



CASE REPORT

Myeloid sarcoma of the rib: An atypical isolated chest finding



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Abstract Myeloid sarcoma is a rare extramedullary myeloid tumor typically occurring in association with acute myeloid leukemia.

We report an atypical case of myeloid sarcoma arising from the rib of a healthy young man with no specific blood test abnormalities.

Once the malignant nature of the tumor was confirmed, a complete surgical excision was performed and definitive diagnosis was achieved by way of an exhaustive histopathological examination of surgical specimens.

Systemic treatment was administered and currently neither systemic nor local relapse has been identified. Our experience suggests surgical resection could be a valid treatment in isolated myeloid sarcoma patients.

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Abbreviations: WBC, white blood cells; RBC, red blood cells; HGB, hemoglobin; PLTs, platelets; ESR, erythrocyte sedimentation rate; AML, acute myeloid leukemia; PNET, primitive neuro-ectodermal tumor; CT, computed tomography; FNA, fine needle aspiration; WHO, world health organization

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1. Introduction

Myeloid sarcoma is an extramedullary myeloid blast cell tumor manifesting with solid masses usually occurring during onset of acute myeloid leukemia, but seldom manifesting with no myeloproliferative disorder.

2. Case

A 30-year-old man was admitted to our Institution, Monaldi Hospital, in March 2013 with a left hemithorax pain arisen almost six months before.

The patient was in good clinical condition, afebrile, eupnoeic with normal heart rate and blood pressure; his medical history was unremarkable.

On physical exam, the chest was asymmetric because of a painful swelling on left mid axillary line; no abnormality on percussion and auscultation were found. The rest of the systemic examination was normal.

Routine blood tests showed a mild neutrophilia with normal WBC count; RBC, HGB, PLTs, ESR were within normal range; serum for HBsAg and HCV were negative.

A radiographic exam of the chest revealed the presence of a lytic seventh rib lesion associated with thinning and expansion of cortical bone; a non-contrast CT scan lets identify a 45 mm soft tissue mass growing from the bone marrow up to fracture the cortical bone and envelop the arc all around (Figs. 1 and 2).

A whole body contrast-enhanced CT scan showed the pericostal mass to have a great homogeneous enhancement; the parietal pleura appeared thickened, but no lung infiltration was identified; no other abnormalities were observed (Fig. 3).

The patient underwent an ultrasound-guided fine needle aspiration (FNA) in order to perform a cytological exam of the pericostal mass from which, however, only normal stromal and inflammatory cells could be identified.

A 18-FDG PET-CT scan revealed the pericostal mass to have an intense metabolic activity with a 13,49 SUV (Fig. 4); the patient underwent a CT-guided TRU-CUT biopsy of the mass and through the histological examination of the sample it has been possible to recognize a pattern of myeloid or lymphoid malignant neoplasm with strong muscle and bone infiltration by granulocytes and lymphocytes (Fig. 5).

The patient was transferred to the thoracic surgery department where he underwent thoracotomy for tumor resection. Surgical resection of the mass was performed either to achieve a pain palliation than to allow precise and accurate diagnosis. The pathologic mass and the seventh left fractured rib have had to be resected together with the sixth and eighth rib. Thoracic surgeons have then performed a prosthetic reconstruction of the chest wall. The chest pain improved postoperatively.

The histopathological examination of the surgical specimens identified an invasive tumor of seventh rib with different

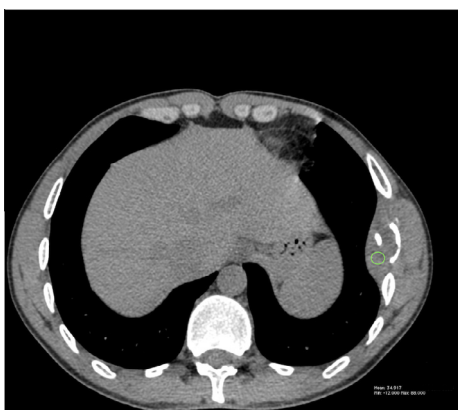


Fig. 1 MDCT axial scan of the soft tissue mass. A soft tissue mass originating from the bone marrow of the VII left rib has grown up to fracture the cortical bone and envelope the rib. The pathologic tissue has a mean attenuation value of 34.9 HU.



Fig. 2 MPR (multi planar reconstruction) of MDCT in Fig 1. The fracture of the VII rib appears more evident.

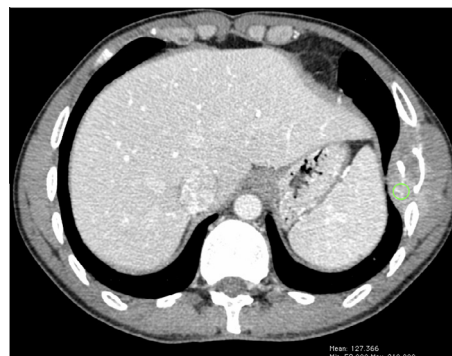


Fig. 3 Contrast-Enhanced MDCT axial scan. The mean attenuation value of the pathologic tissue is 127 HU.



Fig. 4 18FDG PET scan. The image shows the high radionuclide concentration in the pathologic tissue.

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