lobe of the excised gland with nuclear features consistent with papillary thyroid carcinoma and a metastatic lymph node (Fig. 5). The patient recovered well postoperatively without any complications. He was subsequently referred to an oncology team and was planned for radioactive remnant ablation (RRA) to define when first time used. He was discharged with thyroxine suppressive therapy.

DISCUSSION

PTC is the most common type of thyroid malignancy. It is an indolent disease with mild biological behaviour. Satisfactory management contributes to an excellent prognosis with survival rates of more than 90%. Mortality after PTC is extremely rare unless in anaplastic thyroid cancer⁽⁵⁾. Even patients with distant metastasis at presentation have a prognosis of more than 60%. Parameters such as age

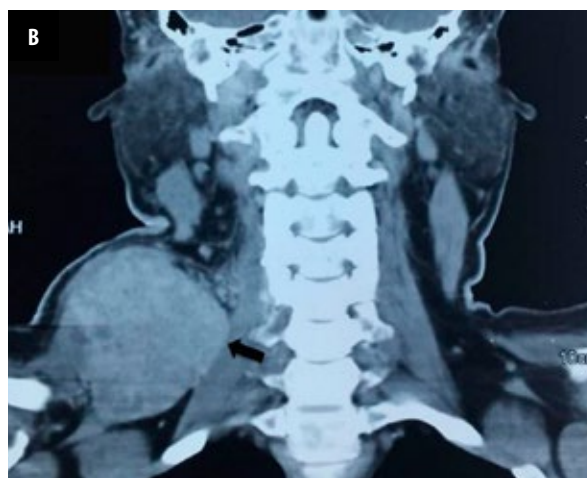
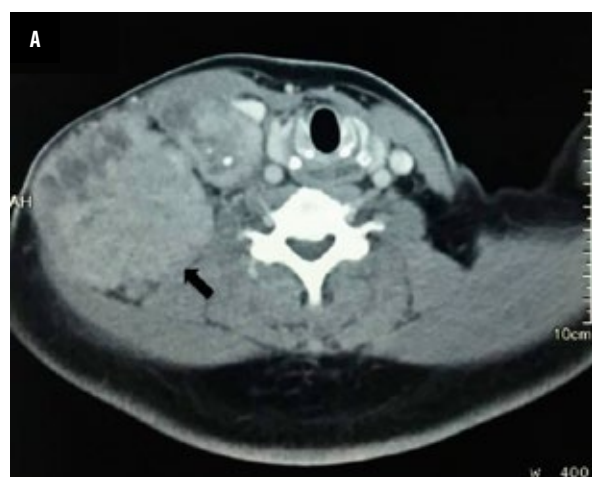


Fig. 2 A. Axial view of CT scan showing a heterogeneous mass at posterior triangle (black arrow); B. Coronal view of CT scan showing a similar mass (black arrow)

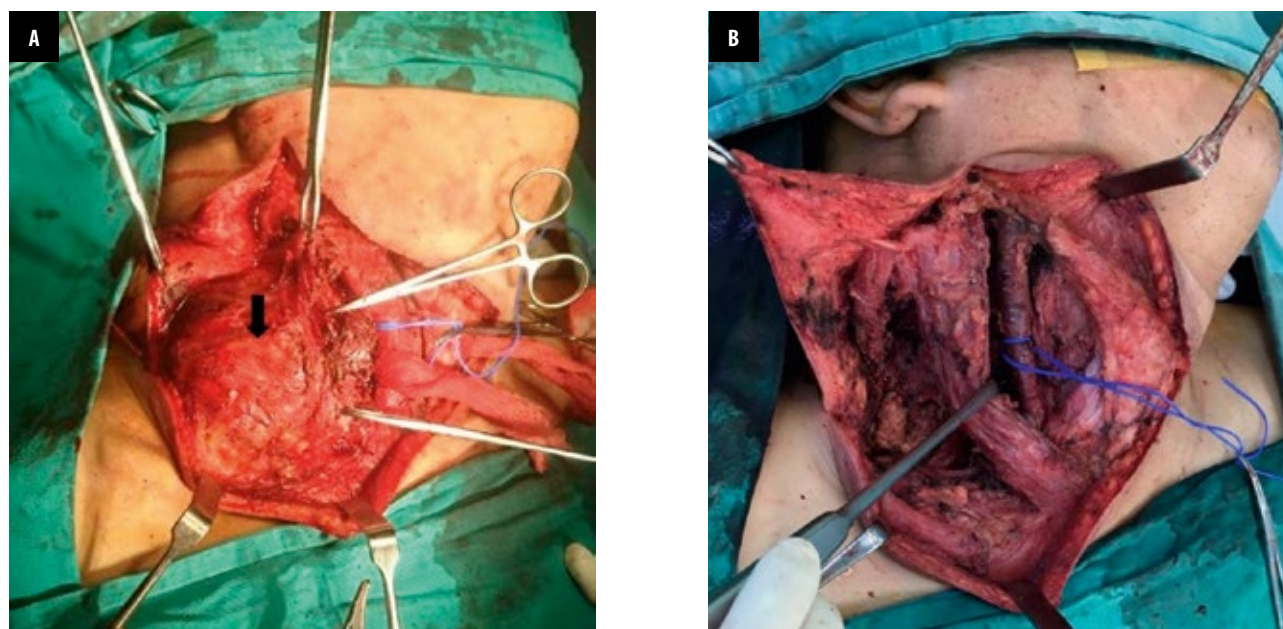


Fig. 3 A. An intraoperative picture showing a huge mass (black arrow) at posterior triangle of the neck; B. An intraoperative picture after resection of the huge posterior triangle lymph node with preservation of right internal jugular vein (with blue vascular loop) and partial sternocleidomastoid muscle

>40 years, extrapulmonary metastases, and a follicular histological variant are related to poorer outcome despite the best possible treatment⁽⁶⁾.

PTC is frequently detected by the presence of anterior neck swelling. Certain patients may complain of either discomfort in mild cases to compressive or infiltrative symptoms from the goitre in severe ones. They will complain of obstructive symptoms such as shortness of breath, dysphagia, snoring when lying down and even hoarseness whenever there is recurrent laryngeal nerve involvement. Due to its nature to spread via lymphatic routes, cervical metastases are present in between 3% to 30% for low-risk PTC and 59% for high-risk cases⁽⁷⁾.

Clinical examination commonly results in palpable goitre; however lymph node involvement will be discovered in 15–30% of the cases⁽⁷⁾. However, cervical lymphadenopathy as the sole presentation, as seen in our case, is an extremely rare occurrence. Therefore, imaging is paramount to assist in the diagnosis. Sonographic features such as irregular hypoechoic lesion greater in height than width, the presence of intranodular calcification and vascularity, and loss of egg shell calcification raise a suspicion of malignancy⁽⁸⁾. Meanwhile, ultrasound of metastatic lymph nodes will show malignant features, which include a rounded rather than oval shape, loss of fatty hilum, thickened cortex and a size of more than 1 cm. In cases of non-palpable thyroid lesions without suspicious features, they should be followed up by a repeat clinical and ultrasound assessment within 6 to 12 weeks⁽²⁾.

The FNAC is important to diagnose PTC. Cytologic characteristics such as nuclear grooving, intranuclear

pseudoinclusion and powdery chromatin are pathognomonic for PTC. The minimally invasive and less painful FNAC is a reliable tool in the hands of a well-experienced cytologist⁽⁹⁾. In the case of occult metastasis in the cervical lymph nodes, FNAC enables to confirm the primary source based on its tumour morphology complemented by



Fig. 4. Macroscopic specimen showing huge posterior lymph node (black arrow) weighing 340 gm, measuring 10 × 8 cm with roughly normal size of thyroid gland. Smaller sized right sided level II and III lymph nodes were also resected

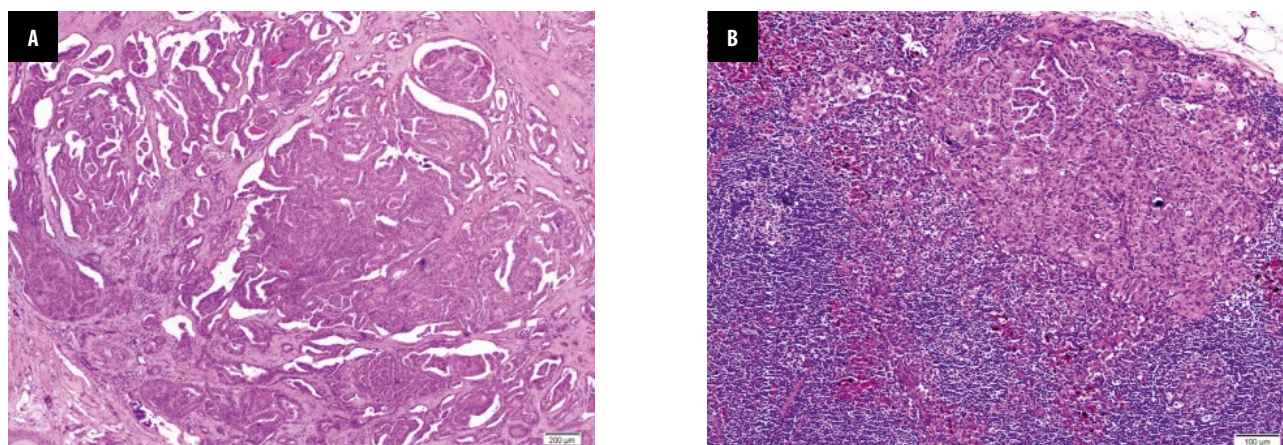


Fig. 5 A. Tumour cells in thyroid tissues arrange in papillary structures with central fibrovascular core with the presence of capsular invasion (H&E $\times 4$). B. Lymph node with positive tumour metastases (H&E $\times 10$)

immunohistochemistry of thyroglobulin and TTF-1. If cytology is inconclusive, open biopsy of lymph nodes is obligatory. However, it is essential during skin incision to take extra prudence so as not to compromise the outcome of future neck dissection⁽²⁾. For any suspicious lesion in the thyroid measuring between 8 and 15 mm, an ultrasound-guided FNAC should be performed to complement the accuracy of the diagnostic method⁽²⁾.

CT scan is an important investigation used to assess a neck lesion, especially an isolated neck mass like in this reported case. In thyroid malignancy, CT scan is not routinely performed as the iodinated contrast agent will interfere with the future RRA. The iodine will be supersaturated in the body, hence the efficacy and accuracy of RRA will be deficient. However, there are few exceptions in deciding on the use of CT scan preoperatively. If the thyroid resectability is in question locally and in the case of suspected retrosternal goitre, the CT scan is prioritised as the main modality of investigation.

According to recommendations, a patient with isolated cervical lymph node metastases in the posterior or lateral aspect requires total thyroidectomy with ipsilateral lateral and central lymph node dissection⁽¹⁰⁾. Postoperative RRA and thyroxine suppressive therapy should be used in order to ensure a promising and excellent outcome. Any lymph node recurrence during follow-up requires node sampling and subsequent selective lymph node dissection.

CONCLUSION

PTC presenting solely as a posterior cervical lymphadenopathy is exceptional. A combination of imaging modalities and FNAC are essential for confirmatory diagnosis. If metastatic cervical lymphadenopathy is confirmed, total thyroidectomy with lymph node dissection is the mainstay of treatment. The surgical outcome is promising if followed by postoperative RRA and thyroxine suppressive therapy.

Conflict of interest

All authors had no conflict of interest in this study.

Acknowledgement

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