Incidental diagnosis of breast cancer with an axillary metastatic lymph node by $^{99m}$Tc-EDDA/HYNIC-Tyr(3)-octreotide in a patient with gastric neuroendocrine tumour

Diagnóstico casual de un cáncer de mama con una adenopatía axilar metastásica mediante $^{99m}$Tc-EDDA/HYNIC-Tyr(3)-octreotido en un paciente con tumor neuroendocrino gástrico

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We report the case of an 84-year-old woman with no oncological history and dyspepsia as a major symptom. The patient underwent a fibrogastroscopy and a biopsy of gastric antrum and lesser curvature (Fig. 1A) resulting in well differentiated neuroendocrine tumour of the gastric antrum (low nuclear grade, Ki 67 <5%, positivity for CK AE1, CK AE3, enolase, chromogranin A and synaptophysin). One month later, a somatostatin receptor scintigraphy (SRS) with 803 MBq of $^{99m}$Tc-EDDA/HYNIC-Tyr3-octreotide (Fig. 1B) was performed (imaging acquisition 10 cm/min up to upper thigh). The scan did not detect gastric neuroendocrine tumour or other abdominal lesions; however it showed a left breast lesion in the upper outer quadrant and an ipsilateral axillary lymphadenopathy at first level both with moderate radiotracer uptake. These findings were more evident on chest SPECT/CT (30 s/3 degrees, 128 × 128 matrix, 25 mA, 140 kV and 10 mm CT slice thickness) (Fig. 1C). The mammography subsequently performed characterized the left breast lesion as BIRADS 5, with a size of 26 mm. It also showed ipsilateral lymph nodes, the largest of 13 mm, coinciding with that detected in SRS. Tru-cut biopsy was performed resulting in classic ductal carcinoma with signet ring cells (positivity for hormone receptor, her2 and E-cadherin, negativity for p53 and Ki67 20%). In addition a fine needle aspiration

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Fig. 1. (A) Gastroscopy shows a small ulcer (black arrow) and antral mucosal biopsy reported neuroendocrine tumour. (B) $^{99m}$Tc-EDDA/HYNIC-Tyr3-octreotide planar scan shows the breast cancer (vertical arrow) and adenopathy (small arrow) and (C) SPECT/CT images show the breast neoplasm (top) and the adenopathy (bottom), both with moderate radiotracer uptake. (D) Planar lymphoscintigraphy (top) and SPECT/CT imaging (bottom) showing the sentinel lymph node with slight uptake of $^{99m}$Tc Nanocoll.
of the left axillary adenopathy was performed resulting in reactive follicular hyperplasia. So the patient underwent stereotactic breast tumour resection and sentinel lymph node biopsy. The final results confirmed the histologic diagnosis of breast cancer, whereas the sentinel node, which showed slight uptake of $^{99m}$Tc-Nanocoll (Fig. 1D), presented by OSNA macrometastases ($6.2 \times 10^4$ CK19 mRNA copies) with capsular overflow and metastatic infiltration of periganglionar fat.

The SRS allows the diagnosis and staging of well differentiated neuroendocrine tumours. In the process of diagnosing these patients, we could find accidentally second tumours expressing somatostatin receptors at lungs, lymphatic system, central nervous system and breast, which usually has a high incidence of somatostatin receptor expression,\(^1\)–\(^3\) especially the SSTR2.\(^2\)\(^,\)\(^3\) When a breast lesion shows somatostatin receptor expression a characterization and study are required in order to proceed to the most optimal diagnostic and therapeutic approach to the patient to avoid false positive results like fibroadenoma.\(^3\) Some authors have not found any association between breast cancer subtype and density of somatostatin receptors,\(^1\) and even they have not found relation between somatostatin receptors expression and oestrogen and progesterone hormonal status. However other authors have described that there are some patients who express both oestrogen and somatostatin receptors,\(^2\) and this can have an impact on the diagnosis and treatment of these patients.

The expression of somatostatin receptors by a breast lesion requires further study for final characterization.

**References**