

CASE REPORT

Bronchopneumonia Disguising Lung Metastases of a Painless Central Chondrosarcoma of Pubis

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Chondrosarcoma is a generally locally malignant chondroid-forming bone tumor with a low potential for distant metastases. A small and completely painless central chondrosarcoma of pubis metastasizing to the lungs in a 63-year-old woman with bronchopneumonia is reported. Here we emphasize the mimicry and low growth of the chondrosarcoma and the

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easiness with which the diagnosis in completely asymptomatic patients can be missed. Although painless chondrosarcoma metastasizing to lung is rather rare, this tumor should be always included in the differential diagnosis of malignancies in this age category. (Pathology Oncology Research Vol 3, No 3, 211–214, 1997)

Introduction

Chondrosarcoma is a malignant chondroid-forming bone tumor termed primary or secondary, if it arises *de novo* or is superimposed on a preexisting benign cartilaginous neoplasm. It occurs mainly in males between the second and seventh decades of life and accounts for 14.5% of malignant bone tumors and 6.4% of all bone tumors.¹³ Chondrosarcoma is subdivided into central, peripheral or juxtacortical (periosteal) lesions, depending on the location within the bone. Central chondrosarcoma occurs most frequently in the extremities and in only 15% of patients involves the pelvis. Conversely, peripheral chondrosarcoma arises in the pelvis in about 30% of cases, followed by the localization in the extremities, ribs and vertebrae.⁶

Chondrosarcoma has long been known for the wide variability of its morphology and clinical course. Generally, it is a locally aggressive tumor with a low potential for distant metastases. Although the bone pain is the first symptom in about of 75 % of patients with a dura-

tion ranging from two weeks to more than 30 years, a painless tumor mass has been occasionally reported.⁶

We present a woman showing clinically a bronchopneumonia without no clear cut radiological or physical sign of malignancy, but having lung metastases of a chondrosarcoma of pelvis admixed with numerous pulmonary inflammatory infiltrates at autopsy.

Case Report

A 63-year-old woman was admitted to the hospital because of fever and exertional dyspnea. The patient had been in stable health without any pain or weight loss until two weeks earlier, when she began to have a dry cough without fever.

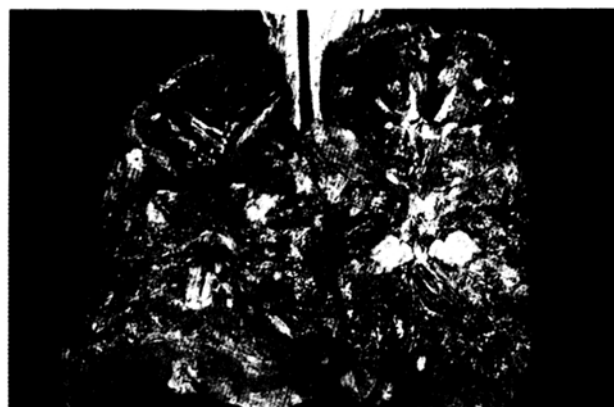
On examination, the lungs had widespread crepitations on auscultation. The temperature was 39.5°C; the pulse was 120 and the blood pressure was 150/80 mm Hg. No murmur was heard in the heart. Abdomen, legs and arms were normal; no malignant pigmented lesions, enlargements of the thyroid gland or mammary nodules were found. Rectal and vaginal examinations were uneventful. Her erythrocyte sedimentation rate was 95 mm in the first hour and her total white cell count was $21.6 \times 10^9/L$, predominantly of neutrophils. The oxygen saturation was 90% while the patient was sitting and breathing room air. A chest X-ray showed cardiac enlargement and a diffuse

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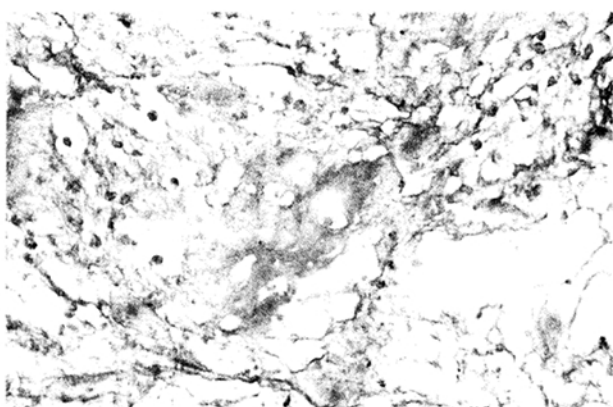
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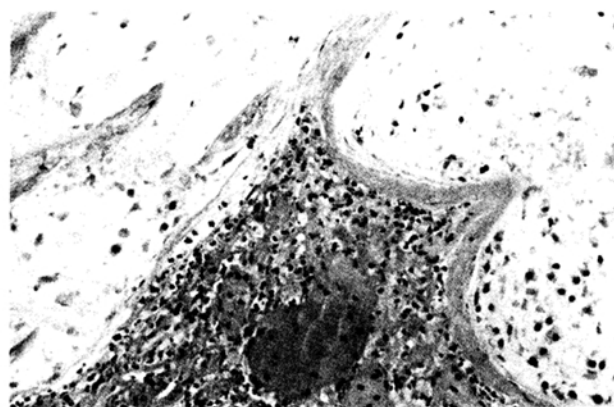
Figure 1. *a.* Anteroposterior chest roentgenogram revealing cardiac enlargement and multiple shadows throughout both lungs.



b. Macroscopic photograph of the lungs showing multiple translucent, white colour myxoid nodules with cystic areas in nearly all the pulmonary lobes.



c. Histologic picture of the middle pulmonary lobe showing myxo-cartilagineous areas separated by vascularized fibrous bands (Alcian-PAS, ×120).



d. Histologic picture of the upper left pulmonary lobe showing neutrophilic infiltrates mixed with the neoplastic component (Alcian-PAS ×180).

distribution of multiple opacities with partial confluence (*Fig. 1a*). According to the radiological diagnosis of bronchopneumonia an intravenous treatment of *ceftriaxan* and *gentamicin* was started. Despite the antibiotic treatment, two days later only a slight decrease of temperature and of the white cell count was observed. A computed tomographic (CT) scan of the thorax was programmed and the antibiotic treatment was continued. Before the CT scan could be carried out, she died of cardiorespiratory failure a few days after hospital admission.

At autopsy, multiple metastatic nodules were found in both lungs (*Fig. 1b*). The primary tumor was a moderately well differentiated (grade II according to Evans et al⁵) central chondrosarcoma of the left pubic bone, measuring 3×2×2 cm, and could be detected with extensive intramedullary spread and irregular margins. Histological examination showed irregularly shaped lobules of neoplastic cartilage that widely varied in size and abutted one another. The lobules were separated by vascularized

fibrous bands and contained mono- or binuclear polyhedral-shaped cells arranged in clusters and immersed in a myxoid matrix. Tumor cells showed a dispersed nuclear chromatin and occasional mitotic figures (mitotic rate lesser of two mitoses per 10 higher power fields,⁵). Invasions of the bladder, colon, large veins or regional lymph node metastases were not seen. Both lungs showed a diffuse metastatic infiltration of the chondrosarcoma with a predominant myxoid stroma in many areas and multifocal bronchopneumonia (*Fig. 1c-d*). No further tumor manifestation was observed. A saffron yellow micronodular liver cirrhosis with histologic notes of steatohepatitis and a sporadic splenic tumor were also seen.

Discussion

The problem of uncertain diagnosis and the worry of malignancy in a patient presenting with pneumonia is not an unusual clinical problem. It is reasonable to consider

a reminder of this especially if the metastasizing tumor is a rare and painless central chondrosarcoma of the pubis. Lung metastases in the elderly are frequently a challenge for the clinician. In 15 to 25% of extrapulmonary solid tumors, lung involvement is the only manifestation of metastatic disease, but the clinical picture may be shifty, particularly in the elderly, or attenuated by antibiotics administered for the treatment of a concurrent infection.⁴ In particular, metastases of chondrosarcoma are very intriguing because of their great tendency to recur locally after incomplete excision, their slow growth with extension into neighboring tissues, and rare and late metastases, most frequently by high-grade tumors occurring up to 20 years later.¹³ Whereas the radiological features of bone chondrosarcoma usually consist of a fusiform bone expansion with destruction of the cortex and mottled calcifications in radiolucent areas, metastatic lesions may show variable areas of calcifications, or no calcification if the matrix component is very myxoid. Pulmonary metastases are not suspected of stemming from a primary skeletal tumor especially when the tumor tissue is mainly composed of myxoid quality. Comparing our case with a similar case of a metastatic chondrosarcoma in the right upper pulmonary lobe with involvement of the chest wall, a nodular density was seen by the roentgenogram.¹ The slow progression and the dense character of the lesion were very helpful in suggesting the nature of the neoplasm, but the diagnosis was made only by open biopsy. Regarding the X-ray film of our patient, even a detailed view revealed no calcification of the lung parenchyma. No opacity in the roentgenogram is of sufficient density to suggest calcification. Surely, a superimposed acute pneumonia could bias most of the opacities, but only an evident nodular appearance might raise a suspicion about a diagnosis other than pneumonia alone. Strictly speaking, hindsight is easier than foresight. In any case, although a CT scan had been programmed, the patient died a few days after the hospital admission.

Another point is the lack of a local symptomatology in this patient. Bone pain is variably present in chondrosarcoma and, when present, it can go on for a long time with an average of 33 months. The saffron yellow micronodular liver cirrhosis observed in our patient can suggest a chronic alcohol intake although neither chronic alcoholic consumption was found by clinical history nor alcoholic damage to heart, brain, and pancreas were seen at autopsy. Since alcoholic subjects may have a superficial or a deep an- or hypalgesia and a predisposition to infectious diseases,⁷ we speculate that the chronic alcohol intake could have determined her reduced sensibility to pain.^{7,8,9,11}

Although surgical and bisphosphonate treatment of pulmonary metastases have been proposed,^{2,3,10,14} with

regard to the course of our patient, it is unlikely that the outcome would have been any different if the diagnosis of lung metastases of chondrosarcoma had been made at our clinical observation. Unfortunately, upon arrival at the hospital the patient had already an extensive pulmonary metastatic disease excluding this possibility at all. It is not uncommon to find a carcinoma of the lung in a patient presenting with infection in a situation where the tumor might be treatable. Presumably in this case the bronchopneumonia was an important factor in her death since it was still present at autopsy.

Autopsies with clinicopathological discussion of the macroscopic and microscopic findings are in decline. This case would pose, at first glance, the role of the autopsy and emphasize its central role concerning the statistics of morbidity and the retrospective control of clinical diagnosis. Opacities mimicking bronchopneumonia in a chest X-ray can also conceal lung metastases of an asymptomatic chondrosarcoma. Although a painless chondrosarcoma with lung metastases is rather rare in clinical practice, this tumor should always be included in the differential diagnosis of malignancy in the aging population.

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