




Deformed bladder activity mimicking pelvic crossed ectopic kidney on Technetium-99m labelled dimercaptosuccinic acid renal cortical scintigraphy

Teknesyum-99m işaretli Dimerkaptosüksinik asit renal kortikal sintigrafide görülmeyen pelvik yerleşimli çapraz ektopik böbreği taklit eden deforme mesane aktivitesi

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ABSTRACT

Technetium-99m dimercaptosuccinic acid (DMSA) scan was performed on a 32-year-old woman with abdominal pain. A normal functioning slightly ptotic right kidney was seen on planar images. There was no activity in the left renal region and a small fusiform activity was seen in the right pelvic area. Pelvic computed tomography (CT) axial images revealed pre-vesical pelvic abscess pushing the bladder posteriorly to the right side. On computed tomography images obtained after percutaneous drainage it was concluded that the activity in the right pelvic area on Technetium-99m DMSA scan was compatible with physiological activity in the bladder.

Keywords: Kidney; scintigraphy; DMSA.

Öz

Karın ağrısı şikayeti olan 32 yaşındaki kadın hastaya Teknesyum-99m dimerkaptosüksinik asit (DMSA) sintigrafik görüntüleme uygulandı. Planar görüntülerde sağ böbrek hafif pitotik yerleşimde ve normal fonksiyona sahipti. Sol renal lojda aktivite izlenmedi ve sağ pelvik alanda fuziform şekilli bir aktivite görüldü. Pelvik bilgisayarlı tomografi (BT) aksiyal görüntülerinde mesane anteriorunda mesaneyi posteriora ve sağa doğru iten apse ile uyumlu koleksiyon saptandı. Perkütan drenaj sonrası elde edilen BT görüntüleri ile birlikte yorumlandığında, Teknesyum-99m DMSA taramasında sağ pelvik bölgede gözlenen aktivitenin mesanedeki fizyolojik aktivite ile uyumlu olduğu değerlendirildi.

Anahtar Sözcükler: Böbrek; sintigrafi; DMSA.

Patient presentation

Technetium-99m dimercaptosuccinic acid (DMSA) scan was performed on a 32-year-old woman with complaints of back and pelvic pain. A normal functioning right kidney (black arrows) was seen on anterior (Figure-1A) and posterior (Figure-1B) planar images. There was no activity in the left renal region, suggesting a non-

functional kidney or left renal agenesis. In addition, a small bean-shaped activity (black arrowheads), with a concave medial border, was shown in the right pelvic area. At first, this activity was thought to represent a pelvic crossed ectopic atrophic kidney as no kidney was demonstrated in the left renal region.

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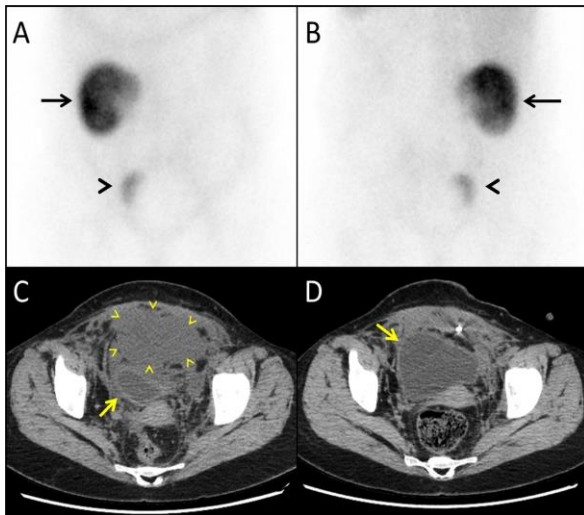


Figure-1. On **A)** Anterior, **B)** Posterior Technetium-99m DMSA planar images, there was no activity in the left renal region, suggesting a non-functional kidney or left renal agenesis. A small fusiform activity (black arrowheads), which was thought to be a pelvic crossed ectopic atrophic kidney, was shown in the right pelvic area. **C)** Axial CT image showed a fluid collection in the pre-vesical area, which pushed the bladder (yellow arrow) to the right posterolateral side of the vesical region. **D)** After percutaneous abscess drainage, control CT showed regression of the abscess, and the nearly normal shaped bladder (yellow arrow).

A few days later, the patient underwent pelvic computed tomography (CT) to clarify the complaint of pelvic pain and the findings on the DMSA scan. Axial cross-sectional image (Figure 1C) showed a fluid collection, measuring 80x56 mm, in the pre-vesical area, which pushed the bladder posteriorly and to the right side. It was understood that the pelvic activity on the Technetium-99m DMSA scan was compatible with physiological activity in the deformed bladder. The left kidney was seen in normal localization and was evaluated as non-functional based on CT and DMSA findings. The patient was followed-up in the urology department with

the diagnosis of a pelvic abscess. Percutaneous abscess drainage was performed and the control CT showed regression of the abscess, drainage catheter in the pre-vesical area and, the nearly normal shaped bladder.

Bladder variations have been reported on bone scans and Technetium-99m diethylenetriaminepentaacetic acid (DTPA) renal imaging in the past. These studies demonstrated bladder displacement or dis-configuration by extrinsic or intrinsic reasons. Some of them have shown pelvic and intestinal masses as extrinsic causes (1). In the other studies, bladder filling defects were due to intrinsic causes such as bladder carcinoma and bladder stones (2-3). Evaluation of bladder deformities is easier in Technetium-99m methylene diphosphonate (MDP) bone scan and Technetium-99m DTPA renal scan because physiological excretions of these radiopharmaceuticals are largely via the bladder. However, since the binding of Technetium-99m DMSA to serum proteins is approximately 90%, the renal extraction rate of Tc-99m DMSA is only 5.8% (4). Also, patients usually urinate prior to scintigraphy to be taken at 2 or 3 hours after injection. Therefore, it is difficult to evaluate bladder deformities in a Technetium-99m DMSA scan. Even the bladder is not sometimes taken into the imaging area. To the best of our knowledge, there wasn't any study with Technetium-99m DMSA defining bladder dis-configuration in the literature.

In addition, some previous studies emphasized the contribution of single-photon emission computed tomography/computed tomography (SPECT/CT) to clarifying suspicious activities such as urinomas on dynamic renal scans (5). The correct diagnosis could have been made in the same session with SPECT/CT, but it had not been performed with our patient.

Conflict of interest: The authors declared no conflict of interest.

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