A Rare Case Report on Horse Shoe Kidney in a Female Patient with Primary Infertility

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Abstract: Horse shoe kidney, a rare fusion defect affecting approximately 1:500 individuals, is characterized by the fusion of two kidneys, often located lower and closer to the front of the body than normal. This case report details a 34-year-old female with a horse shoe kidney presenting a primary infertility and recurrent UTIs. Ultrasonography revealed a malrotated left kidney fused with the malrotated right kidney in the midline anterior to the abdominal aorta. Kidney function tests and CT urography confirmed the findings, showing normal kidney function. Consultation with an urologist resulted in regular follow-up recommendations. This case presents an isolated instance of horse shoe kidney without associated congenital anomalies.

Keywords: Horse shoe kidney, fusion defect, primary infertility, ultrasonography, CT urography

1. Introduction

HORSE SHOE KIDNEY is when two kidneys are fused or joined together. A horse shoe kidney is most often set lower and much closer to the front of the body than a normal kidney. Horse shoe Kidneys are the most common fusion defects of the kidneys occurring in approximately 1:500 individuals ⁽¹⁾. The male to female incidence is $2:1^{(2)}$.

OPD of TSM medical college and hospital with complaint of primary infertility with recurrent UTI. Her married life was 13 years. All investigations of infertility were done as she was to be prepared for Diagnostic laparoscopy. Her ultrasonography of Abdomen and pelvis revealed malrotated left kidney which was ectopically placed supraumbilically and appeared to be fused with malrotated right kidney in the midline anterior to abdominal aorta as depicted in picture 1.

2. Case Report

This is a case report regarding rare case of horse shoe kidney. A 34 year old female presented to gynaecology

Picture 1: Ultrasonography of Abdomen and Pelvis

Liver is normal in size (~122 mm). Margins are regular. P no intrahepatic biliary dilatation. No obvious focal lesic Portal vein is normal in diameter.	IT IS SEEN. HEPOINE YOUR DIE HEMIEN,
Gall bladder is well distended. Walls are normal in thick CBD is not dilated. Lumen is echofree. Primary biliary o	onligence is porein.
Pancreas: Head and body appear normal in size. Tail o Parenchyma shows normal echotexture. Pancreatic o	
Spleen is normal in size (~84 mm) and malrotated. Ma echogenecity. Splenic vein is normal in diameter.	rgins are regular with uniform parenchymal
Left renal fossa is empty. Left kidney is malrotated and be fused with the malrotated right kidney in midline ar kidney.	
Bilateral kidney showing dual molety which appear to	fuse at the level of renal pelvis.
Piete tidage is ported in size (approx, 83 x 33 mm). Pa	renchymal thickness is adequate. Cortical
echogenecity is normal. CMD is maintained. Left kidney: is normal in size (approx. 87 x 33 mm). Pa	renchymal thickness is adequate. Cortical
Uringry bladder is well distended. Walls are normal in t	thickness and regular. Perivesical fat planes are
intact. Uterus: Uterus is normal in size (approx 95 x 58 x 31 mm pagmal echotexture. Endometrium measures approx.	n) and shape. Myometrium is homogenous with 3 mm in thickness and regular. Cervix is normal in
size and regular in outline. Adnexae: Both ovaries appear normal in size (RO: ap and echotexture. Dominant follicles are seen in both	
No significant abdominal lymphadenopathy is seen. All GB/CBD and renal/ureteric calculi or all bowel pa	
ultrasonography.	
IMPRESSION Left kidney is malrotated and ectopically	placed supraumbilically, appear to be
fused with the malrotated right kidney in t	Incluite different to de service
 borseshoe kidney. Bilateral kidney showing dual moiety which 	h appear to fuse at the level of renal
 Pelvis. Minimal free fluid in POD. 	()
Adv: Clinical correlation & CT urography.	- Singh
Checked by	Dr. Muktakar Singh MD (Radiodiagnosis)
Dr. Sumit (PG-2)	Assistant Professor

So, before proceeding further, her kidney function test was done which was within normal range shown in picture 2.

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ests		Result	Units Re	Page 1 of 1 ference Interval
UDNEY FUNCTION TEST	BLOOD UREA (Urease-GLDH)	17.3	mg/dl	15 - 45
	SERUM CREATININE (Enzymatic)	0.6	mg/dl	0.6 - 1.2
	SERUM SODIUM (Ion selective electrode)	140.1	mmol/l	130 - 145
	SERUM POTASSIUM (Ion selective electrode)	5.1	mmol/l	3.5 - 5.5
	Serum ionised Calcium Ion Selective Electrode	1.1	mmol/l	1.1 - 1.35
	Serum Chloride Ion Selective Electrode	96.7	mmol/l	95 - 106
	SERUM URIC ACID (Uricase-POD)	3.6	mg/dl	2.4 - 5.7

Picture 2: Kidney Function Test

To confirm the findings of USG and to evaluate function of the kidneys CT UROGRAPHY was done as shows in picture 3.

Picture 3: CT Urography

There is evidence of along the anterior & I	of diffuse peritoneal, intro ateral abdominal walls (R	amuscular & subcutaneous air densities ight>Left)- ? Post-operative.
IMPRESSION		
malrotated rigi	malrotated and ectopico ht kidney at mid pole in r rel -Likely Horseshoe kidr	ally placed, appear to be fused with the nidline anterior to the abdominal aorta at rey.
Bilateral kidney	rs showing extra renal pe	lvis as described above.
	howing simultaneous ex ormal functioning of bila	ccretion of contrast on delayed phase teral kidneys.
Please correlate cl	inically.	6/
Checked by Dr. J.A. Apurva (JR-3)	Checked by Dr. Sakshi (JR-2)	DR. Muktakar Singh MD (Radiodiagnosis) Assistant Professor

"CT UROGRAPHY" findings were:

- Left kidney is malrotated and ectopically placed, appear to be fused with the malrotated right kidney at mid pelvis pole in midline anterior to the abdominal aorta at L4vertebral level.
- Bilateral kidneys showing extra renal pelvis.
- Both kidneys showing simultaneous excretion of Contrast on delayed phase suggestive of Normal functioning Bilateral Kidneys.
- After all these investigations, UROSURGEON CONSULTATION was done and she was advised to come for regular follow up in surgery OPD.

In this case there was no other congenital anomaly associated with horse shoe kidney .On diagnostic

laparoscopy uterus with fallopian tube with bilateral adnexa appeared to be normal.

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