

## Images in Clinical Rheumatology

### Lumbar Pain as the Single Manifestation of an Occult Breast Cancer. Usefulness of Positron Emission Tomography<sup>☆</sup>



### Dolor lumbar como única manifestación de un cáncer oculto de mama, utilidad de la tomografía por emisión de positrones

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#### ARTICLE INFO

##### Article history:

Received 14 December 2013

Accepted 20 February 2014

Available online 6 June 2014

A 68-year-old female patient with spondylolysis, fibromyalgia, osteoporosis and recent BI-RADS I (negative mammogram malignancy without nodules or calcifications) mammography screening presented lumbar pain after physical overexertion, with a vertebral crush fracture on D7 and normal laboratory tests (tumor, bone metabolism markers and acute phase reactants). Subsequently, given the progressive worsening, an extension study with bone scintigraphy (BS), computed tomography (CT) and magnetic resonance imaging (MRI) was performed, showing lesions suggestive of an infiltrative process in the D6, D7, D10 and L5 vertebral bodies and nonspecific left axilla lymphadenopathy, without a clear primary origin (Fig. 1). Finally, she was studied using positron emission tomography (PET) to identify a small nodule in the lateral and deep region of the left breast, with pathology findings suggesting a metabolic origin (Fig. 2), which led to an ultrasound-guided biopsy and a histological diagnosis of moderately differentiated infiltrating ductal carcinoma (Fig. 3). Hormonal treatment and lumpectomy of the nodule as well as left axillary lymphadenectomy was performed with a good outcome.

The spine is the most common site of bone metastases; it is estimated that about 10% of cancer patients develop spinal metastases (>50% multilevel metastases), especially associated to carcinoma of

the breast, prostate and lung. While up to 36% of spinal lesions may be asymptomatic, low back pain secondary to a pathologic fracture is the predominant symptom.<sup>1,2</sup>

Occult breast cancer consists in the appearance of a metastatic axillary lymph node, without a clinically and radiologically primary breast tumor; this is rare, and described in 0.3%–0.8% of all breast tumors.<sup>3,4</sup>

The first images, during the initial approach, are based on plain x rays. However, in most cases these findings are often nonspecific, making the use of other complementary imaging tests such as GO, CT, MRI and PET for providing great help in determining the cause of vertebral involvement.<sup>5</sup> Of these, PET will identify lesions with an abnormal metabolism without an objective anatomic abnormality (sensitivity 62%–100% and specificity 96%–100%).<sup>6</sup> As for hidden breast cancer, the detection of such small lesions allows for the diagnosis when other conventional imaging tests do not lead to identification.<sup>7,8</sup>

#### Ethical Responsibilities

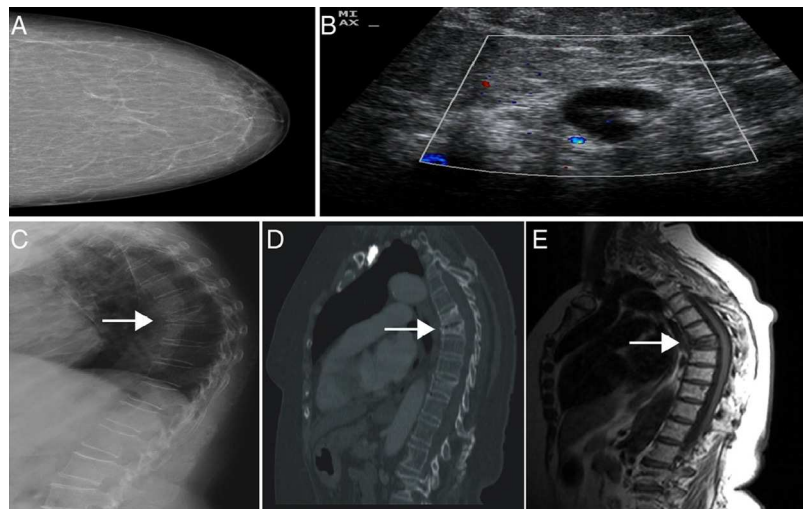
**Protection of people and animals.** The authors declare that this study did not perform experiments on humans or animals.

**Data confidentiality.** The authors declare that they have followed the protocols of their workplace on the publication of data from patients, and all patients included in the study have received sufficient information and gave written informed consent to participate in the study.

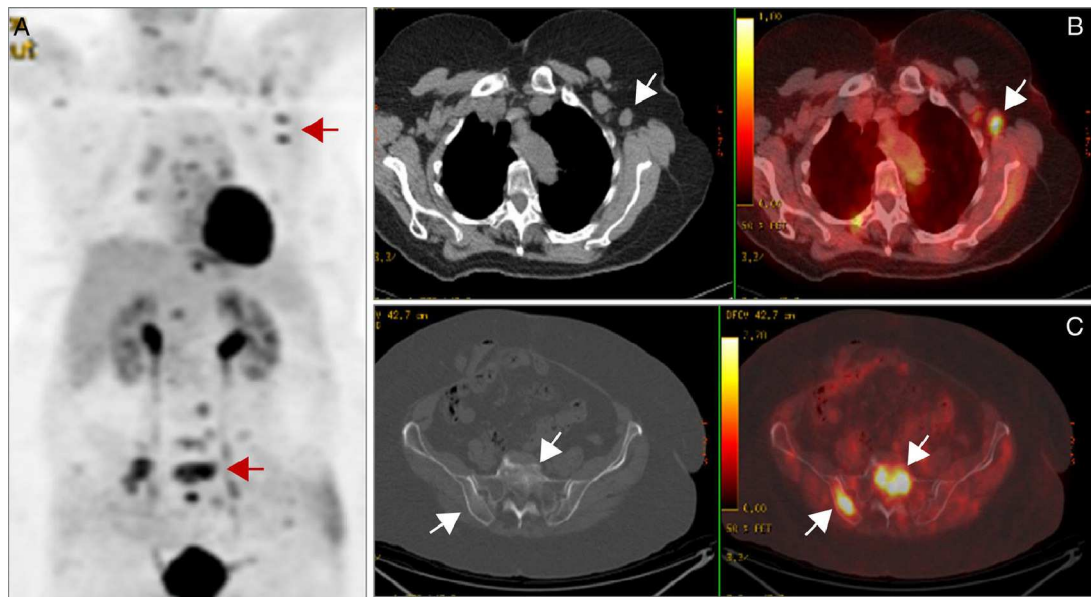
<sup>☆</sup> Please cite this article as: Ramírez Huaranga MA, Salas Manzanedo V, Huertas MP, Torres Sousa Y, Ramos Rodríguez CC. Dolor lumbar como única manifestación de un cáncer oculto de mama, utilidad de la tomografía por emisión de positrones. Reumatol Clin. 2015;11:118–120.

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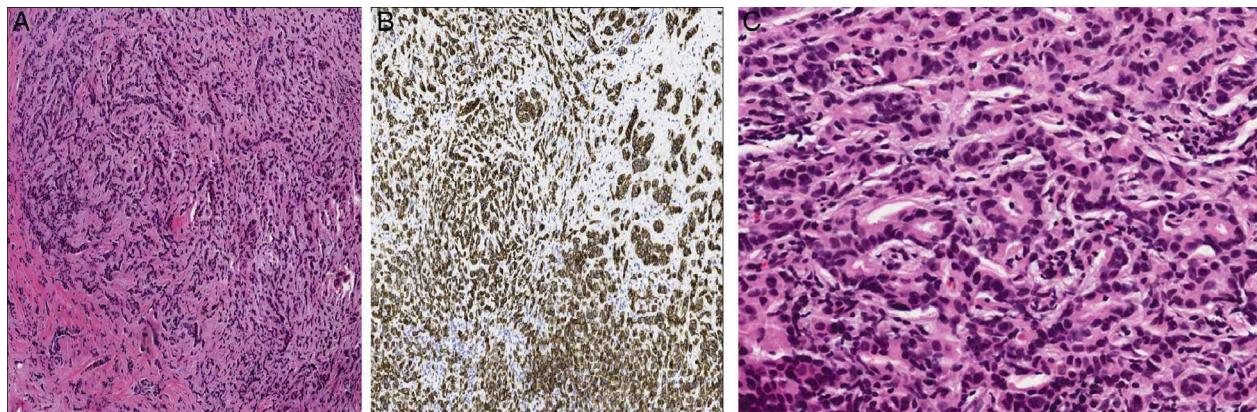
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**Fig. 1.** (A) Mammography BIRADS I. (B) Adenopathy with cortical thickening suspicious of metastasis. (C–E) A D7 vertebral fracture with a sclerotic pattern is seen in the sagittal CT and a hypointense signal on MR imaging T1.



**Fig. 2.** (A) Pathological uptake in the T6 level of vertebral bodies and at the level of left axillary lymphadenopathy. (B and C) A positive correlation between bone and lymph nodes with an increase of metabolic activity in the PET is observed.



**Fig. 3.** (A) Hematoxylin–eosin (4×); tumor cells with hyperchromatic nuclei are observed. (B) Immunohistochemical staining (4×) cells with expression of E-cadherin, surrounded by a desmoplastic stroma. (C) At higher magnification (20×), other areas of the cylinder forming gland precursors infiltrating the interstitium, which is fibrous and shows an inflammatory reaction, may be seen.

**Right to privacy and informed consent.** The authors state that patient data does not appear in this article.

### Disclosures

The authors have no disclosures to make.

### References

1. Togawa D, Lewandrowsky U. The pathophysiology of spinal metastases. In: McLain RF, editor. *Cancer in the spine*. Current clinical oncology. Cleveland: Springer eBooks; 2006. p. 17–23.
2. Pirici E, Pirici A, Patrana N, Recareanu F, Badulescu FL, Crisan AE, et al. Vertebral bone metastasis in breast cancer: a case report. *Rom J Morphol Embryol.* 2011;52:897–905.
3. Paholpak P, Sirichativapee W, Wisanuyotin T, Kosuwon W, Jeeravipoolvarn P. Prevalence of known and unknown primary tumor sites in spinal metastasis patients. *Open Orthop J.* 2012;6:440–4.
4. Luna MA, Sánchez-Méndez S, Mariscal A, Viscaya S, Vallejos V, Solá M, et al. Cancer oculto de mama: caso clínico y revisión de la literatura. *Clin Invest Gin Obst.* 2012;39:21–8.
5. Farrerons J, Malouf J, Laiz A, Longobardi V. Protocolo de actuación diagnóstica y terapéutica ante una fractura vertebral. *Medicine.* 2006;9:3913–5.
6. Gámez C, Sabaté A, Narváez JA, Rodríguez L, García FJ. La tomografía por emisión de positrones asociada con la tomografía computarizada en tumores del aparato locomotor. *Radiología.* 2012;54:3–13.
7. Gil EM, Sánchez A, Moya F, González P. Hallazgos con PET de cáncer de mama primario en mujer con tumor de origen desconocido. *Rev Esp Med Nucl.* 2004;23:206.
8. Takabatke D, Taira N, Aogi K, Ohsumi S, Takashima S, Inoue T, et al. Two cases of occult breast cancer in which PET-TACK was helpful in identifying primary tumors. *Breast Cancer.* 2008;15:181–4.