Endocrinology & Metabolic Syndrome

Haap et al., Endocrinol Metab Synd 2014, 3:2
http://dx.doi.org/10.4172/2161-1017.1000i001

Image Article Open Access

Sublingual Thyroid Gland

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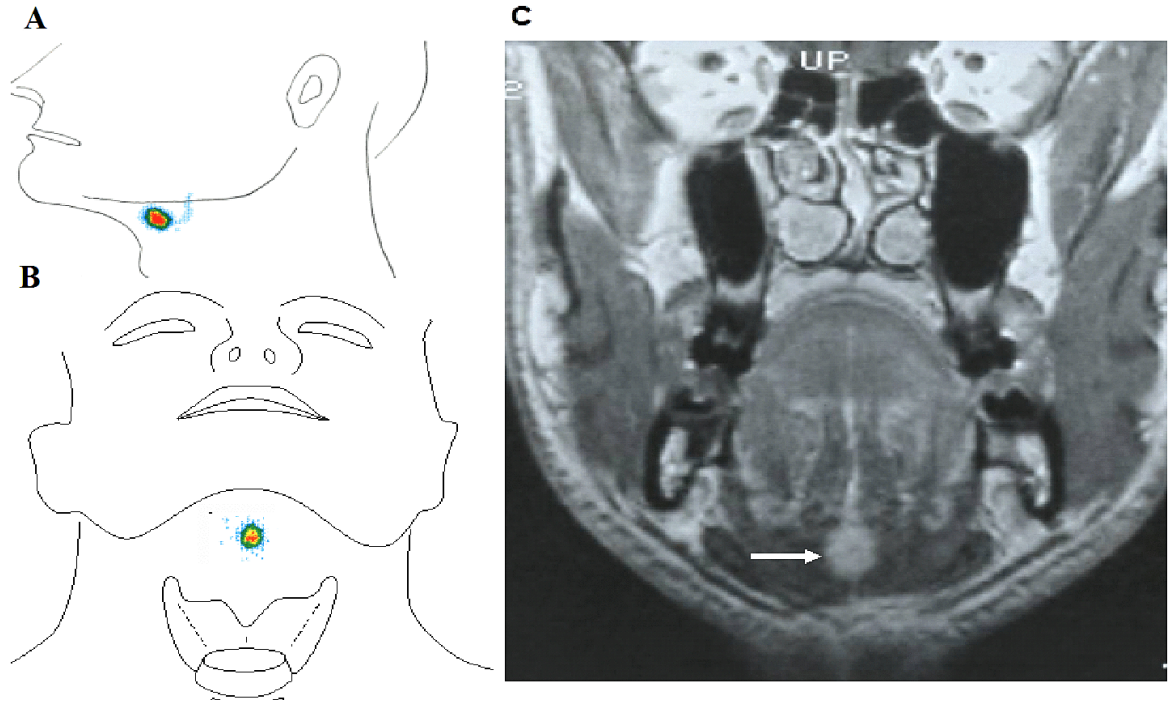
Received date: Jun 04, 2014, **Accepted date:** Jun 06, 2014, **Published date:** Jun 10, 2014

Citation: Wahl R, Horger M, Haap M (2014) Sublingual Thyroid Gland. Endocrinol Metab Synd 3: i001. doi:10.4172/2161-1017.1000i001

Clinical Image



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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) 123-I. Radioiodide uptake was 4% of the applied dose. We applied 123-I 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 123-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.