

Thyroid Papillary Microcarcinoma Revealed by Cystic Lymph Node Metastasis

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Abstract

Introduction: Thyroid papillary microcarcinomas revealed by cystic cervical lymph node metastasis are exceptionally observed. Cervical cystic masses are most often associated with branchial cleft cysts.

Case report: In this paper, we presented a 63 years old patient presenting an isolated lateral cervical cystic mass for which he was operated. Pathological examination of the surgical specimen found a lymph node metastasis of papillary carcinoma. The thyroidectomy performed afterwards found a papillary microcarcinoma that had gone unnoticed in the initial radiological examinations.

Discussion and Conclusion: Latero-cervical cysts are usually benign, especially in young subjects. But the possibility of a metastatic lesion, in particular of a thyroid carcinoma, must be raised before such situations, hence the value of a good diagnostic strategy.

Keywords: Thyroid Cancer; Papillary microcarcinoma; Lateral cervical cystic mass

Introduction

Thyroid microcarcinomas are defined according to the classification of the World Health Organization (WHO) as carcinomas of size less than or equal to 10 mm [1]. Because of their small size, these microcarcinomas escape cervical clinical examination and may not even be detected by imaging. Thyroid carcinomas are dominated by papillary carcinomas, which usually give metastases to the cervical lymph node. These ganglion metastases are usually solid and rarely cystic [2]. Thus, these cystic adenopathies are often interpreted as benign cystic masses [3], especially if the thyroid appears normal. The aim of this work is to report a case of papillary microcarcinoma of the thyroid revealed by a cystic ganglionic metastasis initially taken for a benign primitive cervical cystic mass, and to highlight the paraclinical features that may make these lesions suspect.

Clinical Case

A 63-year-old male patient with no history of cervical irradiation or familial thyreopathy, who has had two years of progressively enlarged and painless cervical mass with no signs of compression. The clinical examination found a right lateral cervical mass, resembling 5x3 cm, movable, without inflammatory signs (Figure 1).



Figure 1: Clinical aspect of left lateral cervical mass

No other lymph node or thyroid mass was palpated. The rest of the otolaryngological and endoscopic examination was normal. Comprehensive sonographic examination of the neck for cervical lymph nodes was performed using the LOGIQ 500 ultrasound machine with multi-frequency (7–9 MHz) linear phased-array transducers. The scanning was performed with the patient in the supine position, and with the neck hyperextended using a pad or pillow under the shoulders in order to provide optimum exposure of the neck. The parameters considered in this exam included: site, mean long axis (L), mean short axis (S), shape index (S/L), echotexture and homogeneity, margins, ancillary features like calcification, necrosis, posterior enhancement, matting and surrounding tissue changes, vascular pattern, and mean arterial resistive index (RI). The results showed two malignant lymph nodes, especially metastatic nodes, accompanied with rounded shape, homogenous echotexture, peripheral vascularity, and significantly high resistive index (RI) in front of the right jugulo-carotid pedicle, the first measuring 81 mm long and the second 39x16 mm.

The thyroid gland was of normal size, with regular and homogeneous contours without a detectable nodule on this examination (Figure 2).

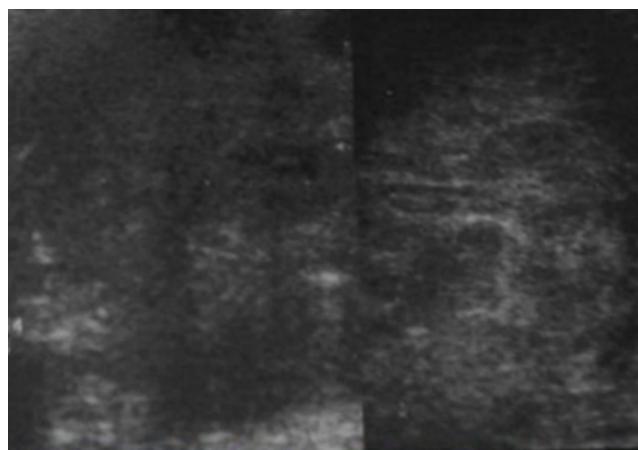


Figure 2: Ultrasound-guided image showing a heterogeneously hypoechoic lymph node.

Cervical CT has returned to a solid and cystic formation on the right III territory, with a fleshy portion that is enhanced intensely after injection of contrast agent. The thyroid gland appeared normal (Figure 3).

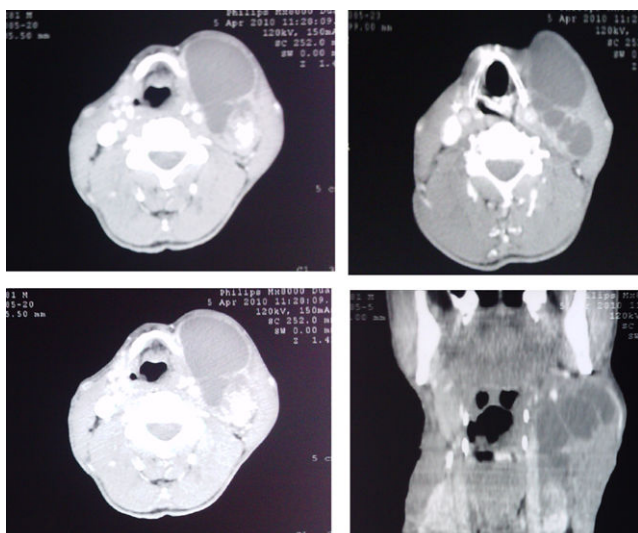


Figure 3: CT scan showing a solid cystic mass in the right III territory, with a fleshy portion that enhances intensely after injection of contrast agent.

A biopsy under local anesthesia was performed with an anatomopathological result that was negative. An exploratory cervicotomy was indicated, finding a polylobed necrotic cystic mass. A monoblock excision of the entire mass was performed. The anatomopathological study of, the mass demonstrated papillary carcinomatous proliferation and images of vascular emboli, foci of

necrosis, as well as lymph nodes in some places, evoking lymph node metastasis of papillary carcinoma (Figure 4).

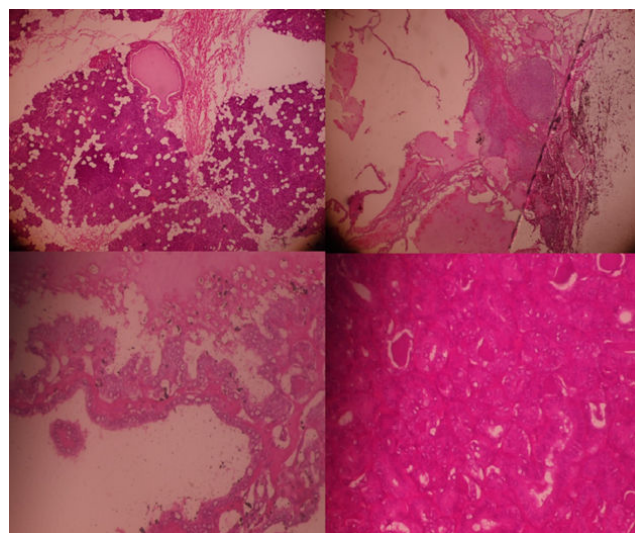


Figure 4: Papillary carcinomatous proliferation, with images of vascular emboli and necrosis foci.

In order to investigate the primary cancer, a second cervical ultrasound with the use of color Doppler sonography, was performed postoperatively, which resumed a normal-sized thyroid with regular and homogeneous contours. It also showed a right upper-hypoechoic nodule and mixed vascularization measuring 5.5x4.3 mm (Figure 5).

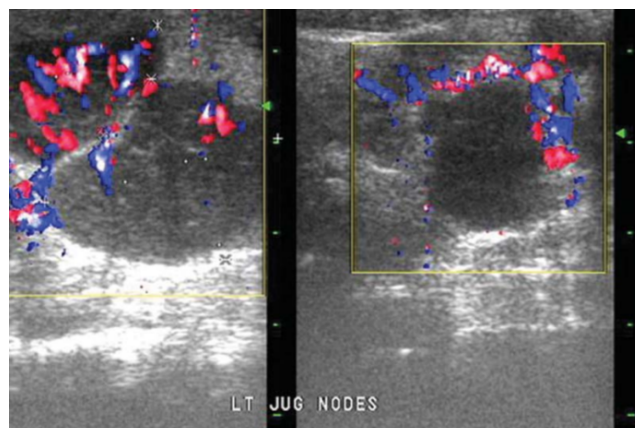


Figure 5: Ultrasound-guided image showing heterogeneously hypoechoic nodes having relatively unsharp border and a hilar vascular pattern of color Doppler imaging.

TSH used was normal at 3.24 μ IU / ml (0.27-4.2 μ IU / ml). A total thyroidectomy with recurrent and right jugular lymph node dissection was performed. The anatomo-pathological study found a papillary micro carcinoma of 5 mm of major axis without lymph node involvement. The patient was subsequently referred to the Nuclear Medicine Department for further treatment.

Discussion

Latero-cervical cysts are generally benign lesions and occur mostly in young subjects. Malignant cystic lesions are less frequent and can be secondary to tumors of the oropharynx, thyroid and salivary glands [4]. The primary tumor is usually detected by a CT scan, except in the case of small thyroid tumors, especially microcarcinomas, which may go undetected [5]. The presence of an isolated cystic latero-cervical mass, as the only manifestation of occult thyroid carcinoma, is rare. To our knowledge, only about fifty similar cases are described in the literature [6, 7]. The differential diagnosis of cystic latero-cervical metastases of thyroid carcinomas is mainly done with second branchial cleft cysts, which are classically located below sternocleidomastoid muscle [7].

According to some studies, CT may help differential diagnosis between benign cysts and cystic metastases. The presence of enhanced elements after injection of contrast agent within the cyst would be in favor of the metastatic nature of the thyroid carcinoma [8], as was the case of this patient.

Ultrasound is a useful imaging modality in the evaluation of cervical lymphadenopathy because of its high sensitivity and specificity when combined with fine-needle aspiration (FNA) cytology [9]. With the use of color Doppler sonography, the vasculature of the lymph nodes can also be evaluated which provides additional information about the nodes. It has become an effective way to obtain more information about the examined lymph nodes with no appreciable increase in the duration or invasiveness of the examination.

Recent literature has indicated the possibility of differentiating malignant from benign nodes by observing the vascular patterns on high-resolution color Doppler sonography [10]. The proposed study is an endeavor to assess the role of grayscale and color Doppler sonography in diagnostic evaluation and characterization of cervical lymphadenopathy as benign or malignant, with an acceptable degree of certainty, in order to avoid unnecessary invasive diagnostic procedures. Cervical ultrasound may also provide some evidence for the metastatic origin of cervical cystic masses, such as the presence of thick cystic walls, nodules and intracystic walls [11], as was the case with our patient who presented a multi-partitioned cyst with initial cervical ultrasound. The FNAC (Fine Needle Aspiration Cytology) allows the diagnosis of the thyroid lesion type with a diagnostic accuracy of 92-95%. It has two important limitations: inadequacy of the samples for cytology and follicular proliferation [12]. The cytopunction allows a histological orientation of the cervical masses, especially in case of solid adenopathies. However, it does not have the same efficacy in cystic masses [13], and may not find malignant cells in real cystic lymph node metastases with a false negative rate of 50% [7]. The determination of thyroglobulin in the aspirated liquid of the cyst associated with cytology can improve the preoperative diagnosis of cystic metastases of thyroid carcinomas, thus avoiding the need for further complementary examinations. Indeed, the high concentration of thyroglobulin in the aspirated fluid would be specific to papillary carcinoma metastases [7]. Treatment of such lesions consists of total thyroidectomy with a suitable lymph node dissection for the stage of the tumor. Radioiodine therapy is recommended for patients with lymph node metastasis, even for the microcarcinomas according to the latest recommendations of the American Thyroid Association, which classify these patients as being at intermediate risk [6].

Conclusion

Latero-cervical cysts are usually benign, especially in young subjects. But the possibility of a metastatic lesion, in particular of a thyroid carcinoma, must be raised in such situations hence the value of a good diagnostic strategy based on the clinical, radiological and cytological description of adenopathies.

Conflicts of Interest

The authors do not declare any conflicts of interest.

Contributions by Authors

All authors contributed to the writing or the correction of this work.

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