

EXTRAMEDULLARY CHLOROMA

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Key-word: Chloroma

Background: A 53-year-old female patient known with diagnosis of acute myeloid leukemia (originating from a precursor phase of myelodysplasia) was seen during follow-up at our hospital. The patient was considered to be in complete remission after she had undergone a single round of chemotherapy followed by allogenic stem cell transplantation about a year ago. About 6 months later she had developed low back pain radiating to the right hip. In order to exclude insufficiency fractures, as a result of oral corticoid therapy for a chronic graft-versus-host disease, CT scan was then performed.

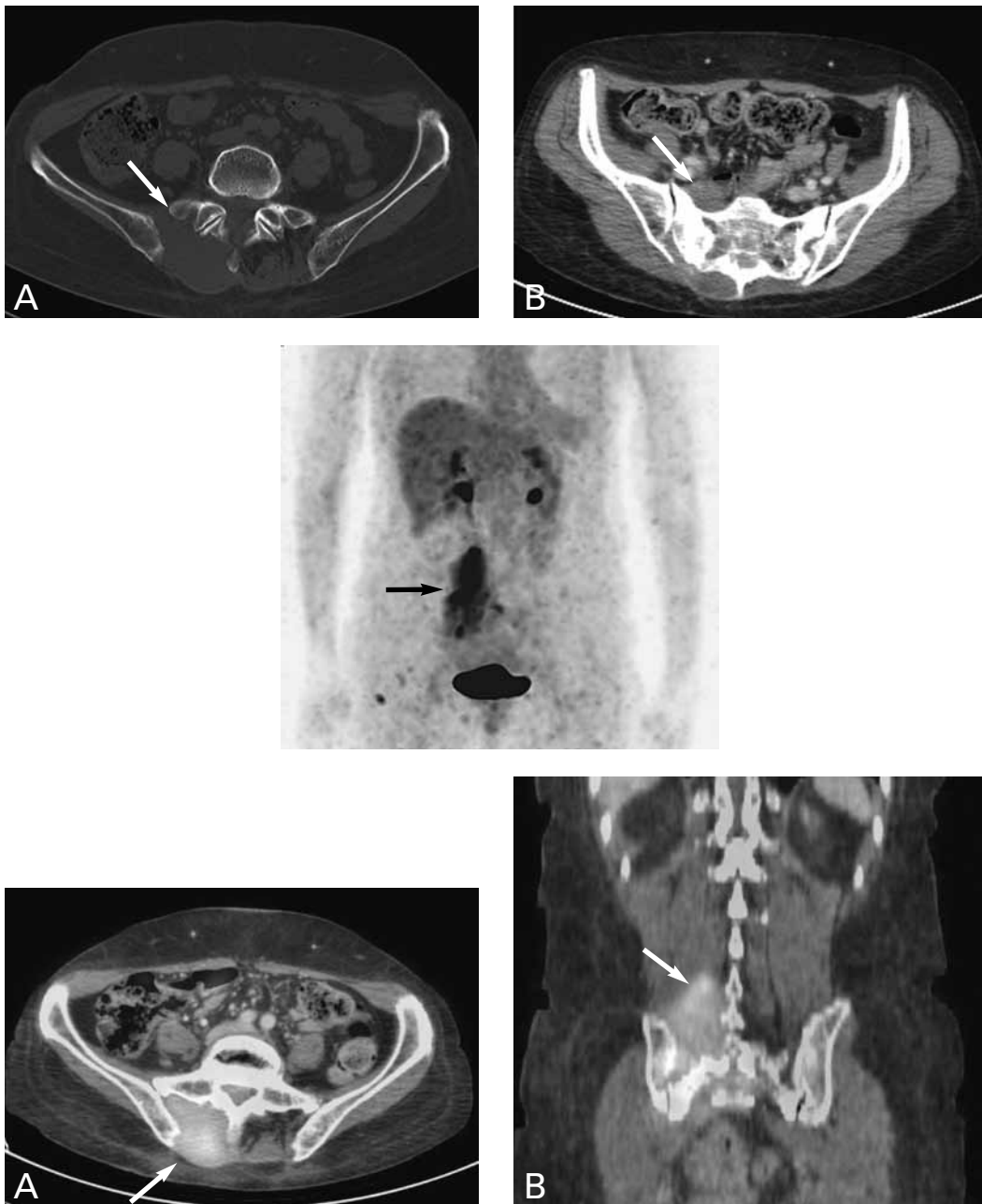


Fig.

1A	1B
2	
3A	3B

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Work-up

Axial non contrast CT of the pelvis (Fig. 1) (A: bone window setting, B: soft tissue window setting) shows insufficiency fractures of the pelvis and a tumoral mass extending from the ligamentous part of the right sacroiliac joint into the adjacent erector spinae muscles and presacrally into the right piriformis muscle and also invading the sacral bone.

Coronal PET-scan image of the abdomen (Fig. 2) demonstrates intense FDG-captating (dark) right-sided paraspinal/sacral mass, halfway between the liver and the urinary bladder.

PET-CT fusion images (Fig. 3) include axial (A) and coronal (B) PET-CT fusion images demonstrating the PET FDG-avidity of the CT-graphic visualized mass.

Radiological diagnosis

Based on the patients clinical history, the CT images and the high FDG-avidity of the mass proven on PET-CT the possibility of a chloroma was suggested.

Biopsy of the mass showed a diffusely growing malignant tumor, morphologically and immunohistochemically consistent with *chloroma* (extramedullary AML localisation).

The patient was referred for local radiation therapy with a total dose of 30 Gy in 15 fractions of 2 Gy. Follow up PET-CT scans showed reduction in size and decrease of FDG-avidity.

Discussion

A chloroma or granulocytic sarcoma, is a localized extramedullary tumor composed of malignant cells of the myeloid line, most frequently occurring in myelogenous leukemia.

The term “chloroma” was first defined by King in 1853 because typical cases have a greenish color caused by the high level of myeloperoxidase in these immature cells. The term was changed to “granulocytic sarcoma” in 1966 by Rappaport because not all of the tumor cells are green, depending on the state of oxidation of the pigmented enzyme.

The lesions generally present as a soft-tissue nodule or mass, or as a diffuse infiltrative process. The imaging characteristics of CT, MRI and ultrasonography are frequently similar to those of lymphoma.

FDG-PET is useful in patients suspected to have extramedullary relapse of myelogenous leukemia because these lesions may show an increased glycolytic activity.

The most common sites of occurrence are the breast, subcutaneous tissues and bone, but a chloroma can occur in any part of the body.

Chloromas generally resolve completely in less than 3 months when treated but they tend to recur in approximately 23% of patients.

Although putting the diagnosis can be challenging since clinical and laboratory data are often not indicative, early diagnosis of focal relapse of this type is necessary since it can be cured by targeted therapy, e.g. radiation or chemotherapy.

Bibliography

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