Black thyroid: a benign finding

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DESCRIPTION

We present a case of a 23-year-old woman with an incidentally finding of black thyroid during the evaluation of a thyroid nodule. The patient came to the office for a thyroid nodule found during a routine healthcare visit. The patient had a history of severe acne during her adolescence, treated with minocycline for 1 month. She was asymptomatic with normal vital signs. Physical examination revealed a hard stone consistency thyroid nodule fixed to surrounding tissues in the right lobe of approximately 15 mm. Ultrasound revealed a 17×10 mm solid nodule in the right lobe of heterogeneous echogenicity with microcalcifications. No cervical lymph nodes were found. Fine-needle aspiration biopsy showed epithelial cell sheets with increased dense chromatin nuclear volume, clefts, evident nucleolus and haematic background suggestive of malignancy (Bethesda IV). Due to the high risk of malignancy, a total thyroidectomy was performed. Gross examination of the thyroid showed a darkly pigmented gland with not significant deformities (figure 1). The histopathological study showed a wine-red colouration with multiple colloid cysts compatible with follicular adenoma (figure 2).

Black thyroids are an incidental finding¹ due to the thyroid changes asymptomatic course.²

The most accurate explanation of the atypical coloration of the thyroid is the therapy with minocycline, which is accumulated as dark pigments in lysosomes and macrophages after thyroid peroxidation. However, they do not affect the gland's functionality.³ Black thyroids were also reported in cystic fibrosis and less

Figure 2 Follicular adenoma: wine-red colouration with multiple colloid cysts compatible.

common in hereditary haemochromatosis and ochronosis.^{4 5}

Thyroid neoplasm has been reported in 65% of patients with black thyroid; nevertheless, the high prevalence of malignancy can be explained by the fact that black thyroid is diagnosed during the thyroid malignancy diagnostic workup triggered by the overdiagnosis of thyroid cancer.⁶ Neither black thyroid nor minocycline has been associated with an increased risk of malignancy or more aggressive cancer.⁷

Patient's perspective

When they found a nodule in my thyroid and explained that it could be cancer, I was devastated. Although this news may be less hard for older adults, for me at 23, it was something that I did not expect. Once the surgery was finished, my doctor came to me he told me a disturbing fact, my thyroid was black. He explained that it was not something I should be concerned about and that it could be due to a side effect of medication that I took several years ago. Despite how meticulous he was in his explanation; I cannot stop thinking that maybe there are other black organs inside of me and that my acne treatment caused me cancer. Fortunately, in my next appointment, I received the histopathology report and I realised it was benign. It was the best news I received, and I felt quiet to know that there is nothing in my neck and I can continue a normal life.

Learning points

- ▶ Black thyroid is an incidental finding related to minocycline therapy.
- ▶ The findings should be discussed with caution to patients who may find it highly distressing.

Figure 1 Intraoperative photographs: pathognomonic black thyroid.

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