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Pancake Kidney: Rare Case Report

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Abstract:
The aim of the study is to present a rare case of incidentally detected pancake kidney with radiological imaging findings in a 30 year old male patient.There are many developmental anomalies of kidney. Various types of congenital renal abnormalities such as renal agenesis, ectopic or horseshoe kidney can be encountered where one of the most rarest presentation with on pancake kidney is encountered in number that count in fingers worldwide.

Keywords:
Pancake kidney
Renal ectopia
Renal agensis
Horseshoe kidney

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I. Introduction:

Urinary tract defects, also called malformative uropathies, are ranked third behind cardiovascular and orthopaedic malformations.They include extremely varied abnormalities; some of them are specificto the kidney, ureter, bladder or urethra. There are many developmental renal anomalies. Wilmer in 1938 was the first to describe the logical categorization of fusion anomalies of the kidney while McDonald and McClellan in 1957 refined and expanded the classification given by Wilmer. (1) The classic features seen is Disc, shield, doughnut, or pancake kidneys are kidneys that have joined at the medial borders of each pole to produce a doughnut or ring-shaped mass. More extensive fusion along the entire medial aspect of the kidneys creates a disc or shield shape. Pancake kidney malformation results from complete medical fusion of the metanephric blastema at an early stage of embryonic development and is characterized by a single, flat, nonreinformmass, in a medial position within the pelvic cavity or at the level of aortic bifurcation. The renal collecting system is anterior and typically drains with two ureters or less commonly via a single ureter. Vascular of such presentation is also anomalousi.e blood flow can be supplied by multiple branches of the internal and external iliac arteries or of the branches from abdominal aorta. (2).

II. Case Report

A 30 year male patient presented to outpatient department with history of on / off right hypochondriac & right lumbar region pain for 15-20 days. Patient complains of mild dull aching pain, non-radiating, no any aggravating factors, which relief during rest. Bladder habit is normal. He denied fever, burning micturition or loss of weight and appetite. He is active, well rehydrated, with unremarkable abdominal examination. Laboratory data were unremarkable. Patient is advised for abdominal and pelvis ultrasound. Ultrasound imaging of the abdomen and pelvis demonstrated empty left renal fossa. (FIGURE I) Ectopic lobulated left kidney located in the right paramedian location in right hypochondriac region, demonstrating hypoechoic cortex and hyperechoic medulla with adequate corticomedullary differentiation. (FIGURE II) Right kidney measures approx. 79x53 mm & shows prominent renal pelvis. (FIGURE III) Left kidney measures approx. 73x48 mm. (FIGURE IV) Both kidneys appear to be fused. (FIGURE V) Lower pole of right kidney is attached upper pole of left kidney. Both sided upper ureter is visualised, thereafter its course appear to be obscured by bowel gas.

The patient was managed conservatively with analgesics. During his follow-up he symptomatically improved with disappearance of the pain. Patient was advised for further IXs like CT IVP.
Diagnosis of pancake kidney was made based on clinical presentation & radiographic USG findings.

FIGURES

FIGURE I

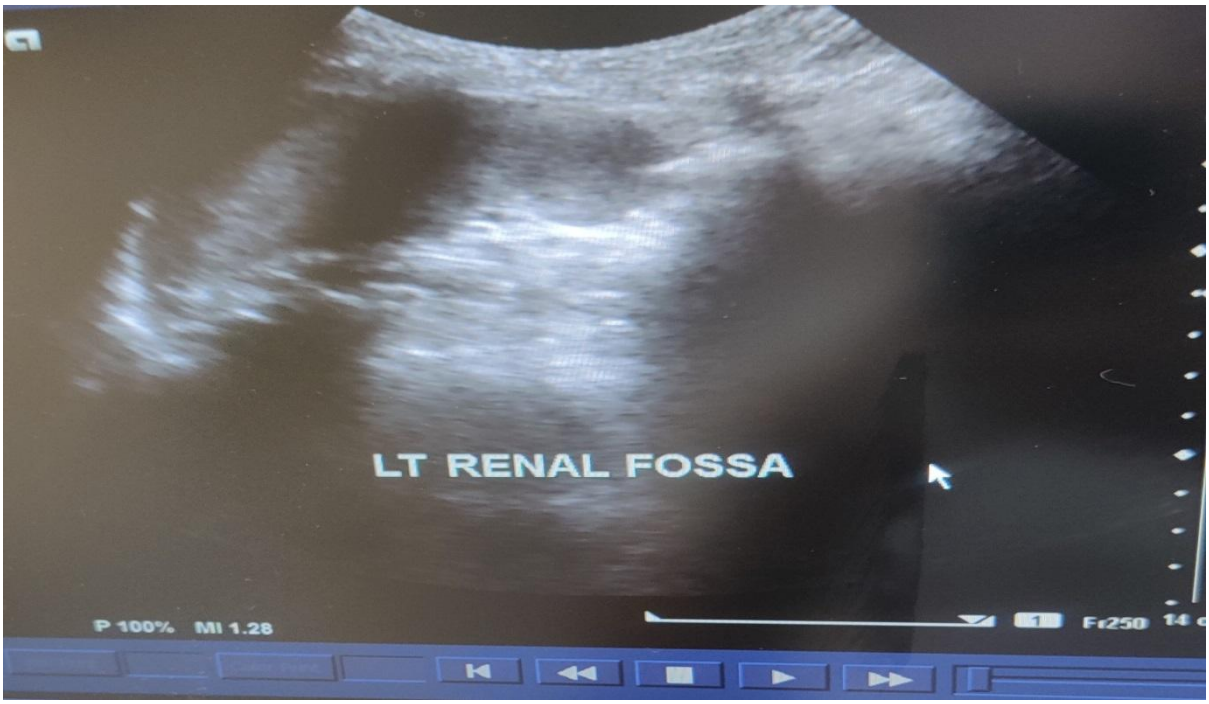


FIGURE II

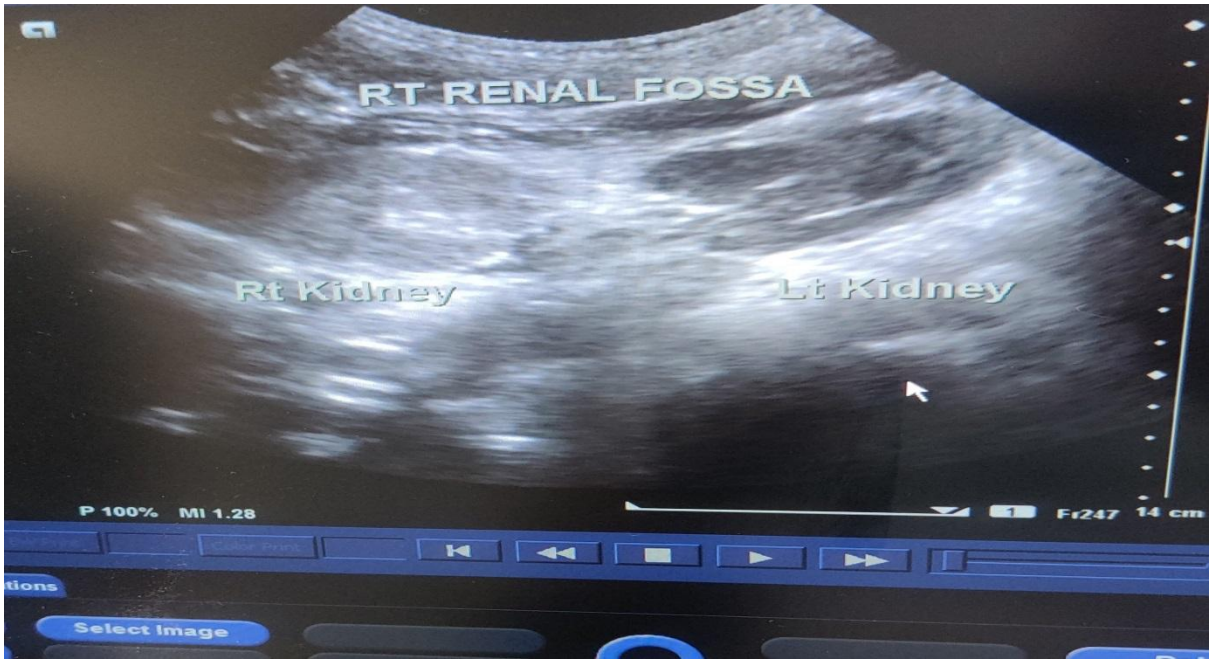


FIGURE III

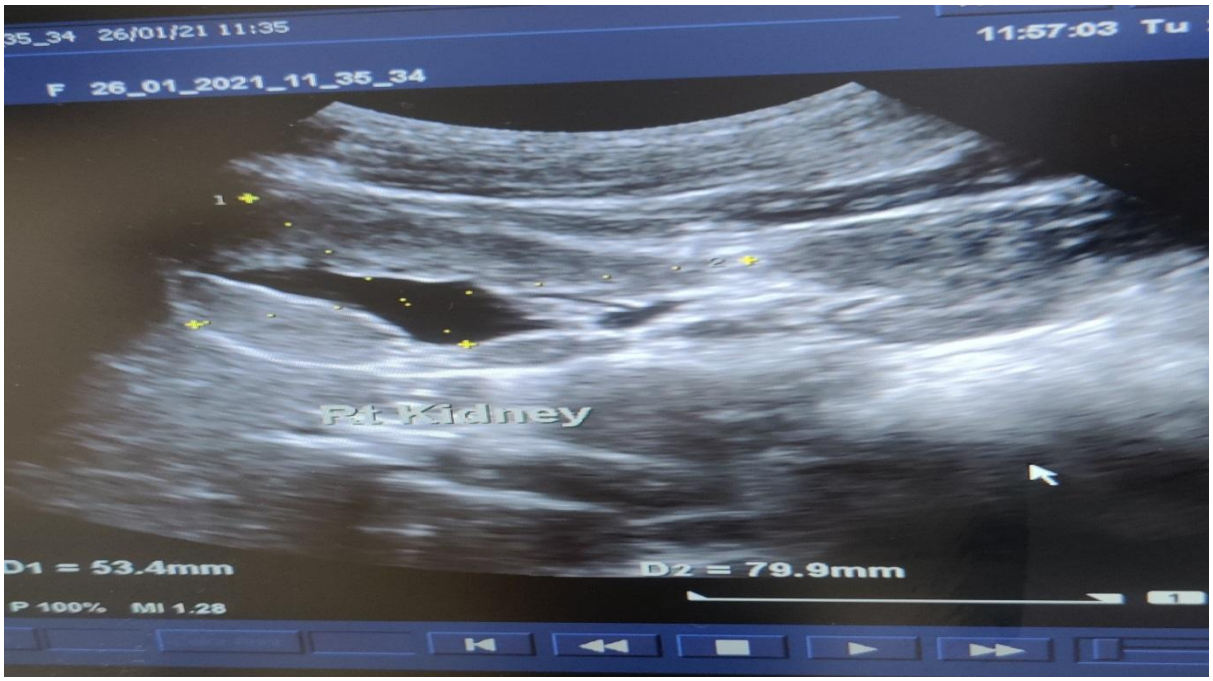


FIGURE IV

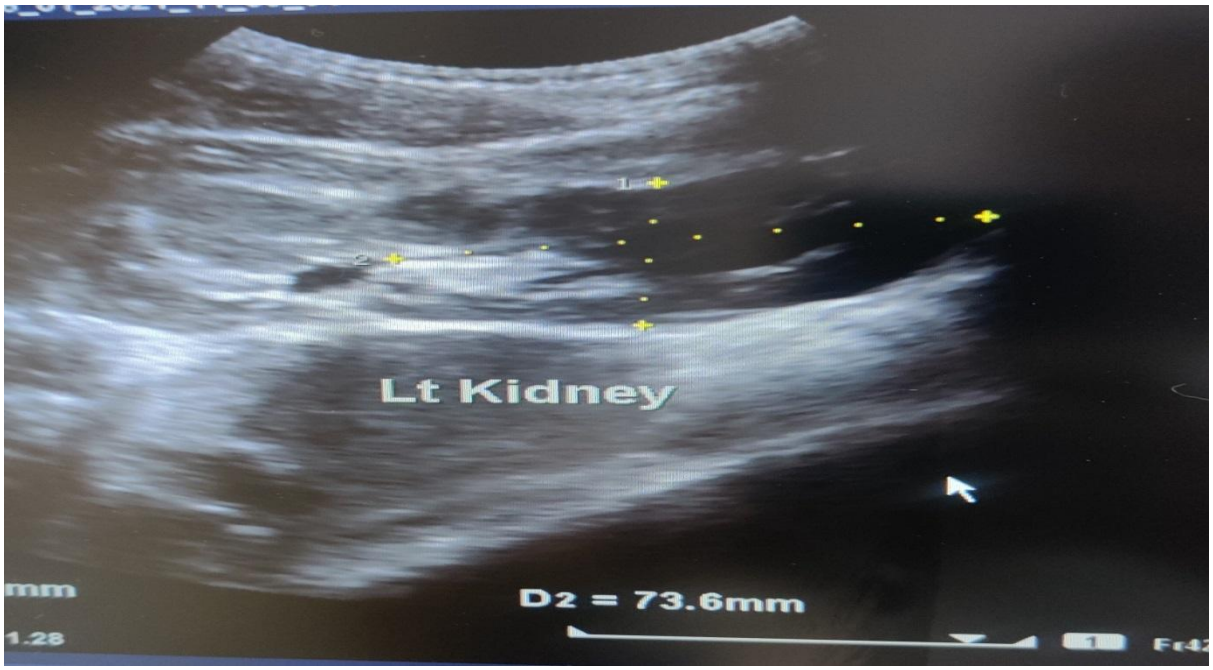
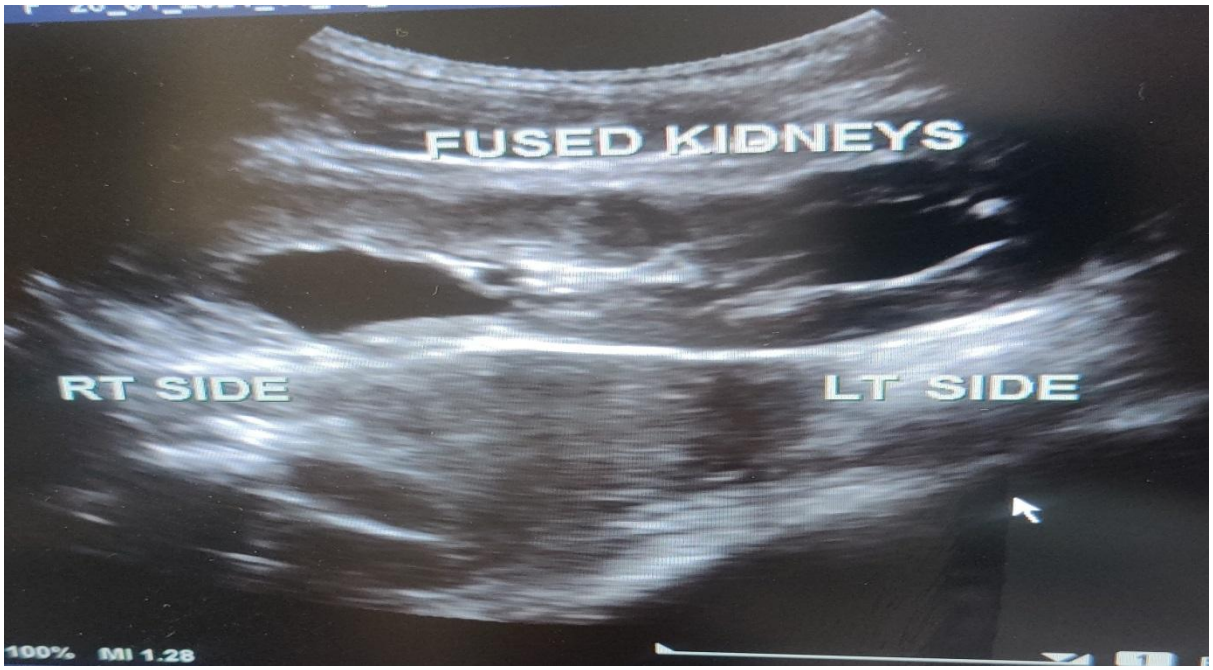


FIGURE V



III. Discussion

Kidney fusion anomalies were first described in 1938 by Wilmer. (1) There are two types of abnormalities. Pancake kidneys are connected by their poles and they form a parenchymatous mass in pelvic position. (3) There may be two normal ureters. Renal pelvis may communicate with one or two ureters. Pancake kidney is an extremely rare entity with unknown incidence. (4) Looney and Duke were first to describe the pancakekidney. (5) More men are affected than women. It can be diagnosed at any age and is frequently associated with other urinary tract defects. Pancake kidney exposes to urinary infections and renal calculi, probably caused by rotation abnormalities and the short length of ureters, which favor obstruction and stasis. Clinically, patients with pancake kidney are generally asymptomatic. They sometimes have recurrent urinary infections, abdominal pain and even extra urinary signs such as amenorrhea and iliac aneurysm. Patients with pancake kidney don't necessarily have renal insufficiency. Asymptomatic patients will haveregular checks of renal function.

IV. Conclusion

Pancake kidney is quite unusual and one of the rarest urogenital tract anomalies. Simple imaging techniques like ultrasonography abdomen and pelvis will detect the rare urogenital tract anomalies. The Conservative management is the mainstay of treatment plan in asymptomatic patients with regular follow up. Surgical intervention needed in symptomatic individuals. Our patient was diagnosed with pancake kidney incidentally by ultrasonography. The patient was asymptomatic and was managed conservatively with analgesics and advised regular follow-up.

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