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Case report

Perinephric Urinoma Due to Locally Advanced Recto-Sigmoid Tumor: Incidental Finding on Bone Scan

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Abstract

We are presenting a 59 years old man with locally advanced recto-sigmoid colon cancer; complaining of left flank pain and bone scan was done to rule out bone metastases. Findings in bone scan were suggesting left renal obstruction, but further SPECT/CT imaging to localize the uptake revealed a perinephric collection likely due to leak from the left ureter close to tumor site.

Keywords: Bone scan, single photon emission tomography/computed tomography, urinoma

Introduction

Bone scan usually used in detecting bone metastases for various tumors especially the sclerotic and mixed lesions. The detection of lytic bone lesions are sometimes difficult and will appear as photopenic areas. In addition, bone scan can detect other pathology not relating to bones like soft tissue abnormalities. In our case, we managed to detect left perinephric collection due to leak from the left ureter in close proximity to tumor site. The role of SPECT/CT in localizing the radiotracer uptake is very essential.

Case Report

A 59-year-old man with a history of inoperable locally advanced recto-sigmoid tumor presented with left loin pain and tenderness. A bone scan was performed to rule out bone metastases. Planar images revealed an abnormal oval-shaped radiotracer uptake in the left abdomen resembling an obstructed left kidney [Figure 1]. Single photon emission tomography/computed tomography (SPECT/CT) was performed to further evaluate the location of the abnormal radiotracer accumulation. Fused images showed a left perinephric collection likely due to leak from the ureter close to the primary tumor [Figures 2 and 3]. The patient underwent percutaneous nephrostomy, drainage, and retrograde ureteric stenting. Patient made an uneventful recovery.

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Discussion

Urinoma is defined as an extravasated urine collection with surrounded fibrous capsule. It is postulated to occur when three factors present: (1) Functioning kidney, (2) tear in the urinary tract, and (3) element of ureteral obstruction to some extent.[1]

It usually results from urine leak due to blunt or penetrating trauma, iatrogenic injury, or back pressure by downstream obstruction due to a ureteral stone, surgical ligature, or abdominal or pelvic mass. As compared with renal urine leaks, ureteral urine leaks commonly occur due to iatrogenic injury following genitourinary, retroperitoneal, pelvic, or gynecologic surgery.[2] Case reports of urinomas resulting from rare conditions such as retroperitoneal fibrosis[3] or as a complication of surgical spinal fusion procedure[1] have been reported. In our case, the direct invasion of

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Figure 1: Technetium-99m methylene diphosphonate whole body scans showing intense tracer uptake projecting over the left abdomen mimicking hydronephrotic obstructed left kidney

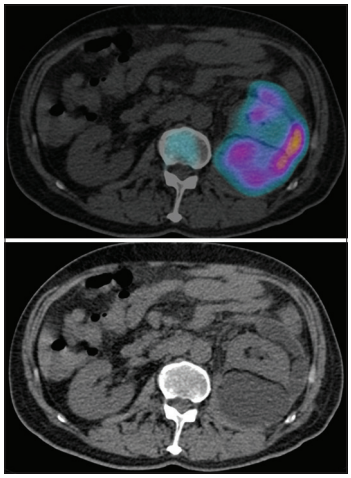

Figure 2: Single photon emission tomography/computed tomography (axial plain) showing tracer activity in the perinephric collection compatible with urinoma. Left kidney is not enlarged

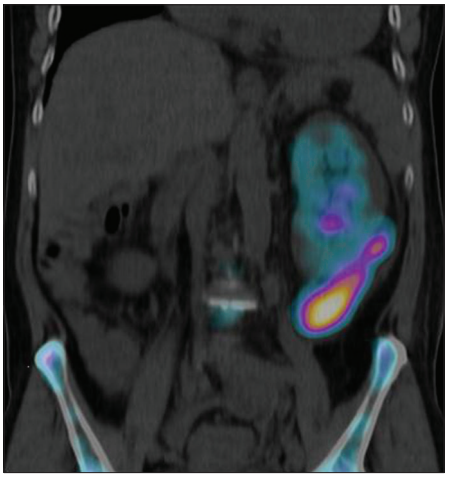

Figure 3: Single photon emission tomography/computed tomography (coronal plain) showing the urinoma with the primary recto-sigmoid tumor (arrow)

the recto-sigmoid tumor to the left ureter was the cause for the urine leak and collection.

The diagnostic studies of choice are delayed contrast-enhanced CT, CT cystography, and retrograde urethrography. Studies such as intravenous pyelography, antegrade and retrograde pyelography, renal scintigraphy, and imaging-guided needle aspiration are also useful.[2] Case reports of diagnosing urinomas by 18F-fluorodeoxyglucose positron emission tomography/CT scan[4] and Ga-67 citrate[5] have been discussed in literature. In our case, urinoma was suspected as an incidental finding on a routine bone scan for metastases screening. The SPECT/CT add to the diagnostic accuracy in this case as a cross-sectional imaging.

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