

Congenital multinodular goiter causing acute airway obstruction in a newborn: a case report



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INTRODUCTION

Usually neonatal goiter is caused by thyroid dysmorphogenesis. Multinodular goiter is an extremely rare condition in neonates and can account for tracheal airway compression.¹

PATIENT

- Newborn girl with an inspiratory and expiratory stridor and a visible swelling in the neck.
- Born term after uneventful pregnancy with birth weight of 3.26 kg.
- Mother: no thyroid disease, no medication and normal iodine containing diet.
- Left hemithyroidectomy was performed at day 9 because of airway compression.
- Two months after surgery levothyroxine treatment was started.
- 17 months after hemithyroidectomy right remaining lobe increased to 22cm³.

RESULTS

Blood results:

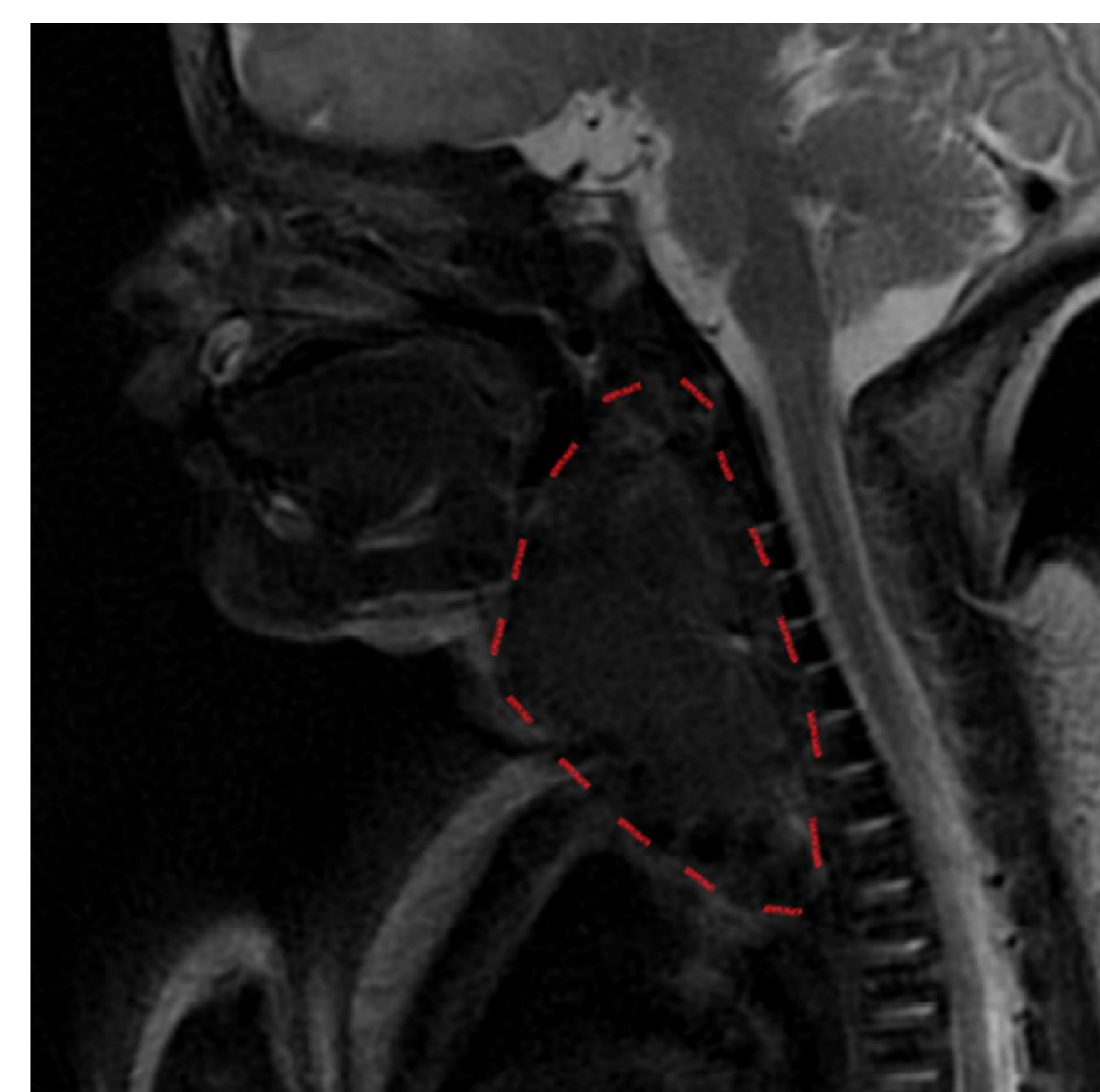
- TSH and FT4 normal at birth.
- TSH-receptor antibodies negative in patient and mother.
- Thyroglobulin 1870 ng/ml (ref. range 10-250) at birth.
- Two months after hemithyroidectomy: TSH 2.45 mU/l, FT4 11.6 pmol/l (ref. range 12.0-28.3 pmol/l).

Pathology results:

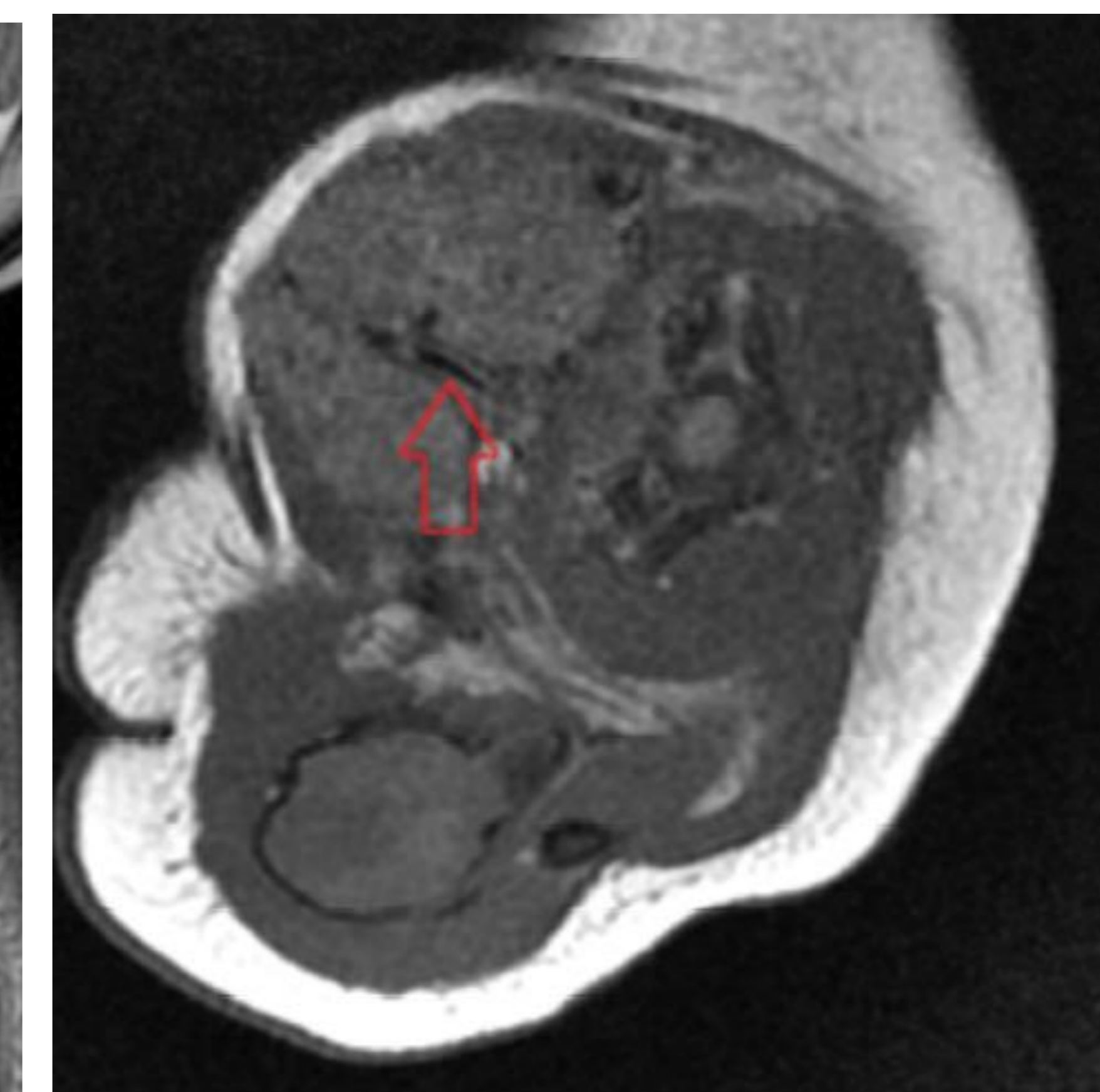
- Multinodular hyperplasia without signs of malignancy.

DNA results:

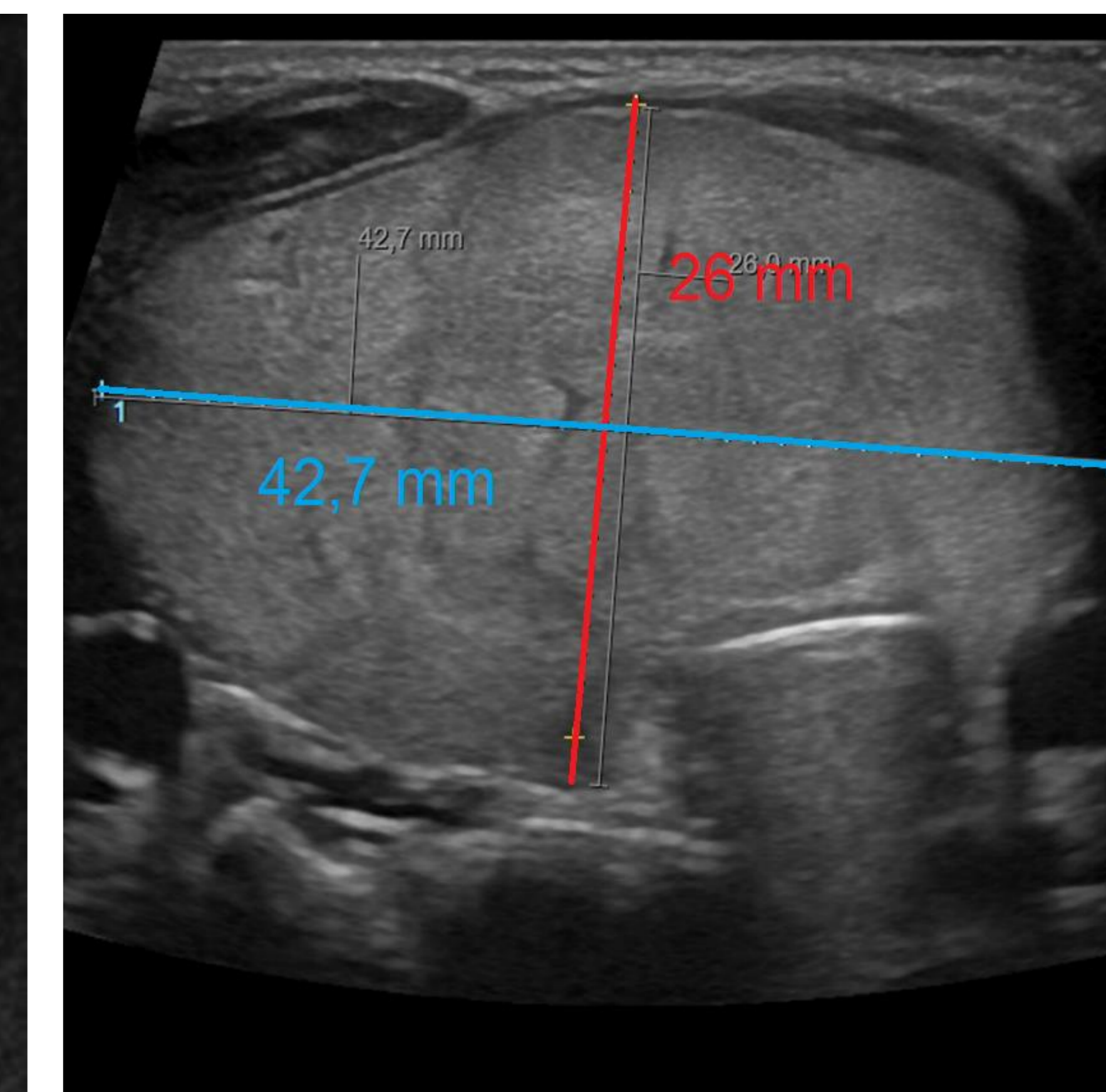
- Targeted next generation sequencing panel incl. 58 genes associated with thyroid dysgenesis, thyroid dysmorphogenesis and central hypothyroidism² in blood: no abnormalities.
- Sanger sequencing of *PTEN* and *DICER1* in blood: no abnormalities.
- Genetic analysis in thyroid tissue: no somatic mutations.



Sagittal T2 MRI image at birth: dashed red line indicating goiter. Volume of left lobe 11 cm³, volume of right lobe 5 cm³ (ref. range newborns 0.4-1.7 cm³).³



Axial T2 MRI image showing goiter with narrowing of the trachea with rest lumen of app. 1 mm (arrow).



Ultrasound image 17 months after left hemithyroidectomy showing increased right lobe (volume 22cm³).

FAMILY HISTORY

- Paternal grandmother had hypothyroidism without goiter from the age of 37 years and the father of this grandmother hyperthyroidism at an unknown age.
- Both grandmothers of the father had breast cancer around 60 to 65 years.

CONCLUSIONS

- Congenital multinodular goiter without thyroid dysfunction at birth can cause airway compression necessitating hemithyroidectomy.
- In the present case no cause of multinodular goiter was found, genetic analysis showed no abnormalities.

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