

Atypical cervical mass

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ABSTRACT

Hemoptysis as first sign of a thyroid differentiated cancer represents an atypical behavior of a cervical mass, usually associating lung metastasis or direct tracheal invasion. Late presentation (for instance, due to COVID-19 pandemic circumstances) associates a poor prognosis. This is a case report. We aim to introduce a 70-year old female case who was admitted for an atypical cervical mass associating hemoptysis as onset; the diagnostic of metastatic papillary thyroid cancer was established; the delay of hospital admission did not allow a radical intervention with curative purpose. The lady was admitted as an emergency for an endocrine checkup of a progressively growing cervical mass in addition to hemoptysis that developed a few weeks before. Specific blood endocrine panel confirmed the normal thyroid function with negative thyroid autoimmunity. Anterior cervical ultrasound showed intensely hypoechoic, inhomogeneous, large structure, with macro-calcifications (TIRADS 5). Fine needle aspiration cytology exam revealed a papillary carcinoma of thyroid, consistent with Bethesda 6 score. Computed tomography detected a voluminous thyroid tumor process of 92 by 58 by 89 mm. The superior, middle and inferior left later-cervical lymph nodes which are located posterior to the later-cervical vascular package, have maximum diameters of approximately 30/34 mm (axial) and 54 mm (vertical). Multiple micro-nodules of oval form in both lungs have diameters up to 29 mm (probably secondary lesions). Osteolytic tumor lesion at the level of the lateral arch of the vertebral body thoracic T1 and the head of the left first rib extends to the level of the left foramen from the spaces cervical C7 to thoracic T1, respective between thoracic T1 and T2, with maximum diameters of 23/32 mm. CT also showed brain metastasis, as a iodophil, inhomogeneous, well-contoured tumor that is located on the right frontal precentral gyrus, with maximum diameters of 10/13 mm (axially) and 13 mm (vertically) and small areas of perilesional edema. Further adjuvant therapy was refused by the patient; palliative tracheostomy is needed. Atypically aggressive presentation of well differentiated thyroid cancer of papillary type might be associated with delayed presentation; whether this comes as direct consequence of pandemic era is still a matter of debate.

Keywords: thyroid, thyroid cancer, thyroid nodule, thyroid neoplasia, nodule, tumor, endocrine tumor, papillary thyroid cancer, fine needle aspiration, hemoptysis, thyroidectomy, TSH, endocrine emergency, cytological report, lung metastases

INTRODUCTION

Hemoptysis as first sign of a thyroid cancer represents an atypical behavior of a cervical mass, usually associating lung metastasis or direct tracheal invasion (1,2,3). Late presentation (for instance, due to COVID-19 pandemic circumstances) associates a poor prognosis (4,5,6).

AIM

We aim to introduce an adult female case who was admitted for an atypical cervical mass associating hemoptysis as onset presentation; the diagnostic of metastatic papillary thyroid cancer was established; the delay of hospital admission did not allow a radical intervention with curative purpose.

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Article History:
Received: 20 November 2021
Accepted: 28 November 2021

METHOD

This is a case report. While hospitalized, the subject agreed for the use of her medical data and records. The patient was admitted amid first year of pandemic (2020).

CASE PRESENTATION

On admission

This is 70-year old, non-smoking female coming from non-endemic area, who was admitted as an emergency for an endocrine checkup of a progressively growing cervical mass in addition to hemoptysis that developed a few weeks before. The personal medical history includes: poly-nodular goiter since 1999 (normal thyroid function), type I2 diabetes mellitus since 2015 (complicated with visual disturbances) treated with oral anti-diabetic drugs. Clinical exam showed a neck tumor with compressive effects and clinically euthyroidism. Otorhinolaryngology evaluation found a left vocal cord that was quasi-completely fixed at para-median level, no signs of active bleeding, but past bleeding stigma.

Investigations

The biochemistry panel showed hypercholesterolemia and hyperglycemia with high HbA1c (glycated hemoglobin A1c) and a mild inflammation syndrome (Table 1).

TABLE 1. Biochemistry panel of 70-year old female admitted as an emergency for a large neck mass

Parameter	Value	Normal ranges	Units
ALT (alanine aminotransferase)	16	9-52	U/l
AST (aspartate aminotransferase)	16	14-36	U/l
Ionic serum calcium	4.12	3.9-4.9	mg/dl
Total serum calcium	10.2	8.5-10.2	mg/dl
Phosphorus	3.9	2.5-4.5	mg/dl
Alkaline phosphatase	55	38-105	U/l
Fasting glucose	176	70-100	mg/dl
HbA1C (glycated hemoglobin A1c)	6.89	4.8-5.9	%
HDL - cholesterol	81	40-65	mg/dl
LDL - cholesterol	126	60-160	mg/dl
Triglycerides	117	50-200	mg/dl
Total cholesterol	230	0-200	mg/dl
Serum potassium	4.8	3.5-5.2	mmol/l
Magnesium	1.6	1.6-2.4	mg/dl
Sodium	141	137-145	mmol/l
Uric acid	3.7	2.5-6.2	mg/dl
Urea	31	15-50	mg/dl
Creatinine	0.5	0.5-1.1	mg/dl

Parameter	Value	Normal ranges	Units
ESR (erythrocyte sedimentation rate)	40.9	1-25	mm/1-hour
Fibrinogen	629.703	200-500	mg/dl
INR (international normalized ratio)	1.130	0.85-1.25	
AP (activated prothrombin)	91.457	70-140	%
PT (prothrombin time)	12.450	9-13.5	seconds

Specific blood endocrine panel confirmed the normal thyroid function with negative thyroid autoimmunity, and mild hypovitaminosis D (Table 2).

TABLE 2. Endocrine assessments of a 70-year old female with voluminous goiter underlying metastatic papillary cancer

Parameter	Value	Normal ranges	Units
TSH (thyroid stimulating hormone)	0.92	0.5-4.5	μU/ml
FT4 (free levothyroxine)	15.04	9-19	pmol/l
ATG (anti-thyroglobulin antibodies)	10	0-115	U/ml
Plasma calcitonin	1	1-4.8	pg/ml
25OHD (25-hydroxyvitamin D)	17	30-100	ng/ml
PTH (parathormone)	30.14	15-65	pg/ml
Chromogranin A	38.1	20-100	ng/ml
Plasma metanephrines	32.5	10-90	pg/ml
Plasma normetanephrines	99.02	15-180	pg/ml

Anterior cervical ultrasound showed intensely hypoechoic, inhomogeneous structure, with macro-calcifications (with posterior shadow cone); suggestive aspect of malignant transformation (TIRADS 5), later-cervical lymphadenopathy cannot be evaluated due to goiter volume. Fine needle aspiration cytology exam at the level of right lobe, isthmus, respective left lobe detected numerous follicular epithelia with compact, trabecular disposition, isolated papillary cells with conjunctival axis, with aspect of intra-follicular multilayer pattern, nuclear clearing, pseudo-inclusions, with anisokaryosis with angled nuclei, and marked syn-cellular agility, quantitatively reduced colloid; the largest nodule with consistent proliferative risk (well differentiated follicular aspect which is highly suggestive for a papillary carcinoma of thyroid) consistent with Bethesda 6 score.

Computed tomography (CT) imaging of the neck and mediastinum showed: voluminous thyroid tumor process extended in both lobes and at the isthmus levels, it has maximum diameters of approximately 92 mm (transverse), 58 mm (anterior-posterior) and 89 mm (vertical). The left lobe descends from the para-pharyngeal space of the hypopharynx, imprints the piriform sinus, it has the lower pole at the stern-clavicular joint. The right

lobe descends from the right piriform sinus to the stern-clavicular joint. The thyroid gland compresses the cervical trachea and reduces its anterior-posterior lumen to 4-5 mm. The superior, middle and inferior left later-cervical lymph nodes which are located posterior to the later-cervical vascular package, have maximum diameters of approximately 30/34 mm (axial) and 54 mm (vertical). Left para-tracheal lymphadenopathy located at poster-inferior level has maximum diameters of 20/17 mm (axial) and 28 mm (vertical). No intra-tracheal or laryngeal extensions were visualized. The left later-cervical vascular bundle is displaced posterior-laterally. The pulmonary parenchyma is expanded to the level of the bilateral chest walls. Multiple micro-nodules of oval form in both lungs have diameters up to 29 mm (probably secondary lesions). No pleural-pericardial fluid accumulation. Osteolytic tumor lesion at the level of the lateral arch of the vertebral body thoracic T1 and the head of the left first rib extends to the level of the left foramen from the spaces cervical C7 to thoracic T1, respective between thoracic T1 and T2, with maximum diameters of 23/32 mm. CT showed brain metastasis, as a iodophil, inhomogeneous, well-contoured tumor that is located on the right frontal precentral gyrus, with maximum diameters of 10/13 mm (axially) and 13 mm (vertically) and small areas of perilesional edema (Figure 1).

Management

Total thyroidectomy with intention to completely remove the thyroid cancer was not feasible at this point. The patient decided to not further go for adjuvant medication.

DISCUSSIONS

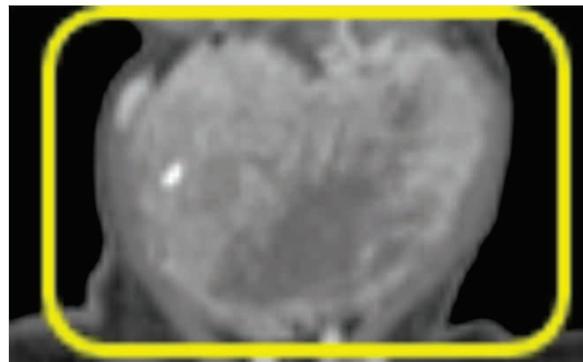
On this particular case, the following aspects are important to be mentioned.

Hemoptysis as atypical presentation of a papillary thyroid cancer

Hemoptysis due to tracheal invasion or lung metastases has been reported in papillary thyroid cancer which usually does not have a very invasive potential, neither a rapidly aggressive evolution in majority of cases. (7,8,9). Hemoptysis as sign of invasive carcinoma requires second line oncologic therapy, for instance, with tyrosine kinase inhibitors (10). In this particular case, the patient did not agree with any further intervention or medical approach. Stenting for airways stenosis is a potential alternative for selective cases (11-17). In advanced case (as here), palliative tracheostomy is needed (10-18).



A



B

FIGURE 1. Computed tomography scan: aspects of metastatic papillary thyroid cancer of a 70-year old female.

A. Coronal plan of neck area; B. Coronal plan of neck and thorax

Delayed presentation

The patient was admitted during the first year of pandemic (2020) and she delayed her presentation due to lockdown/restrictions that were associated with the country's medical and social protocols, as seen anywhere in Europe at that point. Delaying the presentation represents a stepping stone in such case management since the adequate moment of surgery with intention of completely tumor removal is lost (18,19,20).

Aggressive thyroid cancer

Despite the fact that papillary thyroid cancer is among the most frequent types of thyroid cancer underlying thyroid nodules, this is not by far the most aggressive (21,22,23). Some drugs against dia-

betes mellitus like GLP1 inhibitors (which were present in our case) seem protective for this type (24). Undifferentiated or poorly differentiated or anaplastic thyroid cancers have the most severe prognostic (25,26,27). Other forms which are not derivate from follicular cells like primary thyroid angiosarcoma, some histological types of primary thyroid lymphoma or advanced medullary thyroid cancer are also extremely aggressive (28,29,30).

CONCLUSION

Atypically aggressive presentation of well differentiated thyroid cancer of papillary type might be associated with delayed presentation; whether this comes as direct consequence of pandemic era is still a matter of debate.

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