Concomitant long evolving neuroendocrine breast carcinoma and pancreatic tumor - a random association?

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Introduction

Breast neuroendocrine carcinoma is a rare aggressive neuroendocrine tumor (NET).
Its incidence increased in the last period, from less than 0.4% to 3.4% of all breast carcinomas.
According to the World Health Organization (WHO) classification of tumors neuroendocrine tumor in the breast is a category that includes solid neuroendocrine carcinoma, small cell/loast cell carcinoma and large cell neuroendocrine carcinoma.

Case report

Female patient, aged 73

Presented at the Endocrinology Department with the following symptoms:
- Intense lumbar pain that radiates to the right anterior subcostal region;
- Loss of appetite; weight loss (15 kg in 2 months);
- Persistent dry cough

Medical history:
- 1970: nodular goiter (operated in 1977 - subtotal thyroidectomy);
- 1999: diabetes mellitus type 2 (October 2011 it requires insulin administration);
- 1999: hypertension (max systolic BP = 230 mmHg);
- 2008: angina pectoris;
- 2011:
  - Thoracic CT: suspicion of sarcoidosis; mediastinal lymph node in the hilum and right lung, nodule in the left hilum of 27/25/36 mm, multiple pulmonary parenchymal nodules (<1 cm) in the upper segment of the left lung.
  - Bronchoscopy with biopsy: epithelioid gigantom-cellular granuloma with central necrosis, + for CD-88
  - 2012: Thoracic control CT – stationary aspect
  - 2013:
    - Abdominal CT
      - An area in the pancreas at the isthmus, measuring 21/20 mm
      - Dilated Wirsung duct (5-6 mm);
    - CA-50 = 14 U/mL; N=25 U/mL
  - Without further investigations
  - Mammography: Mammary gland fibroadenoma

January 2014 (due to intense lumbar pain):
- Lumbar-sacral spinal MRI: secondary disseminations in the dorsal and lumbar-sacral vertebrae (fig 1)
- 2008: angina pectoris

January 2014:
- Abdominal CT: intraductal pancreatic lesion with secondary disseminations in the liver, spleen and bone

March 2014:
- Abdominal ultrasound: slightly enlarged liver with metastases; in the pancreas a hipoechoic nodule in the isthmus and body, measuring 57/29 mm; in the splenic hilum 2.3 hipoechoic nodules (fig 6).
- Thoracic X-ray: right hilar lymphadenopathy 1.5 mm, old postcortical rib fractures C5-C8, osteolytic lesions of 0.5 cm - left posterior C4, anterior ligament calcification, dorsal oesothorax (fig 7).

Laboratory findings

<table>
<thead>
<tr>
<th></th>
<th>Results</th>
<th>Normal range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromogranin A (ng/mL)</td>
<td>141.8</td>
<td>0 – 100</td>
</tr>
<tr>
<td>Serotonin (ng/L)</td>
<td>990</td>
<td>50 – 200</td>
</tr>
<tr>
<td>S-HIAA (ng/24h)</td>
<td>0.2</td>
<td>2-10</td>
</tr>
<tr>
<td>CA15-3 (U/ml)</td>
<td>160</td>
<td>0 – 38.4</td>
</tr>
<tr>
<td>CEA (ng/ml)</td>
<td>31.5</td>
<td>0 – 1.5</td>
</tr>
</tbody>
</table>

Results

Breast ultrasound:
In the left breast (5 cm from the nipple) multiple solid nodules with a maximum diameter of 10 mm, with coarse calcifications.
- CA15-3, CEA = Breast cancer

Morphopathology investigations
- Biopsy from one lesion in the liver: metastasis of poorly differentiated carcinoma
- Immunohistochemistry: intense + for Cytokeratin-7, weak/moderate + for chromosome, - for synaptophysin, Cytokeratin-20, weak/moderate + for estrogen receptor in 50-60% of cells: CARCINOMA OF THE MAMMARY GLAND WITH NEUROENDOCRINE FEATURES

Diagnosis
- Carcinoma of the mammary gland with neuroendocrine features
- Probable pancreatic neuroendocrine tumor
- Metastasis in the liver, lung and bone

Oncology evaluation
- The oncology evaluation staged the tumor: cT2NOM1 (liver, lung, bone), ECOG performance status 4.
- Treatment: somatostatin analogues (sandostatin lar ®), zolodronic acid, aromatase inhibitors.

In March 2014, due to pulmonary complications, the patient died.

Discussions

- Long asymptomatic evolution or misdiagnosis?
- Bone pain
- Difficult balancing diabetes
- Chronic respiratory insufficiency
- The period of 3 years of treatment for sarcoidosis
- But with the enhancement of respiratory symptoms and bone pain.
- Are there correlations between breast neuroendocrine carcinoma and pancreatic neuroendocrine tumors?
- There are no similar cases reported in the literature.

Conclusions

- The peculiarity of the case:
  - The association of:
    - Breast carcinoma with neuroendocrine features
    - Probable pancreatic neuroendocrine tumor
  - Evolving for a long period of time in the past
  - Which was initially considered and treated as sarcoidosis.

References: