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IMAGE OF THE MONTH

Functional imaging of concomitant lingual thyroid and parathyroid adenoma

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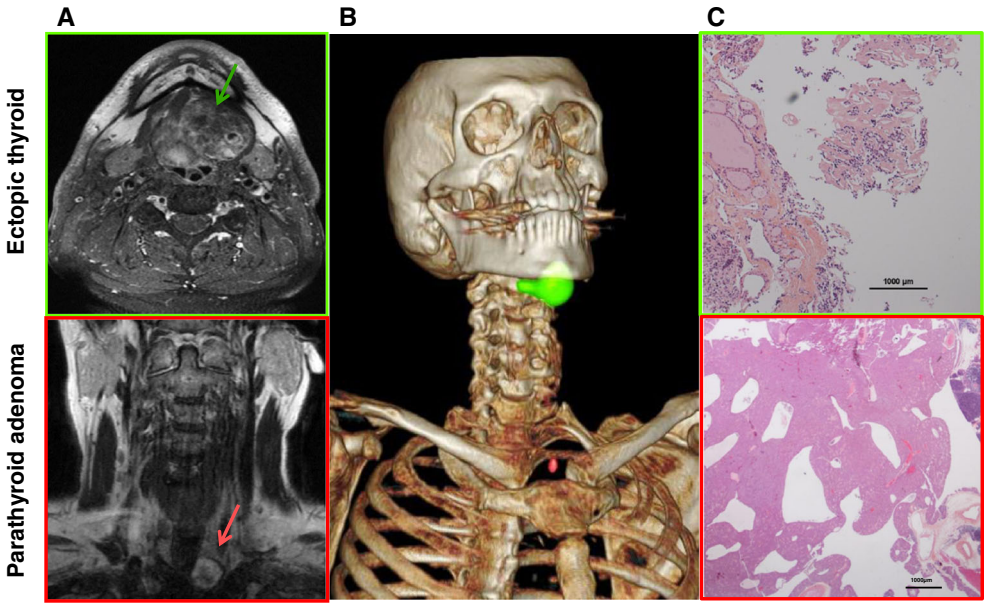
A 42-year-old man was admitted for primary hyperparathyroidism (serum calcium 3.39 mmol/L, normal range 2.20–2.65 mmol/L; serum PTH 114 pg/mL, normal range 12–88 pg/mL). Cervical ultrasonography followed by MRI (**a**) showed a left paratracheal nodule and a tumour-like lesion at the tongue base. The thyroid lodge was empty but thyroid function was normal (TSH 1.4 μUI/mL, normal range 0.6–4.5 μUI/mL). ^{99m}Tc-Sestamibi single photon emission computed tomography (^{99m}Tc-sestamibi SPECT) is used to identify parathyroid adenomas [1]. The addition of a second radiotracer such as sodium-[^{123}I]iodide (dual isotope scintigraphy) allows sensitive subtraction parathyroid scintigraphy as well as selective imaging of the thyroid gland [2]. In our patient, ^{123}I-^{99m}Tc-sestamibi SPECT dual isotope scintigraphy with CT fusion (**b**) revealed distinct uptake of sodium-[^{123}I]iodide (*green*) and ^{99m}Tc-sestamibi (*red*) that was consistent with ectopic thyroid tissue and a parathyroid adenoma, respectively. Hypercalcaemia recovered after excision of the parathyroid adenoma and the lingual thyroid was confirmed after examination of intraoperative biopsies (**c**). Gene sequencing of transcription factors (TITF-1, Foxe-1 and PAX-8) involved in abnormal migration of the thyroid was normal [3]. Lingual thyroid is the most frequent site of ectopic thyroid tissue [4]. Most patients with a lingual thyroid have no thyroid tissue in the normal location but only one third of patients present with hypothyroidism [5]. Our patient was asymptomatic and was discharged without medication.



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