Osteoblastic solitary plasmacytoma of bone

Chrissa Sioka¹, Konstantinos Sakelariou¹, Alexandra Papoudou-Bai², Christos Tolis³,
Jihand Al-Boucharali¹, Andreas Fotopoulos¹
¹Department of Nuclear Medicine, Medical Faculty, School of Health Sciences,
University Hospital of Ioannina, Ioannina, Greece
²Department of Pathology, Medical Faculty, School of Health Sciences, University
Hospital of Ioannina, Ioannina, Greece
³OncoDermCenter, Ioannina, Greece

Correspondence to: Chrissa Sioka, M.D., Dept. of Nuclear Medicine, University
Hospital of Ioannina, Ioannina 45110, Greece, Phone: +30-26510-07514; Fax: +30-
26510-07011; Email: csioka@yahoo.com

A 54-year-old woman was subjected to a routine annual chest x-ray for work license
renewal, which showed a hyperdense lesion in her left 8th rib (Figure 1). Chest CT
scan documented this abnormality, which was considered to represent either Paget’s
disease, bone metastasis, or a primary bone tumor.

Whole body bone scan showed increased radioisotope uptake indicating an
osteoblastic lesion in a large portion of the rib (arrows), with an intense focal uptake
(arrowhead) (Figure 2).

Diagnostic biopsy and histological examination of the tissue specimen from the
affected rib (Figure 3), revealed dense infiltration of plasma cells (A, hematoxylin and
eosin stain, X600). Immunohistochemically, the cells expressed CD138 (B,
DABX200), CD38 (C, DABX200) and were IgA-positive (D, DABX200).

Immunostains showed lambda light-chain restriction (E, DABX200) with no
expression of kappa light-chain (F, DABX200) consisted with plasma cell neoplasm.

The bone marrow biopsy obtained from the left iliac crest was free of neoplastic
invasion. X-ray in axial skeleton and long bones and CT scan in skull, and thorax was
performed that did not reveal any additional bone lesions. Laboratory test results
demonstrated normal creatinine (0.73 mg/dl) and total calcium (9.6 mg/dl) levels. The
results of the complete blood account showed a white blood cell count of 3.39 10³/μl
with no other remarkable findings. B2 microglobulin was 2091 µl (700-3400) and
alkaline phosphatase 40 IU/l (30-125). Serum free light chains were absent and there
was no serum or urine monoclonal paraprotein detection. Taken into consideration all
the above mentioned findings, a diagnosis of osteoblastic solitary plasmacytoma was
made.

Solitary osseous plasmacytoma consists of a mass of neoplastic monoclonal plasma
cells associated with bone osteolysis [1,2]. During diagnostic workup FDG PET
should be performed, if available, to rule out smoldering multiple myeloma and
monitor response to treatment [3,4]. Solitary osteolytic bone plasmacytomas, although
rare, have been reported in several bone areas such as lumbar spine vertebra, sternum
or even in rib [2,5]. However, plasmacytoma exhibiting osteoblastic characteristics
such as our case must be extremely rare and deserves further investigation.

Conflict of Interest: The authors of this paper have no conflicts of interest, including
specific financial interests, relationships, and/or affiliations relevant to the subject
matter or materials included.
References