

Giant Posttraumatic Cervical Hematoma: Acute Presentation of Papillary Thyroid Carcinoma in an Adolescent

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Key Words

Neck hematoma · Papillary thyroid carcinoma · Lobectomy

Abstract

Objective: To describe a rare case of acute presentation of papillary thyroid carcinoma (PTC). **Clinical Presentation and Intervention:** A 19-year-old male presented with an expanding cervical mass following blunt trauma. A computed tomography scan revealed a mass suspected to be hematoma that was compressing the vessels and thereby deviating the trachea. Immediate surgery was performed. Neither vascular injury nor active bleeding was seen; instead, a solid, hematoma-like tumefaction in the right thyroid lobe was revealed. A total thyroid lobectomy was performed. A histologic paraffin section confirmed a PTC that was permeated by hematoma. **Conclusion:** This was a unique case of an acute, life-threatening presentation of previously asymptomatic PTC in an adolescent.

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Introduction

Papillary thyroid carcinoma (PTC) is the most common thyroid cancer and composes about 80% of thyroid malignancies. PTC clinically behaves indolently and gen-

erally has an excellent prognosis. It is not common in children and adolescents, with an incidence ranging from 0.2 to 5 per million per year. However, when it does occur in these patients, it is considered to have different biological behavior from in the older population [1–3]. The PTC in children and adolescents tends to be more advanced at diagnosis, with local and even distant metastasis, and is of an aggressive nature [2, 3].

Surgery, thyroid-stimulating hormone (TSH) suppression therapy and radioiodine treatment are current treatment modalities that give excellent prognosis for most pediatric and young adolescent patients [4]. In this report, we describe an adolescent patient with an unusual, acute, life-threatening complication of previously undiagnosed PTC following blunt neck trauma.

Clinical Presentation and Intervention

A 19-year-old male without any previous symptoms presented as an emergency due to an expanding, right-side, anterior cervical mass 2 h after blunt trauma that he received during a football match. At a brief clinical examination, a soft, solid, nonpulsating tumefaction without external signs of hematoma or fluctuation and localized along the lower projection of the right sternocleido-

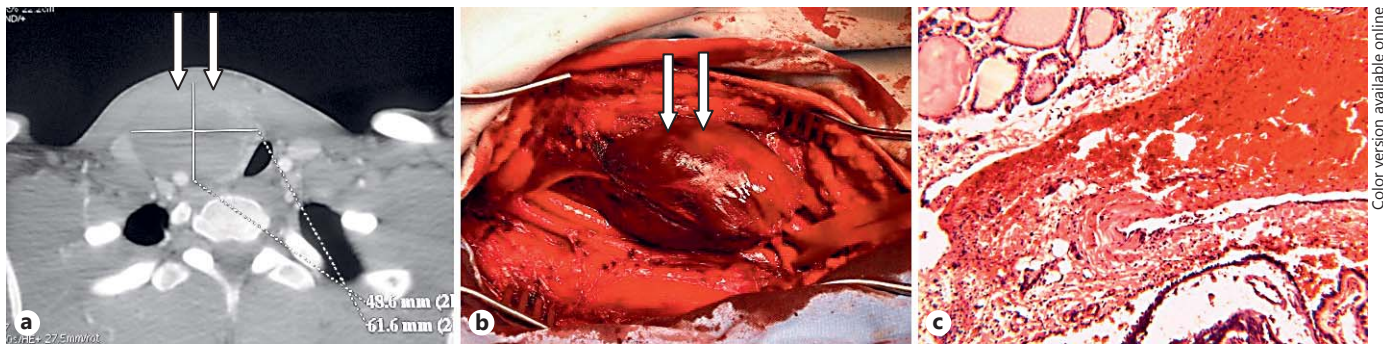


Fig. 1. **a** Contrast-enhanced multislice computed tomography scan, presenting a huge cervical mass anteriorly to the right sternocleidomastoid muscle (arrows). **b** Intraoperative finding of a solid, hematoma-like tumefaction in the right thyroid lobe (arrows). **c** Histological finding, confirming a PTC grade T₃ permeated with hematoma. HE. ×400.

mastoid muscle was diagnosed. The patient experienced hoarseness and difficult swallowing. Urgent contrast-enhanced multislice computed tomography scanning (16-slice MSCT General Electric 'Bright Speed') was performed, revealing a huge cervical mass, 62 × 49 mm in diameter, lying anteriorly to the sternocleidomastoid muscle and close to major vessels, and suspected to be an expanding hematoma (fig. 1a). The carotid artery and internal jugular vein were compressed and a significant deviation of the trachea to the opposite side was visible. Based on these findings, a vascular lesion was suspected, and, due to possible airway compression, an emergency surgical exploration was performed. However, during the exploration, neither vascular injury nor active bleeding was found. A solid, hematoma-like tumefaction in the right thyroid lobe was revealed instead (fig. 1b). Total right thyroid lobectomy was performed because we believed the lobe was affected by the trauma, resulting in a massive hematoma. There were no macroscopic signs of enlarged cervical lymph nodes. After the lobectomy, however, a medial incision of the excised lobe revealed a highly suspicious associated presence of a PTC >4 cm in diameter. Nevertheless, we decided to not perform any other surgery besides the lobectomy, in order to avoid a risk for postoperative permanent recurrent nerve palsy and hypocalcemia in the blood-embedded operative field.

A definitive histological finding confirmed a PTC grade T₃ permeated with hematoma (fig. 1c). Paraffin section examination revealed no signs of extracapsular spread of the tumor. Because the patient was 19 years old, we concluded that he was in stage I of the disease.

The patient recovered well and was discharged on the 4th postoperative day. TSH suppression therapy was in-

troduced because there were no signs of contralateral disease or lymph node involvement on high-resolution cervical ultrasonography. In the first year after surgery, follow-ups were done every 3 months and thereafter every 6 months (a total follow-up time of 30 months). At each follow-up, TSH, thyroxine, triiodothyronine, thyroglobulin and antithyroglobulin antibodies were evaluated, and were found to be within the normal range. Ultrasound examination of the contralateral lobe and neck were performed at the same time, and no signs of disease relapse were found.

Discussion

Since our patient was an emergency case of neck trauma, and thyroid tumor was revealed during surgery for a suspected expanding cervical hematoma, our choice of operative strategy was dictated by the circumstances and this was the reason we performed a hemithyroidectomy. The operative technique included meticulous dissection of the recurrent laryngeal nerve in order to identify the point of neurovascular intersection as well as preserve the vascularization of the parathyroid glands. This was a technically demanding procedure and was performed by an experienced endocrine surgeon.

There are only a few published papers about posttraumatic hematomas in healthy thyroid glands, i.e. after blunt trauma and fine-needle biopsy [5, 6]. In these cases, urgent neck exploration by all means is mandatory in order to prevent airway obstruction caused by the expanding hematoma. The loss of time due to the observation can lead to the point when intubation is difficult or even

impossible and if this is the case, the use of a fiber-optic bronchoscope or even tracheostomy is required.

Clinical experience regarding the acute presentation of previously undiagnosed PTC is limited; in the available literature, there are only 2 papers that discuss the issue [7, 8], and both were cases of PTC dissemination in adults. The first was a relatively old patient (68 years old) treated by palliative means and the second was a pregnant woman (35 years old) treated aggressively with good mid-term results. In both cases, the acute presentation was caused by distant metastases, while in our patient it was induced by local trauma.

In our case, after the histological confirmation of PTC, we did not reoperate on our patient to achieve a total thyroidectomy, although some authors do recommend routine total thyroidectomy with postoperative radioiodine treatment in spite of the possibly harmful side effects [9]. Our decision was based on the fact that, in the 30-month follow-up, we did not find any signs of recurrence or contralateral lobe or cervical lymph node involvement.

The extent of surgery of the thyroid gland in the case of PTC is still a matter of discussion. Some authors advocate routine total thyroidectomy, even with prophylactic compartment VI dissection, and we completely concur with such an approach in elective PTC surgery [10].

Our patient is being closely followed and evaluated for PTC and reoperation is still an option.

Conclusion

This was a unique case of an acute, life-threatening presentation of a previously asymptomatic PTC in an adolescent that required immediate surgical treatment.

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References

- 1 Ito Y, Kudo T, Kobayashi K, et al: Prognostic factors for recurrence of papillary thyroid carcinoma in the lymph node, lung, and bone: analysis of 5,768 patients with average 10-year follow-up. *World J Surg* 2012;36:1274–1278.
- 2 Vriens MR, Moses W, Weng J, et al: Clinical and molecular features of papillary thyroid-cancer in adolescents and young adults. *Cancer* 2011;117:259–267.
- 3 Pependieck P, Bruneiro-Papendieck L, Venara M, et al: Differentiated thyroid carcinoma: presentation and follow-up in children and adolescents. *J Pediatr Endocrinol Metab* 2011;24:743–748.
- 4 Mazzaferri EL, Kloos RT: Current approaches to primary therapy for papillary and follicular thyroid cancer. *J Clin Endocrinol Metab* 2001; 86:1447–1463.
- 5 Mollar-Puchades MA, Camara-Gomez R, Perez-Guillen V, et al: Thyroid hematoma and infectious thyroiditis after a neck injury. *Thyroid* 2006;16:421–422.
- 6 Park MH, Yoon JH: Anterior neck hematoma causing airway compression following fine needle aspiration cytology of the thyroid nodule: a case report. *Acta Cytol* 2009;53:86–88.
- 7 Kovacs CS, Nguyen GK, Mullen JC, et al: Cardiac tamponade as the initial presentation of papillary thyroid carcinoma. *Can J Cardiol* 1994;10:279–281.
- 8 Basu S, Kand P: A pregnant woman with metastatic papillary thyroid carcinoma and paraplegia: multiple considerations involved in the management. *Hell J Nucl Med* 2011;14: 320–321.
- 9 Hay ID, Gonzalez-Losada T, Reinalda MS, et al: Long-term outcome in 215 children and adolescents with papillary thyroid cancer treated during 1940 through 2008. *World J Surg* 2010;34:1192–1202.
- 10 Grant CS, Stulak JM, Thompson GB, et al: Risks and adequacy of an optimized surgical approach to the primary surgical management of papillary thyroid carcinoma treated during 1999–2006. *World J Surg* 2010;34: 1239–1246.