Giant cell tumor of bone with selective metastases to mediastinal lymph nodes

Abstract We report an unusual case of a recurrent giant cell tumor of the patella which presented with metastatic disease to the posterior mediastinal lymph nodes with no evidence of pulmonary metastases. The patient underwent chemotherapy with subsequent successful removal of the mediastinal mass. A review of the reported cases of mediastinal giant cell tumor metastases is provided.

Key words Giant cell tumor · Metastases · Mediastinum · CT

Introduction

Giant cell tumors of bone account for approximately 5% of primary skeletal neoplasms [1, 2]. Local recurrence after treatment is not uncommon and is usually amenable to re-excision. Most of these tumors are histologically benign, but giant cell tumors of bone metastasize in up to 2–3% of cases [3–11]. Metastases from giant cell tumors occur most frequently in the lungs, though exceptionally spread to other sites including lymph nodes can occur [3, 5, 12–15]. We report the case of a 44-year-old patient who initially presented with a giant cell tumor of his right patella and later developed metastases to the posterior mediastinal lymph nodes without evidence of pulmonary metastases.

Case report

A 44-year-old man presented with pain and a pathologic fracture of the right patella. A giant cell tumor of the patella was diagnosed and a patellectomy was performed. Ten months after an unremarkable post-operative recovery he noticed local nodularity at the resection site with progressive swelling in the region. MR imaging demonstrated a large fungating mass with its epicenter within the soft tissues at the anterior aspect of the knee (Fig. 1). The tumor invaded the medial quadriceps muscles, medial knee ligaments, and femoral cortex. Helical CT (5-mm slices) at the time of confirmed tumor recurrence showed no evidence of any intrathoracic disease. Complete surgical excision was achieved and a myocutaneous flap was placed in the operative bed. Five months after the second operation, the patient complained of shortness of breath. Chest radiographs revealed a lobulated mass situated in the left para-aortic region in continuity with the posterior aspect of the cardiac silhouette, accompanied by a large...
pleural effusion (Fig. 2A). Contrast-enhanced CT examination confirmed a low-attenuation mixed-density mass measuring 12x7x6 cm, extending from the left hilum, posteriorly and inferiorly along the descending aorta (Fig. 2B). No pulmonary nodules were present. The appearance was consistent with a mass of necrotic matted lymph nodes. Fine-needle aspiration biopsy of the mass showed numerous multinucleated giant cells of osteoclastic type and large groups of small spindle-shaped cells, consistent with metastatic giant cell tumor. Pleural fluid aspirated at the time of the mediastinal biopsy yielded only reactive mesothelial cells with no evidence of tumor. Histology of the metastasis was identical to the primary tumor.

The patient was treated with a chemotherapy protocol containing Cis-platinum and Adriamycin with