Fibular findings in carcinoma prostate; a challenging situation for reporting physician.

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Abstract
Prostate cancer (PC) is the second most common malignancy in men. According to International agency for research on cancer, 4552 new cases of PC were registered in 2018 in Pakistan. Although majority of cases are confined to prostate on initial presentation, there is a high tendency for advanced PC to metastasize to bone. Metastatic lesions are typically osteoblastic rather than osteolytic. Therefore, these are easily identified by Technetium labeled Methylene Diphosphonate (Tc99m-MDP) uptake on Whole body Bone Scan (BS). Hybrid scanning offers anatomic details for differentiation between aggressive or non-aggressive lesions. Most common axial sites include pelvic bones and spine. Metastases to appendicular skeleton is rare and uncommon.

We present a case of 62-years-old male with PC. Follow-up WBS, showed interval development of multiple sites of skeletal metastases. SPECT-CT scan acquired for characterization of atypical site of abnormal MDP uptake in appendicular skeleton, which showed features suggesting skeletal metastasis.

Keywords: Appendicular metastasis, Fibular metastasis, Bone scan, SPECT-CT.

A 62-year-old male with diagnosed prostatic adenocarcinoma underwent follow up BS. Baseline BS 4-years back showed no osseous lesion. BS and SPECT-CT were performed after intravenous injection of 754 MBq of Tc99m MDP.

Whole body planar images (A) display multiple areas of abnormal radiotracer uptake involving skull, right shoulder, left sternoclavicular joint, D6 vertebra, D12, L1, multiple ribs bilaterally, left iliac blade. Focal uptake was noted in the lateral aspect of the left ankle joint. On
SPECT-CT images (B) abnormal focal radiotracer uptake was localized to the left distal fibula. CT component showed mixed lytic/sclerotic lesion with overlying cortical destruction suggesting an aggressive lesion in keeping with metastases.

Solitary site of uptake in appendicular skeleton warrants further investigation. Differentials include traumatic fracture, benign bone lesion, metastatic disease or primary bone tumour. Hybrid imaging helps in establishing the final diagnosis.

Only a few cases of appendicular metastasis from PC are reported. A recent study by Simsek DH, et al. showed lower limb metastases in 61 (8.7%) patients mid to distal femur (54 patients), tibia (19), fibula (24) and calcaneus (1). Lower limb metastases were mostly detected in symptomatic patients (70.1%). Those with lower extremity metastasis had concurrent extensive axial metastases as well. They reported significantly higher median PSA levels in multi-metastatic patients with lower limb metastasis as compared to those without lower limb metastasis.

Lee DK reported a case where a symptomatic patient had appendicular metastasis. Bibbo C, et al. reported a case with calcaneal metastasis. Weusten A, et al. described a case which initially presented with unilateral metastases in the lower limb and then was diagnosed with PC.

A few other atypical sites of metastases of PC have also been reported earlier. Mandalia H et al. presented two such cases. In both cases the primary malignancy was not known. First case presented with neurological symptoms and showed metastatic lesion in left temporal lobe. Second case presented with unilateral breast swelling, initial impression was gynecomastia. However, surgical specimen proved metastatic infiltration of right breast.

Kirakoya B et al. report a case of parietal bone metastasis. Sui X et al. showed PC metastasis to the distal phalanx of the left hallux.

In conclusion it has been established that metastatic lesions can be present in various atypical sites. Atypical sites on BS must always be further evaluated with hybrid imaging to explore the underlying changes.

References