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

M.E.A. SCHEFFER-RATH, MD, PhD*; K. LÖHNER, MD†; N. ZWAVELING-SOONAWALA, MD, PhD*; A.M. BOOT, MD, PhD*

1. Department of Pediatric Endocrinology, Beatrix Children's Hospital, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands
2. Department of Genetics, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands
3. Department of Pediatric Endocrinology, Emma Children's Hospital, Amsterdam University Medical Center, University of Amsterdam, Amsterdam, The Netherlands

INTRODUCTION

Usually neonatal goiter is caused by thyroid dyshormonogenesis. 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 22 cm³.

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.

RESULTS

Blood results:
- TSH and FT4 normal at birth.
- TSH-receptor antibodies negative in patient and mother.
- Thyreoglobulin 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 dyshormonogenesis 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.

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.

REFERENCES

2. NGS hypothyroidism (HTV3), Amsterdam University Medical Center, Amsterdam, The Netherlands

ACKNOWLEDGEMENTS

We thank Martijn Verhagen, radiologist at UMCG, for his help with the images.

CONTACT INFORMATION

- m.e.a.scheffer-rath@umcg.nl
- a.m.boot@umcg.nl

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

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

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

Ultrasound of the thyroid gland in newborns

Presented at: 59ESPE

59 ESPE
The 59th Annual Meeting
9-11 September 2021

Amsterdam, Netherlands

Department
a.m.boot@umcg.nl

Department
Paternal grandmother had

Department

Department

Department