

Papillary Thyroid Carcinoma with cribriform type muscle metastasis.

Abstract.

The papillary thyroid carcinoma is the most common endocrinologic neoplasm. Only the 10% of all patients have metastasis, however as high as 50% of all will have metastasis at the moment of the diagnosis. Lung and bone being the primary organs affected, only 5% are in other areas of the body. The Gold Standard for the diagnosis is the high-resolution ultrasound of the thyroid complementing with fine needle puncture-aspiration assessment, which help us in the decision making.

Keywords: Cribriform, metastasis, muscle, carcinoma, papillary, thyroid.

Introduction.

Papillary thyroid carcinoma is the most frequent malignant tumor in thyroid neoplastic processes, representing 85-95% of all cases, with a higher incidence in women¹; Worldwide, 230,000 cases were reported in women and 70,000 cases in men, this pathology has taken on clinical relevance since the incidence has tripled in the last 10 years². The morular cribriform variant (MCV) is a low-incidence histological subtype, corresponding to 5% of all papillary carcinomas, associated with the Wnt gene mutation, closely related to subjects affected by familiar colonic adenomatous polyposis; the sporadic ones represent only 2% of this histological lineage³. 90% of patients comes to the doctor with localized cervical metastases and only 10% suffer distant metastases, which usually have a poor survival, since 70% are usually refractory to treatment with radioactive iodine⁴.

In 50% of cases, distant metastases are found at the time of diagnosis⁴. The most frequent location is usually in the lung (50%), bone (25%), both (20%) and in other sites (5%)⁴.

The gold standard for the diagnosis of this entity is high-resolution ultrasound and fine needle biopsy (FNB)⁵. Among the findings are microcalcifications known as psammoma bodies, the most specific characteristic of malignancy, with a positive predictive value of up to 95%⁵. The rest of the characteristics are evaluated using the scale proposed by Horvath et al. in 2009, known as TI-RADS (Thyroid Imaging Reporting and Data System) (Table 1), which has a sensitivity of 85% for the detection of malignant tumors⁶.

Hipoecogenicity
Microcalcifications
Partially cystic nodule and lobulations of the solid component.

Irregular edges.
Invasion of the perinodular thyroid parenchyma
Configuration taller than wide.
Intranodal vascularization.

Table 1. TI-RADS6 malignancy criteria.

Computed axial tomography with contrast medium is the method of choice to identify locally or advanced disease, involving the cervical and thoracic lymph nodes, as well as distant metastases⁷. Another improved method used is positron emission tomography (PET) with F18-fluorodeoxyglucose (FDG), as it helps to better delineate areas of metastasis to solid organs and lymph nodes⁷.

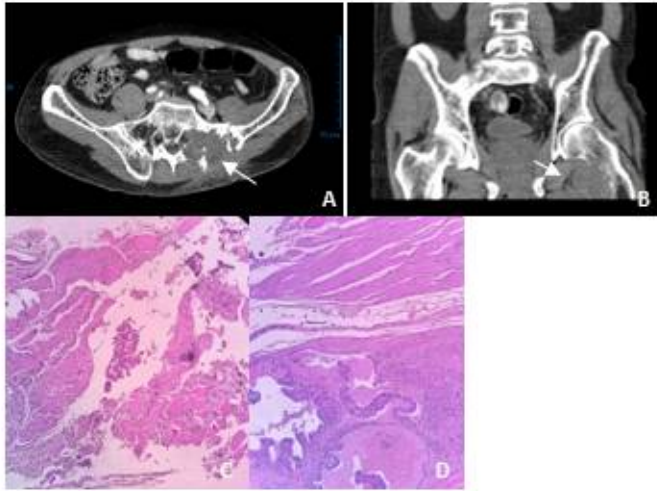
Case presentation

A 62-year-old male patient, who came to the clinic due to disabling pain in the left sacroiliac region that extended to the entire pelvic limb, underwent a pelvic x-ray (Figure 1), visualizing a lesion with soft tissue radiopacity located in the left gluteal region, without involvement or dependent of adjacent bone structures.



With this finding, it was considered a sarcoma type tumor of the gluteal region, it was decided to perform a tomography (Image 2) visualizing a lesion dependent of the muscle planes in the left gluteal region, which causes destruction of the femur cortex, as well as sacral vertebrae and ipsilateral iliac spines, extending towards the sacroiliac joint. Given this result, a Tru-cut biopsy was taken (Figure 2) where metastatic papillary carcinoma with cribriform pattern areas was reported.

Discussion



However, the tomography shows a nodular mass in both lobes of the thyroid gland, an ultrasound approach was decided (Figure 3) where a heterogeneous nodule was found, predominantly hypoechoic, with thick calcifications inside and significant central and peripheral vascularity upon application of the Color Doppler in the thyroid gland, which

corresponds to TI-RADS 4 category.

With the diagnosis of TIRADS 4 and with the measurements of the nodule, it was concluded that it was necessary to perform BAAF, resulting in papillary thyroid carcinoma (Image 4), with tall cell and oncocytic patterns (Hürthle cells).

Conclusion:

Papillary thyroid carcinoma is the most frequent endocrinological malignancy, representing up to 95% of which up to 50% will debut with distant metastases, with the lung and bone being the most affected organs; The relevance of this case lies in the fact that metastases to muscle planes are extremely rare, which is why it initially made us think of a sarcoma. However, based on the findings of the extension study, it was possible to determine that it corresponds to thyroid tumor metathesis. In the case of tumors of muscle planes that do

not present typical characteristics of primary tumors, a possibility of metastasis should be considered.

References :

1. Itzel C, Díaz H, Alejandro, Caballero S. Thyroid Cancer [Internet]. Available from: https://endocrinologia.org.mx/pdf_cet/mod_09_presentacion.pdf.
2. Herrera Díaz CI, Sosa Caballero A. Thyroid Diseases Course for First Contact Medical Care [Internet]. Sosa Caballero, editor. Endocrinology. Mexican Society of Nutrition and Endocrinology; 2013 [cited 2022 Jul 1]. Available from: https://endocrinologia.org.mx/pdf_cet/mod_09_documento.pdf.
3. González DP. Clinical and molecular study of the cribriform-morular variant of papillary thyroid carcinoma [Internet]. dialnet.unirioja.es. 2016 [cited 2022 Jun 30]. Available from: [https://dialnet.unirioja.es/servlet/tesis?codigo=126845#:~:text=La%20variante%20cribiforme%20morular%20\(VCM.have%20described%20also%20casos%20esporádicos.](https://dialnet.unirioja.es/servlet/tesis?codigo=126845#:~:text=La%20variante%20cribiforme%20morular%20(VCM.have%20described%20also%20casos%20esporádicos.)
4. Schmidt A, Cross G, Pitoia F. Distant metastasis in differentiated thyroid cancer: diagnosis and treatment. Argentine Journal of Endocrinology and Metabolism. 2017 Apr;54(2):92–100.
5. Hoang JK, Lee WK, Lee M, Johnson D, Farrell S. US Features of Thyroid Malignancy: Pearls and Pitfalls. RadioGraphics. 2007 May;27(3):847–60.
6. Fernández Sánchez J. TI-RADS classification of thyroid nodules based on a modified scoring scale with respect to ultrasound criteria of malignancy. Argentine Journal of Radiology [Internet]. 2014 Jul;78(3):138–48. Available from: https://www.webcir.org/revistavirtual/articulos/noviembre14/argentina/arg_clasificacion_tirads.pdf.
7. Brauckhoff K, Biermann M. Multimodal imaging of thyroid cancer. Current Opinion in Endocrinology, Diabetes & Obesity. 2020 Aug 6;27(5):335–44.