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Case Report

Asynchronous thyroid metastases of malignant melanoma: report of a rarity

Nuno V. Ferreira[1]*, Ana M. Inácio[1], Jorge M. Pais[1], Monica A. Laureano[1], Fernanda S. Cunha[2], Cristina M. Amado[2], Tania T. Valente[1], Gonçalo S. Ferreira[1], Arnaldo J. Figueiredo[1], Rita R. Banza[1], Miguel C. Santos[1]

[1]Department of Surgery, [2]Department of Pathology, Centro Hospitalar de Leiria, Leiria, Portugal

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***Correspondence:**
Dr. Nuno V. Ferreira,
E-mail: nunohvf@gmail.com

ABSTRACT

Thyroid metastasization is a very rare phenomenon with a challenging diagnosis. The incidence is 0.36% in all thyroid malignancies and it is reported it would be up to 2% after surgical specimens' diagnosis. Thyroid metastasization of a malignant melanoma stands with an incidence of 2% in all thyroid secondarism. We report a 41-years old female with cutaneous malignant melanoma resected four years before the start of compressive symptoms secondary to multinodular goiter. Fine-needle-aspiration showed malignant cells of uncertain origin. A total thyroidectomy was performed. Histopathological examination showed multinodular metastases of malignant melanoma. Thyroid metastasis typically presents as a unifocal thyroid mass or nodule and may occur in the absence of a primary tumor diagnosis, thus leading to a misdiagnosis of thyroid primary tumor. Immunostaining and molecular testing are useful in case of doubt. Although metastases generally indicate disseminated disease, some patients may benefit from aggressive thyroid resection surgery when compared to conservative approaches. Newly-diagnosed thyroid mass in any patient with history of malignancy should raise suspicion for metastasizing. Although the overall prognosis of thyroid metastasis is poor, surgery could be an option in some cases with survival improvement or a palliative role.

Keywords: Thyroid, Malignant, Melanoma, Metastasis, Metastasization, Surgery, Thyroidectomy

INTRODUCTION

Thyroid metastasization is a very rare phenomenon with a challenging diagnosis. The incidence is 0,36% in all thyroid malignancies and it is reported it would be up to 2% after surgical specimens diagnosis.[1-4]

The most common primary site is kidney with renal cell carcinoma counting for 40% of the cases, followed by pulmonary, head and neck, breast, lower and upper gastrointestinal tract carcinoma, sarcoma and melanoma.[1-3]

We present a case of asynchronous thyroid metastases secondary to malignant melanoma resected four years before. It is most exceptional in terms of rarity because thyroid metastasis of a malignant melanoma stands with a incidence of 2% in all thyroid secondarism.[1-3,5-16]

CASE REPORT

We report a 41-years old female with cutaneous malignant melanoma located in posterior thorax, between scapulae, with 22 mm, surgically resected four years before, staged as pT3bN0M0, IIB. Sentinel lymph-node search was negative. Follow-up with absence of locoregional or systemic metastasization. She was then referred to surgery attendance for multinodular goiter with compressive symptoms, including tracheal shift by dispersed multiple

hypoechoic macronodules after a thyroid ultrasonography (Figure 1).

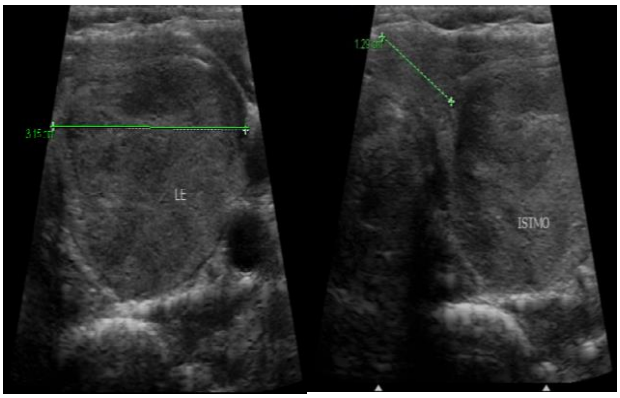

Figure 1: Thyroid ultrasonography: left lobe macronodule with 31.5 mm (left) and peri-isthmus nodule with 12.9 mm (right).

A 32 mm left-lobe-located nodule was the biggest and a fine-needle-aspiration was performed. Cytology result showed malignant cells of uncertain origin. Blood analysis were normal for leukocytes and platelets count and hemoglobin was 13 g/dl. The patient had euthyroid status and the symptoms included odynophagia, neck fullness and trouble breathing. In this context, a total thyroidectomy was proposed and performed as compressive symptoms with a multinodular thyroid with malignant cytology was present. Furthermore, an 8-mm suspicious skin lesion in sternum region was resected in the same surgery.

An open anterior cervical approach was performed and surgery was uneventful. Surgical specimen showed an enlarged thyroid secondary to multinodularity (Figure 2).

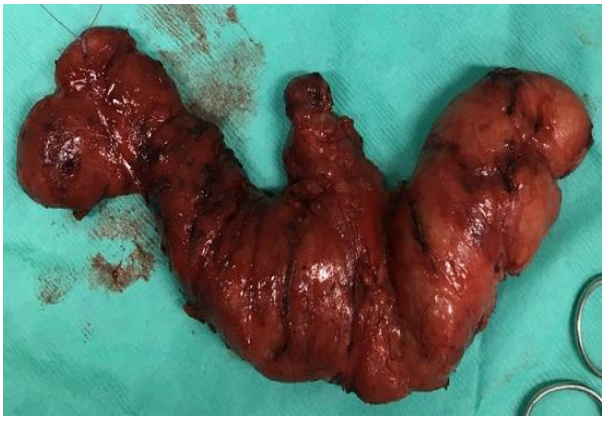

Figure 2: Surgical specimen: multinodular thyroid.

A surgical drain was placed and removed in the next day. She was discharged from the hospital in 2 days with no complications.

Histopathological exam revealed that all multiple nodules in surgical specimen was melanoma nodular metastases. Immunostaining for melanocyte differentiation marker Melan-A was positive. Skin lesion was also analyzed and showed histological pattern of metastatic nodule of melanoma (Figures 3-5).

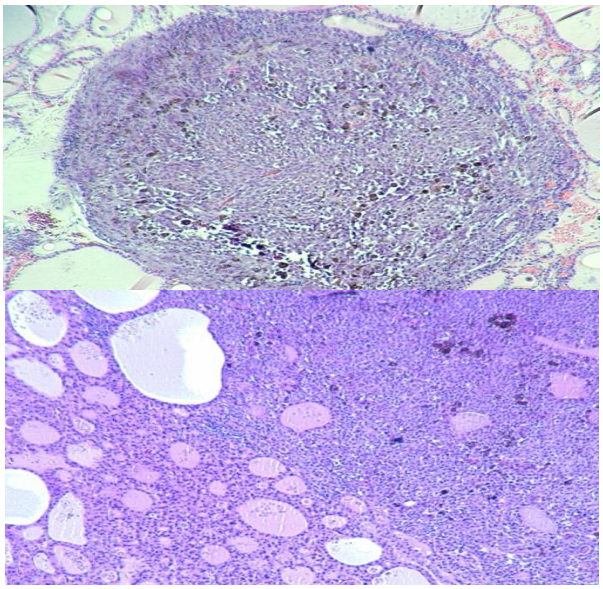

Figure 3: Thyroid metastasis (40x magnification).

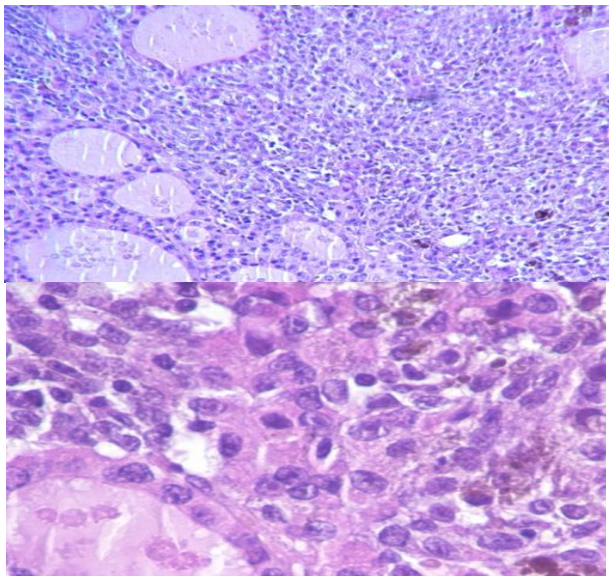

Figure 4: Thyroid metastasis (100 and 400x magnification).

No other locations of metastasization were detected even after staging imaging, namely cranial and thoracoabdominal tomography.

It was proposed to initiate oral trametinib and dabrafenib as chemotherapy scheme. Two years after the surgery she experienced severe headaches, asthenia and vomiting which lead to seek for an emergency department. Cranial tomography and magnetic resonance showed multiple hyperdense lesions in cerebellum with transtentorial

herniation, in temporal and frontal lobe, in diencephalon, in centrum semiovale and superior frontal gyrus. All these lesions were cerebral metastases and palliative measures had been taken into priority. The patient died 1 month after this clinical presentation.

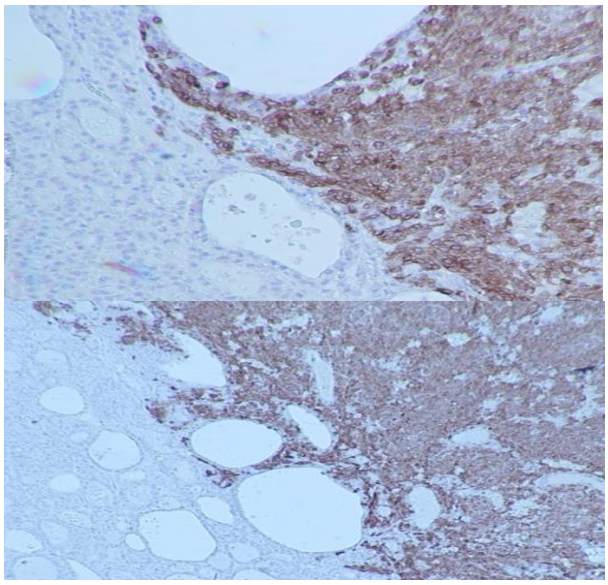

Figure 5: Immunostaining + for Melan-A (40 and 100x magnification).

DISCUSSION

Thyroid metastasis typically presents as a unifocal thyroid mass or nodule and may occur in the absence of a primary tumor diagnosis.[1] Sometimes, this leads to a misdiagnosis of thyroid primary tumor in a significant number of cases, which has drastic implications for the patient. Immunostaining for TTF-1, thyroglobulin, PAX8 and molecular testing are useful in case of doubt and can prevent harm to the patient.

This case exposes a multinodular goiter by thyroid metastases secondary to high-grade melanoma treated 4 years before, with skin metastasization also present. No further locations for metastases were detected. A total thyroidectomy was performed due to compressive symptoms and suspicious cytology for malignancy of unknown origin.

Although metastases generally indicate disseminated disease, it is known that some patients may benefit from aggressive thyroid resection surgery of metastatic solitary lesions not only improving survival but also bringing a long-term cure when compared to conservative approaches.[7,17]

This case demonstrates rarity by the presence of asynchronous multinodular thyroid metastases of a malignant melanoma, with a metastasized skin focus, in the absence of other metastasization foci. The patient remained free of disease in a 2-years follow-up since thyroid metastases were aggressively treated with total thyroidectomy.

CONCLUSION

In our understanding, in the clinical setting of newly-diagnosed thyroid mass in any patient with history of malignancy, we should assume metastasization until proven otherwise. Imaging, cytology and immunostaining proved to be helpful in these situations.

Although the overall prognosis of thyroid metastases is poor – 5-years disease specific survival of 58% - surgery is an option with survival improvement in oligometastasization, including possible long-term remission.[1,7,17]

Nevertheless, we should not forget the palliative role of a total thyroidectomy in plurimetastasized thyroids with great probability for or already established compressive symptoms, even if prognosis remains obscure.

Our group opinion encourages surgical treatment as it relieves symptoms of compressive goiter and may have benefits in terms of free-of-disease survival in selected cases of thyroid-only metastasization.

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