

PAPILLARY THYROID CARCINOMA IN A 7 YEAR OLD BOY PRESENTING WITH A GOITER WITHOUT MICROCALCIFICATIONS AND ENLARGED CERVICAL LYMPH NODES

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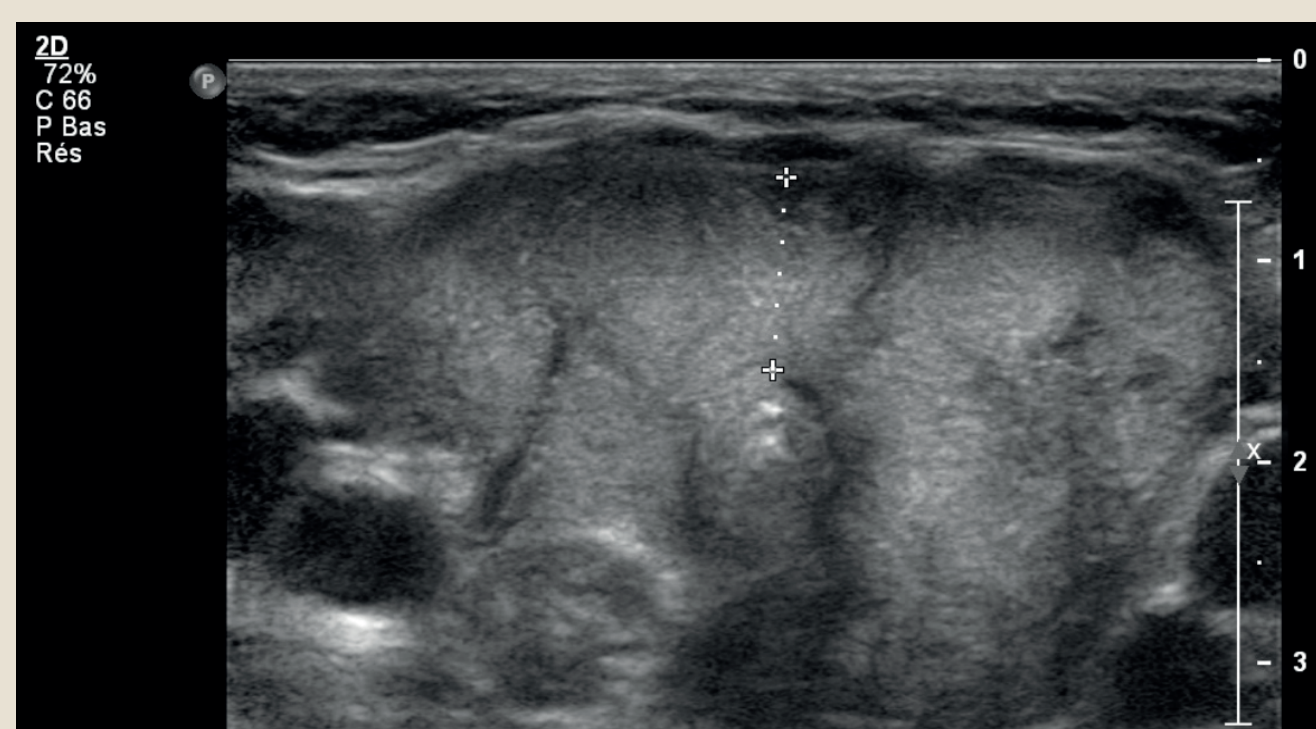
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INTRODUCTION

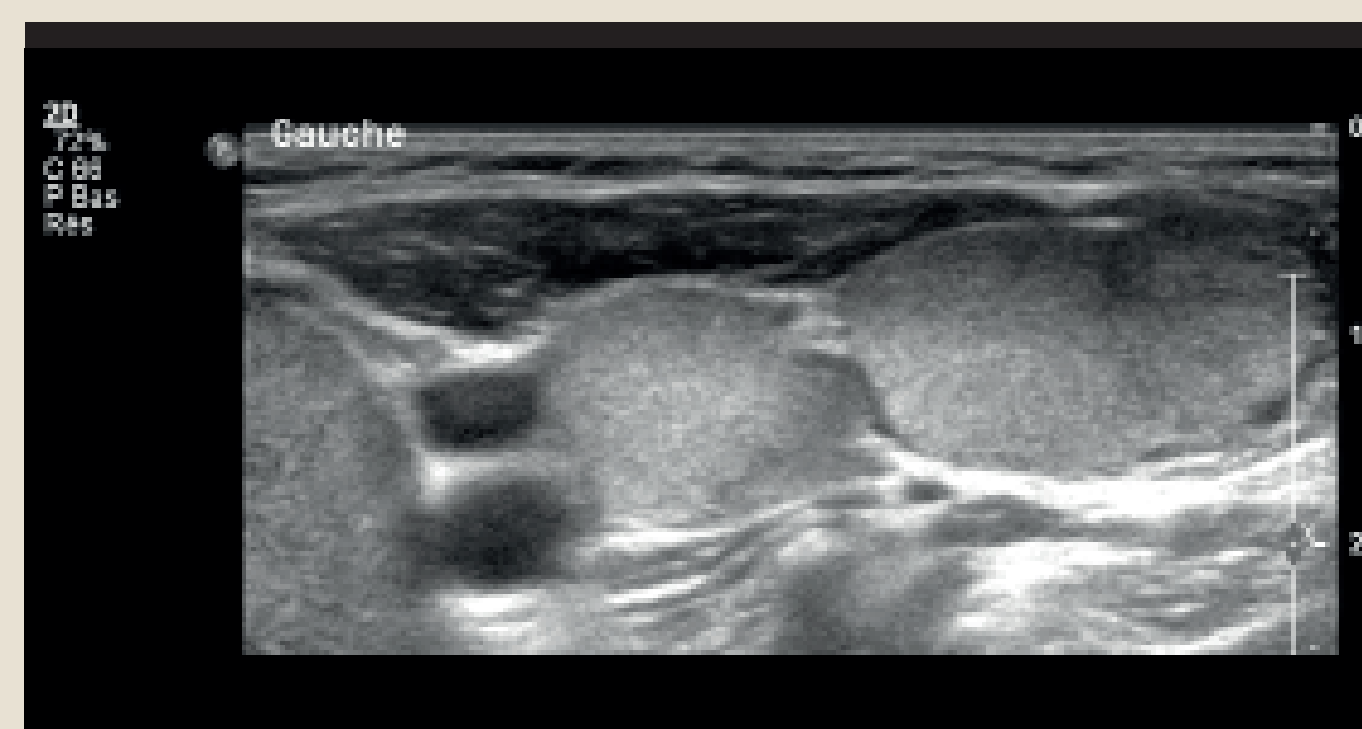
- > Only 1.8 % of thyroid malignancies occur during childhood, explaining very limited pediatric data.
- > Most frequent in children are papillary thyroid carcinoma (PTC), occurring after exposure to radiation, and presenting as a thyroid nodule +/- cervical lymph nodes.
- > PTC may present as diffusely infiltrating disease of the thyroid with microcalcifications.
- > We report an uncommon presentation of a PTC in a 7 year old boy.

CASE REPORT

The boy was referred for a goiter with cervical lymphadenopathies. He had neither a history of exposure to radiation nor a family history of thyroid cancer. He had a grade 2 goiter with multiple enlarged bilateral cervical lymph nodes. Thyroid function tests were normal. **Ultrasonography revealed a multinodular, hypervascularized goiter (12.5 ml) and numerous bilateral cervical nodular formations with a thyroid-like ultrasound structure.**



Ultrasound of the thyroid



Ultrasound of the left cervical lymphnodes

A FDG18 PET scan showed a hypermetabolic thyroid and hypermetabolic cervical lymph nodes. No other hypermetabolic focus was seen. Blood analysis excluded an inflammatory process; tumor markers (including calcitonin) were negative.

Fine needle aspiration cytology of the thyroid indicated an adenoma without signs of malignancy.

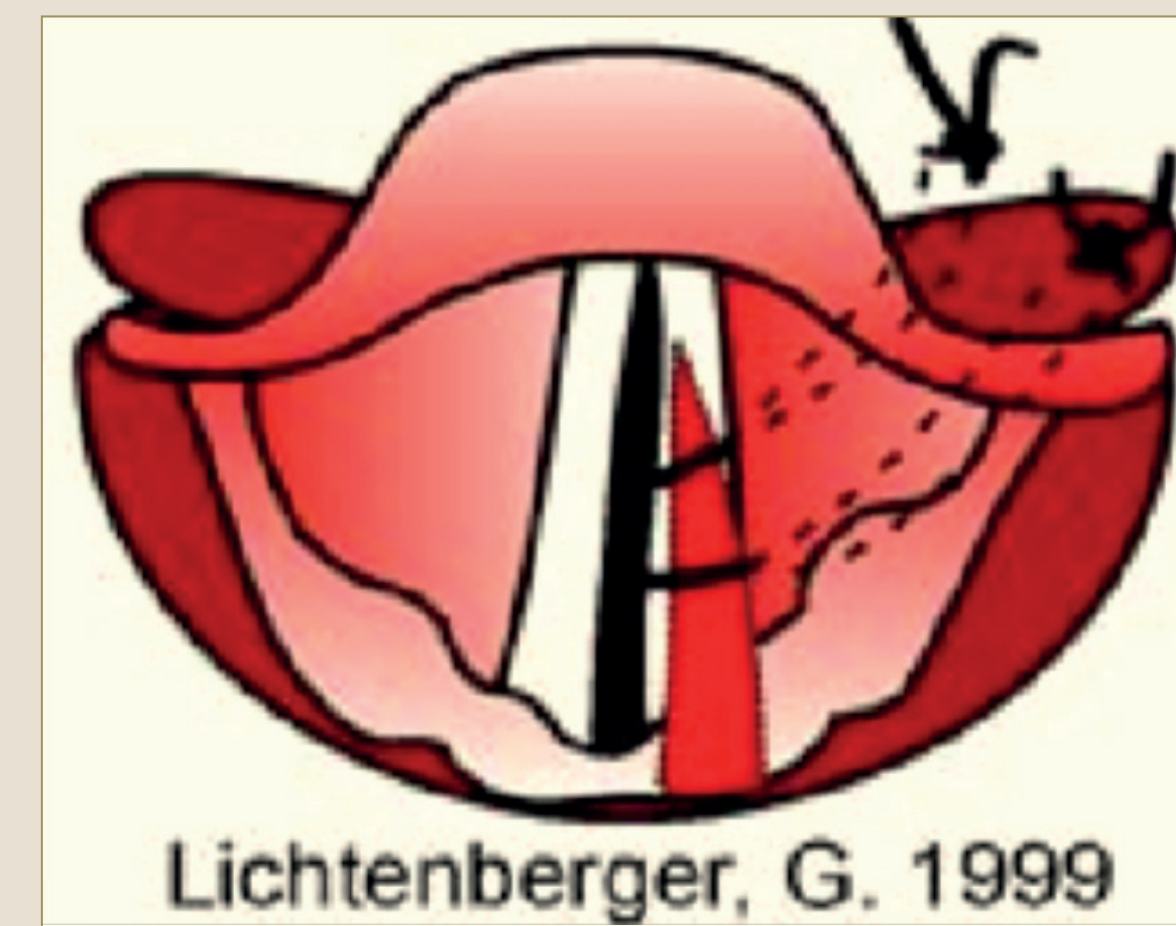
Lymph node biopsy and left hemithyroidectomy were scheduled. Intraoperative analysis of the lymph node revealed metastatic thyroid cancer by positive thyroglobulin staining tissue. **Thyroidectomy and complete neck dissection** were performed. Bulky metastatic lymphadenopathy with tumor tissue growing into adjacent structures (trachea) and encasing both recurrent laryngeal nerves (RLN) was discovered. The left RLN had to be resected, 2 parathyroid glands were left in place.



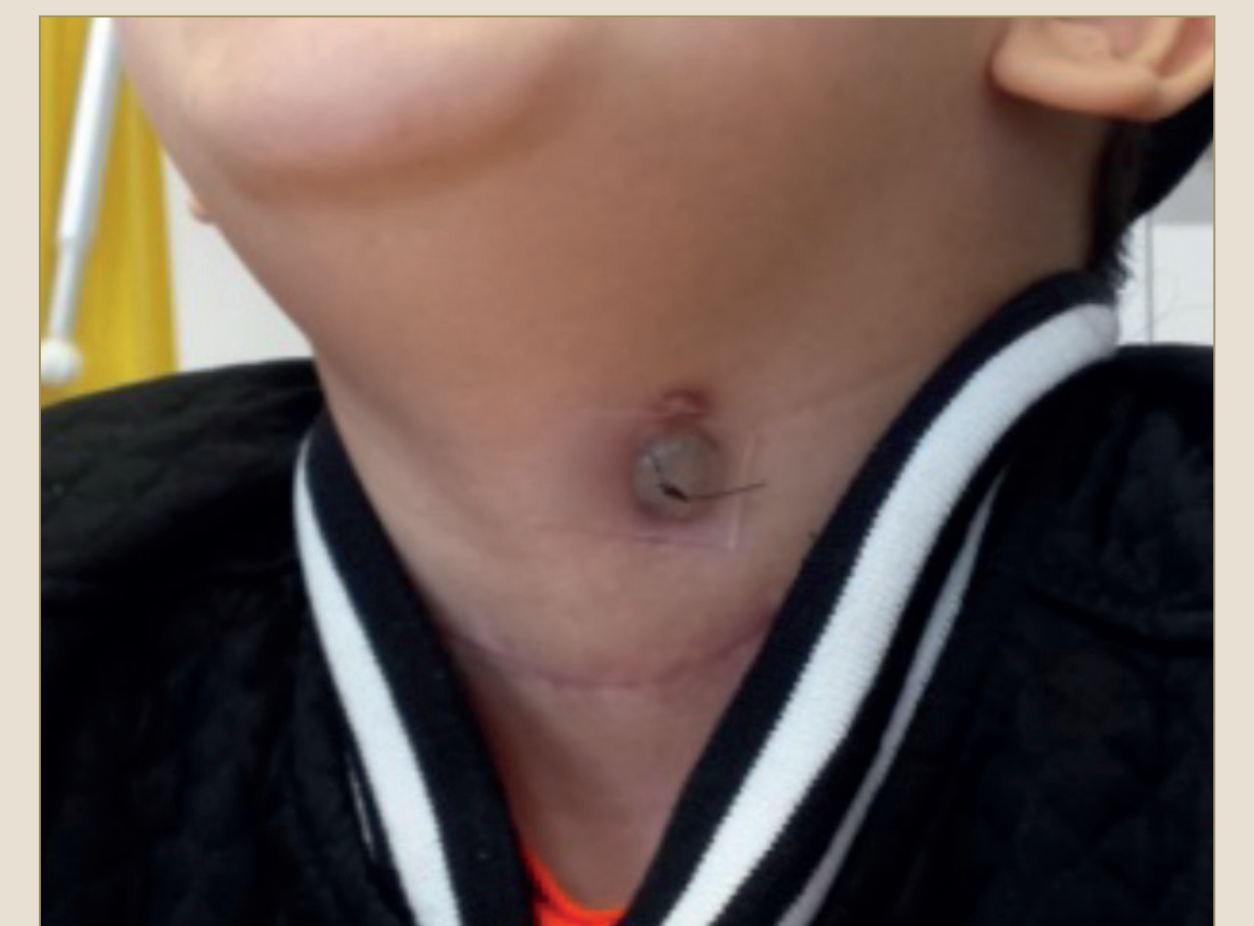
Resected lymph nodes from the left neck dissection

Histopathology confirmed a **PTC (follicular variant)**. No genetic mutation was detected (APC, WRN, PTEN, PRKAR1A, DICER1).

Postoperative care was complicated by bilateral RLN palsy. Reversible left cordopexy (Lichtenberger's technique) enabled extubation.



Lichtenberger, G. 1999



The patient was substituted by T3 (Cynomel), Calcium and Alfacalcidol (1-hydroxycholecalciferol) for a postoperative hypoparathyroidism. Right RLN recovered and cordopexy could be unfixed 3 months later. **Ablative I(131)**, 30 mCi was performed 4 months postsurgery. A post-ablative I(131) scan revealed 1 metastatic lung nodule which has not been identified before (staging **T4a, N1b, M1**).

A second ablative I(131) treatment (30 mCi) was performed in 8/2018. As there is still residual tumor tissue suspected in the lung, a third ablative I(131) is planned. Currently the patient (weight 37 kg) is treated with a **suppressive T4 dose (125 µg/day), calcium (1,25 g/day) and alfacalcidol (1,4 µg/day)**.

CONCLUSIONS

Thyroid cancer in childhood is rare, especially presenting as a diffuse infiltration of the thyroid gland. In the presence of lymphadenopathies, thyroid cancer has to be suspected, even without microcalcifications.

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Thyroid

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