Hydrocele detected during bone scintigraphy

Gülgün Büyükdereli, İsa Burak Guney, Esra Kırım, Gül Nihal Nursal

Department of Nuclear Medicine in Cukurova University Faculty of Medicine, Adana, Turkey

ABSTRACT

Bone scintigraphy is a sensitive and widely used technique for the diagnosis of many bone disorders. Normally, uptake of bone agents is seen in the osseous structures, kidneys, and bladder. Generally, delayed images show slight soft tissue uptake. In the literature, most of the studies revealed that majority of the soft tissue lesions detected on bone scans usually have pathologically increased soft tissue uptake (1). On the other hand, the reports about photopenic defects in the soft tissue are very rare. We present here two cases with photopenic scrotal defect on bone scintigraphy. Our study emphasizes the importance of soft tissue evaluation on bone scan even the defect is photopenic.

Key words; Bone Scintigraphy, hydrocele

Kemik sintigrafisi ile tesbit edilen hidrosel

ÖZET


Anahtar kelimeler; Kemik sintigrafisi, hidrosel

Introduction

Bone scintigraphy is an extremely effective and relatively inexpensive tool for diagnosis of many bone disorders. Especially, it is an excellent method for evaluating patients for suspected metastatic disease. Most of the metastatic lesions manifest as areas of increased activity. Bone scanning is usually performed using technetium-99m labelled diphosphonate. It is thought that diphosphonate uptake on bone primarily reflects osteoblastic activity but is also dependent on skeletal vascularity. In healthy people, usually kidneys and bladder are readily visualized soft tissue structures. Occasionally, extraskeletal uptake in soft tissues can be seen on delayed images (1). Scrotal disease identification on bone scintigraphy is very rare. We present here two cases with photopenic scrotal defect on bone scan. Our purpose is to describe these two cases who were diagnosed incidentally during bone scan and to briefly review the relevant literature.

Case reports

Patient 1

A 70-year-old man with carcinoma of the bladder was referred for bone scan to evaluate bone metastases. (Fig 1A) Planar images obtained 3 hours after injection of 20 mCi Tc-99m methylene diphosphonate (MDP) showed no evidence of metastatic disease, but an incidental large photopenic defect was evident in the scrotum (arrow). (Fig 1B) On ultrasound, there was fluid collection surrounding the left testis (arrows). The physical examination and ultrasound revealed the presence of a left hydrocele.

Patient 2

This patient was a 56-year-old man with carcinoma of the bladder. (Fig 2A) Bone scan images of the patient were obtained 3 hours later after the injection of 20 mCi Tc-99m MDP to evaluate skeletal metastases. Images showed increased Tc-99m MDP uptake in the right shoulder, and the bilateral sacroiliac joints. In addition to these findings there was a large photopenic defect in the scrotum (arrow). (Fig 2B) Scrotal ultrasound showed fluid collection surrounding the right testis which was compatible with the right hydrocele (arrows).

Discussion

Although delayed bone scan images target the osseous structures and, in most people, show minimal soft tissue activity, our examples of scrotal defects on delayed bone scintigraphy emphasize the importance of including the soft tissues in an evaluation. Reported
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Figure 1. Patient 1. A. A photopenic scrotal defect is seen on bone scan (arrow). B. Scrotal ultrasound shows fluid collection surrounding the left testis which is compatible with the hydrocele (arrow).

Figure 2. Patient 2. A. Bone scintigraphy shows a photopenic scrotal defect (arrow). B. Scrotal ultrasound shows an extratesticular anechoic fluid collection which confirms the presence of right hydrocele (arrow).
cases regarding the scrotal disease identification on bone scintigraphy are rare (2-11) and mostly increased scrotal activity on bone scintigraphy is described (2-9). Sheafor et al reported two cases of epididymitis which showed increased scrotal activity on three phase bone scan (2). The other reported cases of increased scrotal activity on bone scan are herniation of the urinary bladder into the scrotum (3-6), urethro-scrotal fistula (7), malignant lymphoma (8) and secondary lymphedema (9). There are few reported cases with scrotal defect on bone scintigraphy. These are hydrocele (10,11), herniation of the air-filled loops of bowel in the scrotum (10), scrotal hematoma (10) and a torsed appendix testis (2). Here, we also report two cases with hydrocele which shows photopenic scrotal defect on bone scan.

References

Corresponding Author
Kurtulufl Mah., Ziyapafla Bulvar
Büra Apt., No: 10/15,
01130 Seyhan, Adana, Turkey
Tel: 90 532 430 51 18
90 322 459 76 67
e-posta: gulgunb@cu.edu.tr