Paediatric papillary thyroid cancer: what to expect?

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DESCRIPTION

Papillary thyroid cancer is a rare tumour presentation in paediatric age, and although its incidence is rising, it accounts for 1.4% of all malignancies in this age.¹

The presentation of this differentiated thyroid tumour in paediatric age is often linked to lymph nodes and pulmonary metastases. The latter generally is diagnosis after radioactive iodine as they are normally not seen in X-ray or CT scans.^{2,3}

The prognosis is good when the optimal treatment is provided. The treatment derived from the experience in adult population since this is a rare tumour in children.^{2,4}

We present a case of 12-year-old female patient with a papillary thyroid cancer that was submitted to total thyroidectomy with central compartment lymphadenectomy (figure 1). The first and only complain that lead to the diagnosis was enlargement of the thyroid gland. During ultrasound, it showed a highly diffuse Doppler signal throw out the thyroid (figure 2). This was confirmed in the histological result where there was a lymphoid papillary tumour dissemination all over the gland. Of the 20 lymph nodes resected, 16 present metastases (figure 1).

She started radioactive iodine with good final overall result. No signs of metastases were found in the 6-month postsurgical intervention.

The patient had no family history of hereditary tumours, including thyroid cancer. The patient is awaiting results of genetic testing.

This case makes awareness for the diagnosis of thyroid tumour in paediatric age. The principal differences of presentation compared with adults are:

Figure 2 Doppler signal in both thyroid lobes indicating diffuse papillary tumour disease.

- Advanced disease at presentation as shown in figure 2.
- Need for total thyroidectomy and central compartment lymphadenectomy because of frequent lymph node metastases as shown in figure 1.

Learning points

- The papillary thyroid tumour is rare in paediatric age but generally presents with lymph nodes metastases at the time of diagnosis.
- Total thyroidectomy with central compartment lymphadenectomy is necessary.

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REFERENCES

- 1 Hogan AR, Zhuge Y, Perez EA, *et al*. Pediatric thyroid carcinoma: incidence and outcomes in 1753 patients. *J Surg Res* 2009;156:167–72.
- 2 Clement SC, Kremer LCM, Links TP, *et al*. Is outcome of differentiated thyroid carcinoma influenced by tumor stage at diagnosis? *Cancer Treat Rev* 2015;41:9–16.
- 3 Rivkees SA, Mazzaferri EL, Verbarg FA, *et al*. The treatment of differentiated thyroid cancer in children: emphasis on surgical approach and radioactive iodine therapy. *Endocr Rev* 2011;32:798–826.
- 4 Francis GL, Waguespack SG, Bauer AJ, *et al*. Management guidelines for children with thyroid nodules and differentiated thyroid cancer. *Thyroid* 2015;25:716–59.

Figure 1 Total thyroidectomy with central compartment lymphadenectomy. There are enlarged lymph nodes in the group of nodes resected (at the left). At the right, we can see in H&E stain the thyroid gland with multifocal conventional papillary thyroid carcinoma. Inset: lymph node metastasis with merging of papillary and follicular patterns.

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