

Sublingual Thyroid Gland

Richard Wahl¹, Marius Horger² and Michael Haap^{1*}

¹Department of Internal Medicine, Division of Endocrinology, Diabetology, Angiology, Nephrology, and Clinical Chemistry, Eberhard-Karls-University Tübingen, Tübingen, Germany

²Department of Diagnostic and Interventional Radiology, Eberhard-Karls-University Tübingen, Tübingen, Germany

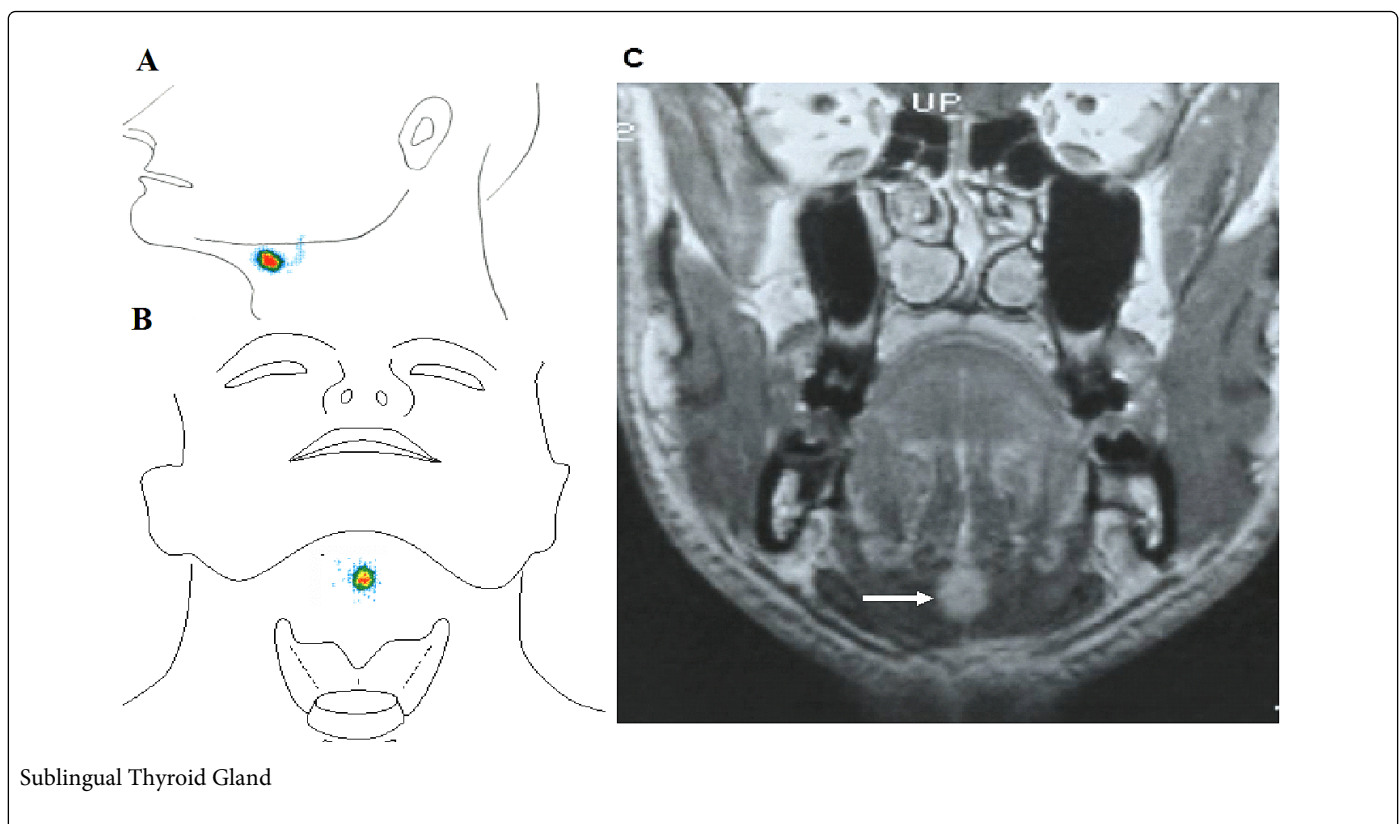
*Corresponding author: Michael Haap, Department of Internal Medicine, Division of Endocrinology, Diabetology, Angiology, Nephrology, and Clinical Chemistry, Eberhard-Karls-University Tübingen, Tübingen, Germany, Tel: +49 (0)7071-29-80594; E-mail: Michael.Haap@med.uni-tuebingen.de

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Clinical Image



A 22-year old man presented with a factitial hyperthyreosis (300 µg levothyroxine/d). He had a history of congenital hypothyroidism diagnosed in the age of 6 years. Thyroid hormone substitution compliance was irregular because of family problems.

Clinically only a small mass underneath the foramen cecum of the tongue was visually remarkable. Sonographically a homogeneous, sharply defined hypoechoic lesion with a diameter of approximately 1 cm was found above the hyoid bone. No orthotopic thyroid tissue was detectable.

After discontinuation of levothyroxine substitution for 4 weeks (TSH 330 mU/L), a pinhole scintiscan of the thyroid anteriorly (Figure A) and laterally (Figure B) was performed two hours after intravenous injection of 7.4 MBq (200 µCi) ¹²³I. Radioiodide uptake was 4% of the applied dose. We applied ¹²³I because it is nearly ideal both for imaging and for determining thyroid uptake. In contrast to ^{99m}Tc-pertechnetate, background activity secreted into the saliva is negligible resulting in more detailed anatomical clarification.

Thyroid imaging revealed an ectopic thyroid attached to the pharyngeal floor with a stalk in the region of the foramen cecum of the tongue (Figure A). This sublingual location was associated with the absence of a normal thyroid due to an embryonic failure of the thyroid to migrate to its normal cervical position (Figure B). To confirm the absence of a cervical thyroid, magnetic resonance imaging (MRI) was performed instead of computed tomography, because no additional ionization radiation and no iodinated contrast agents are required.

Coronal post-contrast (Gd-DTPA) T1-weighted MR scans of the base of the tongue show an enhancement in an approximately 1 cm (0.4 inch) large sublingual thyroid gland corresponding to the hot spot on ¹²³I-iodine scintigraphy (Figure C, arrow). A more innovative imaging in the delineation of lingual thyroid would be bimodality imaging by SPECT/CT which was not conducted in this case.