ED QUICK QUIZ
WHAT IS THE DIAGNOSIS?

BACKGROUND

A 62-year-old man presents with painful swelling over the anterior aspect of the shaft of his left mid tibia. He had noticed the mild prominence over the past few months but had not paid much attention to it, thinking it was due to trauma he must have forgotten about. Now the swelling has started to hurt, with a dull, aching pain in the last week. He complains of oedema on both legs.

On review of systems, he denies any recent trauma or infection to the affected leg, as well as shortness of breath, chest pain, weight loss, or recent fevers. The patient is an avid smoker and regular alcohol drinker. His medical history is significant for hypertension, which is being treated with an unknown medication and that he saw his GP recently for swelling of his legs and was given an unknown medication. His family history is unremarkable.

He has a firm, tender prominence on the anterior aspect of his left tibia, just distal to the tibial tuberosity. The skin over the lesion is normal, without any evidence of infection or recent trauma. His dorsalis pedis pulses are strong and equal on both sides. He has bilateral lower-extremity oedema, greater on the left than on the right. The rest of his physical findings are unremarkable.

An x-ray of the area is undertaken

QUESTION

What diagnosis does the x-ray suggest?

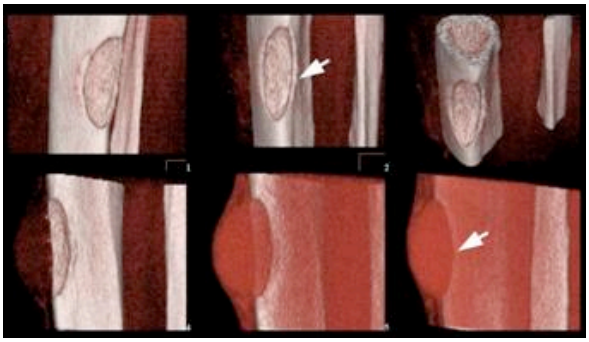
Hint : has the patient had a DVT recently?

ANSWER & DISCUSSION

Bone metastasis

The x-ray shows a punched-out, eccentric lytic lesion of the anterior tibia.

3D CT reconstructions of the same lesion depicted a sclerotic rim around an osteolytic defect. In addition, CT scan shows the associated soft-tissue extension and bony trabecular and cortical destruction more precisely than the x-ray does.



CAP CT scan showed a renal mass and a destructive lytic process involving the vertebral body, a lytic deposit in the right lamina, and an expanding lytic lesion of the left transverse process. Tumour thrombus was also present in the inferior vena cava.

Metastatic bone disease is the most common malignant tumour to involve the skeleton. Metastasis can occur by means of direct extension, retrograde venous flow, or hematologic spread of tumour emboli. The proximal femur and the proximal humerus can also be involved because of the red-marrow content at these sites that allow for hematologic seeding of metastases. Metastases distal to the knee and elbow are comparatively rare. Most bone metastases are osteolytic and may be complicated by pathologic fractures. The cortex is eventually eroded, and the lesion breaks through to the soft tissues. The degree and timing of bone resorption and deposition from metastases varies and depends on the primary malignancy. For example, metastases from prostate and breast cancers may be osteoblastic or a mixture of lytic and blastic lesions.

The most common primary malignancies (UK) are those of the breast, prostate, lung, thyroid, and kidney. Less common malignancies are GI, adrenal, neuroblastoma, and melanoma. Bone metastases are usually found in adults, especially elderly persons.

Children are less likely than adults to have bone involvement; however, when it occurs, the metastases can often be widespread throughout the skeleton. **Beware of rest and especially night-time pain in a limb in children**.

The most common causes of metastases in children are neuroblastoma and leukemia. The frequency of bone metastases depends on the prevalence of a particular cancer in the community and varies with geographic location.

Patients with bone metastases often present with bone pain, soft-tissue swelling, or a pathologic fracture after minor or no reportable trauma. Chronic and severe pain, spinal epidural compression leading to spinal cord compression, and bone-marrow failure are complications of bone metastases that can drastically reduce the patient's quality of life and life expectancy.