JOURNAL OF CLINICAL AND HEALTH SCIENCES

IMAGE QUIZ

JCHS-IQ-01-2019

ANSWER TO JCHS-IQ-01-2019

Prostate Carcinoma, Bone Metastases

This radiograph exhibits multiple areas of sclerosis in the right ilium and the right proximal femur with no cortical break or obvious soft tissue component. Common possible causes for this appearance include metastases (from breast carcinoma in females, prostate carcinoma in males and lung carcinoma), Paget's disease and lymphoma [1]. In an elderly gentleman with history of AUR with multiple sclerotic bone lesions, prostate carcinoma is highly suggestive.

Prostate carcinoma is the second most common malignancy in males after lung carcinoma [2]. Risk factors include advancing age with increased incidence in first degree relatives [1]. Eighty percent of these tumours are located within the peripheral zone followed by the transitional and the central zones [1]. Although non-specific, an elevated serum PSA should raise the possibility of prostate carcinoma, which can be confirmed by histopathological examination [3].

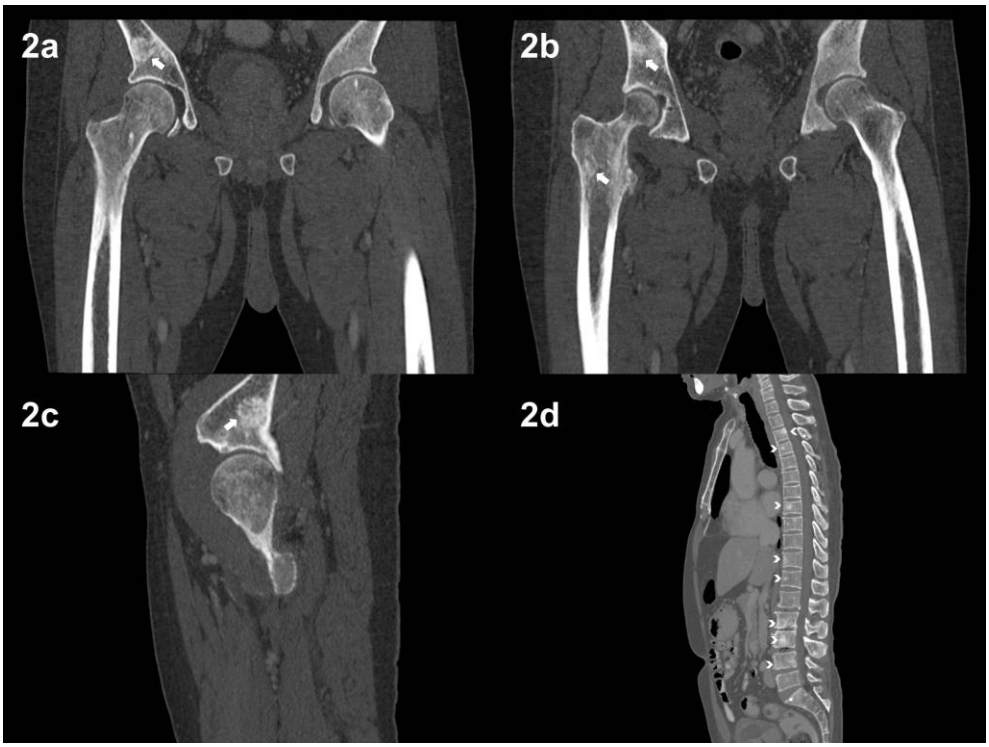

Figure 2 Contrast enhanced CT scan of the thorax, abdomen and pelvis in bone window showing multiple sclerotic bone lesions (white arrows) in the proximal right femur and ilium (Figure 2a and 2b) on coronal views and (Figure 2c) on sagittal view. Multiple sclerotic bone lesions (white arrowheads) were also demonstrated within the thoracic and lumbar vertebrae (Figure 2d) on sagittal view.

On further imaging, computed tomography (CT) (Figure 2) revealed multiple sclerotic bone lesions within the vertebral bodies, pelvis and proximal right femur. No associated cortical break or soft tissue component were observed. These findings are compatible with sclerotic bone metastases, likely secondary to prostate carcinoma.

In patients with prostate carcinoma, bone metastases should be suspected when the serum PSA is more than 20ng/ml, Gleason score of 8-10, clinical stage of more than stage T3 and bone pain [1]. Further imaging with bone scan would demonstrate sited of bone metastases. Multiparametric MRI is used for staging, mainly to detect extracapsular extension and nodal involvement. It is also used in lesion detection in cases of negative TRUS biopsy with persistently high PSA. Increasingly, PI-RADS (Prostate Imaging Reporting and Data System) which is a structured reporting scheme, is used in evaluating the prostate for prostate cancer [3].

Learning Points

- Multiple sclerotic bone lesions in an elderly with acute urinary retention is highly suggestive of prostate carcinoma.
- Differentials of sclerotic bone lesions in elderly male includes, prostate (most common) and lung carcinoma.
- Multiple sclerotic bone metastases will eventually cause fracture.

REFERENCES

1. Wolfgang Dahnert. Radiology Review Manual. 7th edition. Lippincott Williams & Wilkins. 2011. pp. 966-968.
2. Messiou C, Cook G, deSouza N M. Imaging metastatic bone disease from carcinoma of the prostate. Br J Cancer. 2009; 101(8): 1225–1232. doi:10.1038/sj.bjc.6605334.
3. Caroline M. A. Hoeks, Jelle O. Barentsz, Thomas Hambrock, Derya Yakar, Diederik M. Somford et al. Prostate Cancer: Multiparametric MR Imaging for Detection, Localization and Staging. Radiology. 2011; 261(1): 46-66. doi: 10.1148/radiol.11091822

Corresponding author:

Dr. Mazuin Binti Mohd Razalli
Department of Radiology,
Faculty of Medicine,
Universiti Teknologi MARA
Sungai Buloh Campus,
47000 Sungai Buloh, Selangor, Malaysia.
Tel: 019-3322995
Email: mazzuin81@gmail.com