BLACK THYROID DIAGNOSED ON FNAC

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CLINICAL HISTORY

A 19-year old boy presented with a midline neck cyst in the submental region. A thyroglossal duct cyst was considered. His thyroid function test established an euthyroid state.

RADIOLOGY

Ultrasound (USG) demonstrated a circumscribed oval structure with uniform moderately high level echoes throughout, measuring 24 x 21 x 12 mm. There was no internal vascularity on colour Doppler.

CYTOLOGY FINDINGS

A moderately cellular smear showed clusters and sheets of epithelial cells with inconsistent nuclear enlargement, mild hyperchromasia and distinct nucleoli. Greenish-black intracytoplasmic, finely granular pigment was seen in epithelial cells and macrophages, suggestive of melanin. The background showed squamous cells and debris. No colloid was identified. The differential diagnoses considered were thyroglossal cyst with haemorrhage, dermoid cyst, systemic disorders producing endogenous pigment and foreign pigment. Further clinical information revealed that the patient received a six month minocycline treatment for acne, which helped in suggesting a diagnosis of a drug induced pigment.

DISCUSSION

Minocycline-induced black thyroid (MIBT) was first described in 1976¹. The black pigment may represent products of minocycline oxidation by thyroid peroxidase (TPO). Pigment may be lipofuscin, melanin, neuromelanin or an oxidation product of minocycline; however, lipofuscin is a predominant fraction². Black pigmentation of the thyroid gland is a relatively rare condition, and can also occur with endogenous pigment producing systemic illness, such as hemosiderosis or ochronosis and melanin producing medullary carcinoma. Some anti-depressant therapy can cause red pigmentation. The follicular epithelium can show reactive nuclear atypia which can lead to diagnostic dilemma. It is difficult to diagnosis black thyroid on FNAC without clinical history which will enable to rule out systemic diseases. Birkedal and co-workers have suggested that incidental discovery of black thyroid should be dealt proactively with surgical resection to stem the risk of papillary thyroid carcinoma². However, there are currently no recommendations that patients with black thyroid but without evidence of thyroid cancer on pathology should undergo prophylactic thyroidectomy³. Our patient deferred surgery and is on regular follow up.

Fig. 1. USG of the mid line neck mass near hyoid bone. Fig 2. Giemsa stained demonstrates epithelial cell clusters with green black pigment (Low power). Fig 3. High power of the giemsa preparation.

Fig 1

Fig 2

Fig 3

Reference