QUIZ

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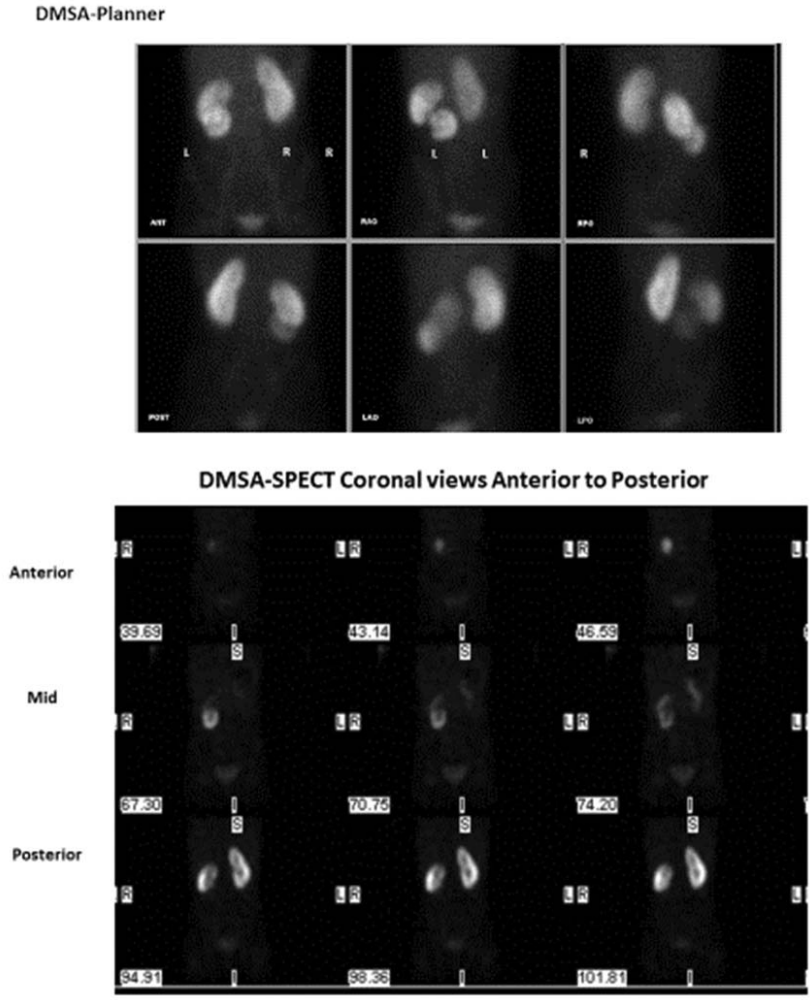
PJR July - September 2020; 30(3): 233-234



A 10-year-old girl presented with short history of urinary frequency and urgency. She has history of blunt abdominal injury in March 2020. Her urine detailed report showed hematuria, pyuria with growth of E. Coli on culture. A Tc-99m DMSA (Di-Mercapto Succinic Acid) planar and SPECF images were acquired and shown above

Q1. Describe the scan findings?

Q2. Is there a supernumerary non-fused kidney on right?

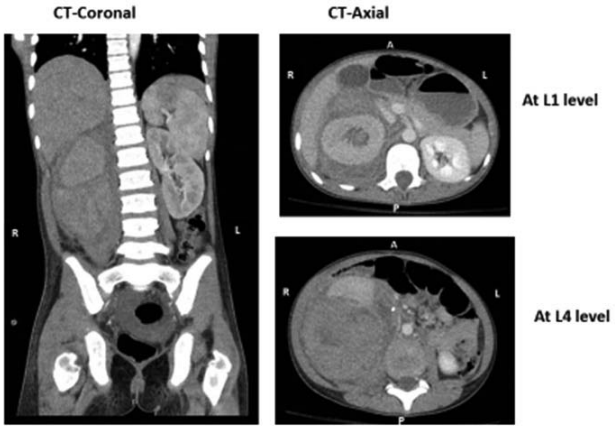
Submitted 1 September 2020, Accepted 3 September 2020

QUIZ

Answers

Answer 1: In the right renal area there are two well outlined and clearly demarcated functioning renal cortices, with a larger proximal and smaller distal segment. It is also evident that distal segment is displaced anteriorly as it is better outlined in anterior images. No evidence of wedge shaped cortical scarring is identified in either segment. Left kidney appears normal functioning without scarring.

Answer 2: As per scan interpretation, this looks a case of supernumerary kidney (distal) non-fused with native (proximal) right kidney.
Good - Now please review the CT images and re-consider your answer .



Aah Aah .
CT images shows a large inter-polar laceration with peri-nephric hematoma on right side (Grade IV injury). Based on DMSA and CT findings, my final interpretation will be *normal functioning proximal and distal segments of dissected right kidney giving an impression of* ***Post-Traumatic Pseudo-Supernumerary Kidney".***

Discussion

Supernumerary kidney(s) is defined as presence of one or two accessory kidneys and it is a rare congenital anomaly of the urogenital system. Embryologically, supernumerary kidneys are formed by aberrant division of the nephrogenic cord into two metanephric blastemas with bifurcartion of one bud.[1] It is associated with urogenital anomalies (like fusion anomalies or ureteric / urethral / vaginal or penile anomalies) and non-urogenital anomalies (like coarctation of aorta, imperforate anus, ventricular septal defects and meningomyelocoele).[2] So far less than 100 cases have been reported in literature.[3]
Pseudo-supernumerary kidney is visual presentation of an accessory kidney caused by a non-renal cause. To the best of our search, only one case of pseudo-supernumerary kidney has been reported on bone scan due to uptake of Tc-99m Methylene Diphosphonate (Tc-99m MDP) in liver metastases of squamous cell carcinoma.[4] Present case is the first case of pseudo-supernumerary kidney caused by well-functioning segments of dissected right kidney as sequel of grade-IV injury.

Conflict of Interest: None

References

1. N Guessan G, Stephens FD. Supernumerary kidney. J Urol 1983; **130:** 649-53.

2. Jayanth K, Avni K P. https://radiopaedia.org/articles/supernumerary-kidney-2

3. Oto A, Kerimoglu U, Eski orap i S, Hazirolan T, Tekg l S. Bilateral supernumerary kidney. Imaging findings JBR-BTR 2002; **85:** 300-3.

4. Lionel SZ, Nasrin Ghesani, Paul LS, Blanche JS. Pseudo-Supernumerary Right Kidney. Clin Nucl Med 2003; **28(5):** 432-3.