ejpmr, 2023, 10(3), 196-199

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Case Study

ISSN 2394-3211

EJPMR

A RARE CASE OF PANCAKE KIDNEY WITH LYING DOWN ADRENALS

***Dr. Monika Negi and Dr. Akhilesh Negi**

Department of Radiodiagnosis and Interventional Radiology, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi.

***Corresponding Author: Dr. Monika Negi**

Department of Radiodiagnosis and Interventional Radiology, Vardhman Mahavir Medical College and Safdarjung Hospital, New Delhi.

Article Received on 09/01/2023 **Article Revised on 29/01/2023** **Article Accepted on 19/02/2023**

INTRODUCTION

Pancake kidney is a rare renal structural anomaly (less than 10 percent)[1] characterized by complete fusion of B/L kidneys in the pelvic cavity, however the excretory system of the kidneys remains separate with normal insertion of ureters in the urinary bladder.[2,3] The affected individuals are usually asymptomatic and it is an incidental finding. It has an incidence rate of 1 in 65000–375000 individuals[2] with male predominance of 2.5:1.[1]

CASE REPORT

A 51 year old male presented with abdominal pain for which ultrasound(USG) was performed. On ultrasound, it was found that bilateral renal fossae were empty and a reniform structure was seen in the pelvis. For further evaluation non contrast computed tomography(NCCT) was requested.

On NCCT, a reniform structure was seen in pelvis in midline, measuring 11.3x5cm, showing two renal pelvis which are directed antero-inferiorly, seen giving rise to two separate ureters which are seen entering the urinary bladder normally (Figure 1,2,3). Few concretions were seen in left sided pelvis of average size 3-4mm (Figure 4). Elongated, straight bilateral adrenal glands were seen giving appearance of lying down adrenal sign (Figure 5).

In our case contrast study could not be performed as patient had altered renal function test.

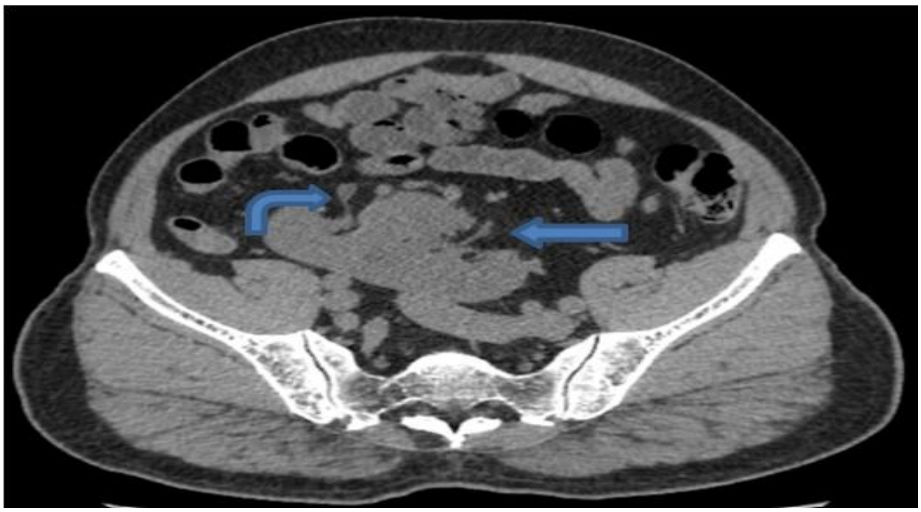

Figure 1. NCCT axial section showing a structure in pelvis with right ureter (curved arrow) and left ureter (straight arrow) seen arising from this reniform structure.

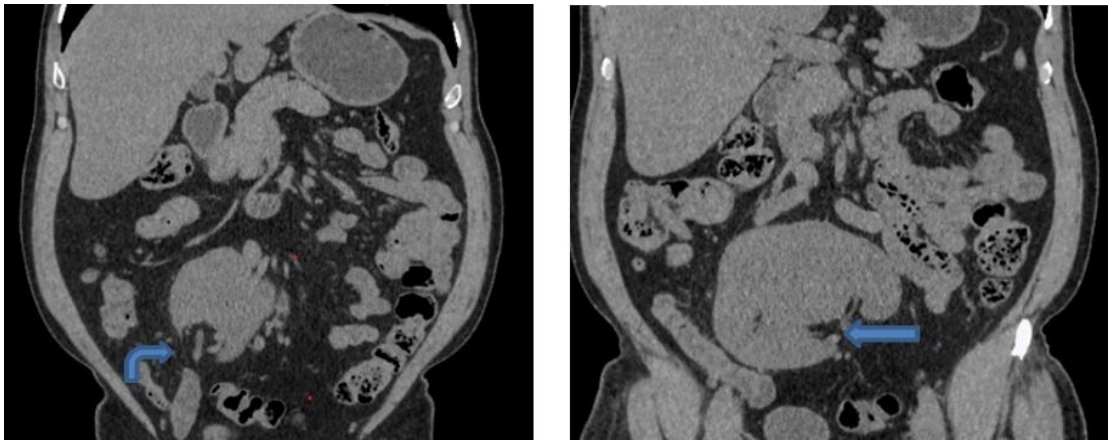

Figure 2. NCCT (coronal sections) showing right and left ureters arising from the kidney.

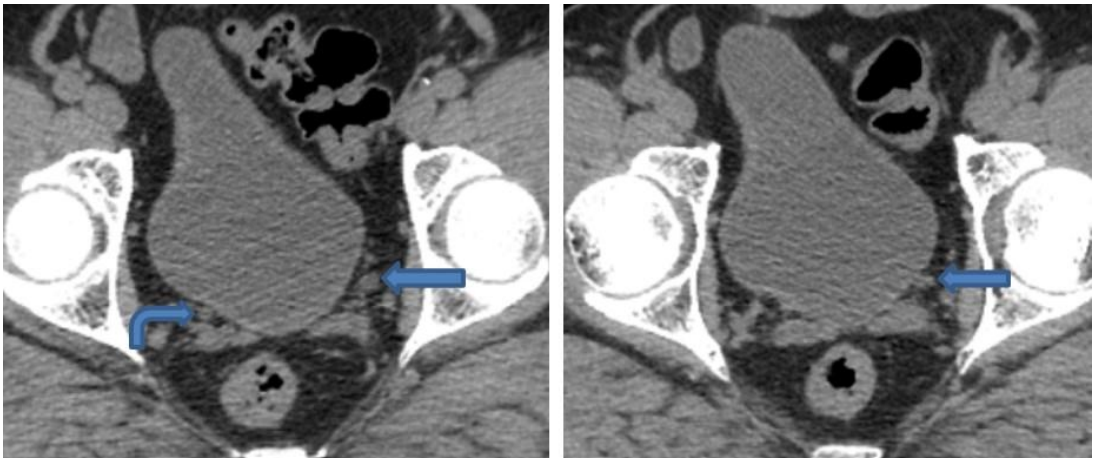

Figure 3. NCCT(axial sections) showing right and left ureter normally entering into the urinary bladder.

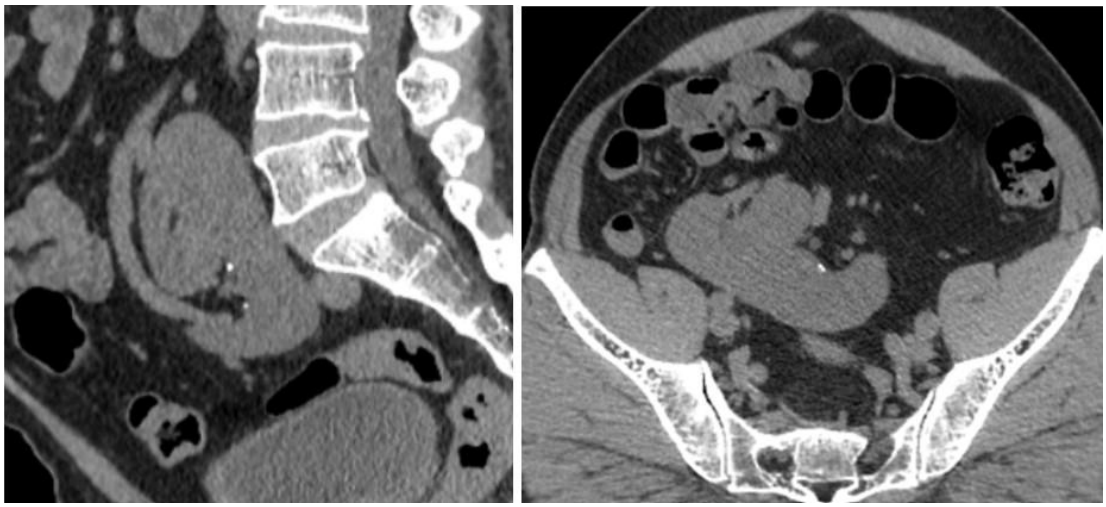

Figure 4. NCCT(axial and sagittal sections) showing few small calculi seen in the pelvis region which is giving rise to left sided ureter.

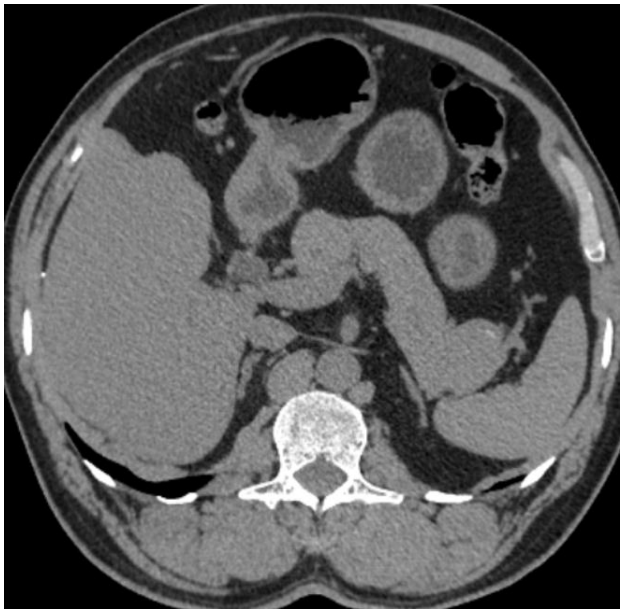

Figure 5. Axial section on CT showing straight, elongated B/L adrenal glands giving lying down adrenal sign.

DISCUSSION

Congenital urinary system anomalies account for approx. 50% of all congenital anomalies and occur in 3.3–11.1% of the population.[4] Pancake kidney is one of the rarest type of renal ectopia and fusion anomaly. It is often associated with other anomalies like genitourinary and vertebral anomalies.[3] It is possible that this anomaly arises during development, when the nephrogenic primordia gets compressed by umbilical arteries, as a result fusion of kidneys occur in the pelvis with failure to ascend.[5,7]

Pancake kidney appears as a large and lobulated renal mass in the pelvic cavity consisting of two fused lobes without an intervening septum, each lobe with a separate pelvicalyceal system and the renal pelvis is anteriorly placed. The ureters are usually short and enter the bladder normally.[4] The collecting systems are normally rotated to face anteriorly. The blood supply can be anomalous in the number and origin of arteries.[5,6] These patients are mostly asymptomatic. However, few patients present with recurrent urinary tract infections and stone formation.[7]

Imaging modalities like ultrasound, CT and MR urography are essential for the final diagnosis. CT and MR urography are considered to be better choices than US for characterization of the anomaly, evaluation of vascular anatomy, complications, and other associated abnormalities.[7] Computed tomography (CT) is the gold standard as it allows functional assessment along with delineation of anatomy, morphology and vascularity of the kidney.

Congenital renal malformations are usually incidentally detected. Ectopic kidney is at increased risk of blunt injury in abdominal trauma[8] and is more inclined to develop renal neoplasm, including Wilms tumor, renal cell carcinoma and rarely rhabdomyosarcoma.[9] For these reasons patients should be informed of their condition and a conservative approach with a long term follow-up should be included.

CONCLUSION

Pancake kidney is a rare renal fusion disorder which is usually asymptomatic but can present with recurrent UTI and stone formation.[2] The patient is usually managed conservatively.[1] In present case, this was an incidental finding on USG and for confirmation NCCT was done.

REFERENCES

1. Bakshi S. Incidentally detected pancake kidney: a case report. Journal of Medical Case Reports, 2020 Dec; 14(1): 1-6.
2. Houat AP, Guimarães CT, Takahashi MS, Rodi GP, Gasparetto TP, Blasbalg R, Velloni FG. Congenital anomalies of the upper urinary tract: a comprehensive review. Radiographics, 2021 Mar; 41(2): 462-86.
3. Lomoro P, Simonetti I, Vinci G, Fichera V, Prevedoni Gorone MS. Pancake kidney, a rare and often misdiagnosed malformation: a case report and radiological differential diagnosis. Journal of Ultrasound, 2019 Jun 1; 22: 207-13.
4. Srinivas MR, Adarsh KM, Jeeson R, Ashwini C, Nagaraj BR. Congenital anatomic variants of the kidney and ureter: a pictorial essay. Japanese journal of radiology, 2016 Mar; 34: 181-93.
5. Wong HY, Lee KH. The pancake kidney. Abdominal Radiology, 2019; 44(1): 381-2.
6. Miclaus GD, Pupca G, Gabriel A, Matusz P, Loukas M. Right lump kidney with varied vasculature and urinary system revealed by multidetector computed tomographic (MDCT) angiography. Surgical and Radiologic Anatomy, 2015 Sep; 37: 859-65.

7. Pasquali M, Sciascia N, D'Arcangelo Liviano G, La Manna G, Zompatori M. Pancake kidney: when it is not a problem. BJR| case reports, 2018 Feb; 4(3): 20170117.
8. Rosenthal AA, Ditchek JJ, Lee SK, Sanchez R, Kiffin C, Davare DL, Carrillo EH. Congenital renal fusion and ectopia in the trauma patient. Case Reports in Emergency Medicine, 2016 Nov 8; 2016.
9. Walther A, Cost NG, Garrison AP, Geller JI, Alam S, Tiao GM. Renal rhabdomyosarcoma in a pancake kidney. Urology, 2013 Aug 1; 82(2): 458-60.