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Case Report

A CASE SERIES STUDY OF ECTOPIC KIDNEYS

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ABSTRACT

Aim

The objective of present study is to observe the record and study 4 cases of ectopic kidneys situated other than normal position.

Place of Study

Two cases were studied from Bangalore and Kolar district and two cases were studied from Madurai district.

Period of Study

From2011 to 2013 (A three years study)

Material and Methods

Two cases one male from Kolar district aged 47 years and another female aged 53 years of age from Bangalore district and two cases of females of 60 and 65 years of age respectively constituted the materials for the present study In those 2 cases of Bangalore and Kolar districts, there was family history of renal anomalies while in the other two families,there no family history of renal anomalies. In all 4 cases, proper antenatal histories were taken relevant investigations were done proper findings were noted.

Results

In the present study, ectopic kidneys were seen more in female than in males then they were compared and correlated with available literatures.

Conclusion

This study will be of great importance to all surgeons and to all urologists. It also gives abnormal positions of kidney where all clinicians should aware off hence reported.

Key Words: *Ectopic Kidneys –Pevic Kidney Hypertrophy of Kidneys –Abnormal Position of Kidneys, Renal Ectopia*

INTRODUCTION

During intra uterine life, fetal kidney appears as buds within the pelvis near the urinary bladder. As they develop they ascend upwards towards normal position near the rib cage posteriorly. Sometimes one of the kidney fails to ascend upwards, it may remain in the pelvis. Commonly one kidney will not ascend but rarely two kidneys may remain in the pelvis resulting in both kidneys lying on the same side (Russell *et al.,* 2000). Sometimes both kidneys may be fused and situated on the same side along the midline. They are known as Crossed fused renal ectopia having incidences of 1 in 1000 live births (Dunnick, 2001)**.** According to literatures incidence of ectopic kidneys is 1:500 to 1:110 and also incidence of one normal and one pelvic kidney is 1:800to 1:3000 (Gray and Skandalakis, 1972). According to Bergman *et al.,* incidences of ectopic kidney are 1:500 to 1:110 followed by incidences of ectopic thoracic kidney 1:13000; solitary kidney 1:1000 solitary pelvic kidney 1:22000 one normal and one pelvic kidney 1:3000 and crossed renal ectopia 1:7000 (Bergman *et al.,* 2009).Other anomalies of urogenital systems are multicystic dysplasia in a fused or unfused crossed kidney (Rossenburg *et al.,* 1984; Nussbcm *et al.,* 1987) ureterocoele, patent urachus (Tranidis and Tenhorst, 1982) hydronephrosis, ectopic ureteric orifice, vesicoureteric reflux, vaginal agenesis (Caldamore and Robinowitz, 1982) hypospadias etc. Pelviureteric junction obstruction is also noted Samaila I Shuaibu (FWACS) and Shuaib K Aremu (FWACS) (2011).

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CASES

Two cases of ectopic Kidney were seen from Madurai district.

A Case Series Study of Ectopic Kidneys Seen in Four Cases

Series First Case

An elderly female aged 65 years came from Madurai district to out patient department of Medicine at Velammal Medical College Teaching Hospital & Research Institute with history of cough with expectoration, malaise, easy fatigability since one week. She was known case of bronchitis and history of NSAID abuse was present. She was also known case of hypertension and diabetes. She was from low economic status .She was neither aware of any history of anomalies nor ectopic of kidneys in the family in the past.

Family History

She is mother of two children of nonconsanguneous marriage. No history of abortion, still births and hydramnios (Bad obstretric history-BOH).

Investigations has reveled high levels of renal parameters, namely urea 66, Serum creatinine -1.9, Haemogram showed mild degree of anaemia (9.2%).

IV) Other parameters were within normal limits

V) Ultrasound of the abdomen done on 13.06.13 at Radiological Department of Velammal Medical College Teaching Hospital revealed that her Left kidney not seen in left renal fossa, abdomen or in the pelvis –Hypoplastic/Aplastic Kidney associated with compensatory enlargement of right kidney.There was enlargement of gall bladder with no calculus. In the pelvic region, uterus was not visualised as she had undergone Hysterectomy (Post hysterectomy status).

vi) C-T Scan of the Abdomen revealed done on 18.06.13 at Radiological Department of Velammal Medical College Teaching Hospital Whole abdomen was visualised from the Xiphisternum to pubis without administration of intravenous contrast left kidney situated in left pelvic region measuring 8.6cmx3.6 cm with mild dilatation of pelvicalyceal system. No calculus seen right kidney was seen in right renal fossa measuring 10.7cmx4.2cm.also showed mild dilatation of pelvicalyceal system. No calculus seen.Uterus not visualised because she has undergone Hysterectomy (Post hysterectomy status).

Series Second Case

An elderly female aged 60 years known COPD from Madurai district attended the out patient department of Medicine at Velammal Medical College Teaching Hospital & Research Institute with history of easy fatigability associated with extreme weakness and cough with expectoration since two weeks. She was also known case of hypertension and but not diabetic and also from low economic status. She also had HISTORY of abuse of NSAID. Her urine frequency and urine output was normal.

Investigations

I) Haemogram showed normal within limits.

II) Biochemical investigations revealed elevated renal parameters with Glomerulous Filtration Rate (GFR) 21

III) UltraSound of the Abdomen: done on 09.05.13 at Radiological Department of Velammal Medical College Teaching Hospital revealed left kidney seen in the pelvic region on the left side associated with compensatory hypertrophy of right Kidney measuring 10.3cm x4x1.1cms.and was normal.

Uterus: Intact and was in the post menopausal status.

Two cases were from 2 district of Karnataka, one from Bangalore and other

III) *Series Third Case*

A male aged 58 years came with history of pain abdomen in one of the nursing home at Bangalore .He was thoroughly investigated, with haemogram and ultra sound. To his surprise he was found to have his left kidney in the pelvic region. He has no other anomalies but he was suffering from peptic ulcer due irregular food habits and smoking .He was not diabetic nor hypertensive. Right kidney was normal and not hypertrophied. There was no history of anomalies in his family and had consanguineous marriage.

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IV) *Series Fourth Case*

Elderly female aged 51 years came with history of lower abdominal pain since two weeks. With detailed history, clinical examination was done followed by relevant investigation. By ultrasound investigation, she was found to have right kidney in pelvic region with compensatory hypertrophy of left kidney associated with urinary tract infection. Immediately she was put on antibiotics for urinary tract infection. There was no family history of similar complaints. She was not diabetic, nor hypertensive and she was from poor socioeconomic status.

DISCUSSION

It is developmental anomaly occurring as result of premature arrest of ascending foetal kidney resulting in abnormal location of the organ during intrauterine life of foetus. So there is premature halt of ascending kidney receives blood supply from the iliac arteries and abdominal aorta when they are in the pelvis. Further up, when they ascend they receive blood supply from abdominal aorta and branches from the iliac vessels degenerate. When the iliac vessels do not degenerate, then polar arteries along with more than one accessory artery arise from the ectopic caudal kidney (Sadler, 1990; Cocheteux *et al.,* 2001). In cases of more than one renal artery, it is more associated with Hypertension (Gokalp *et al.,* 2010). Kidneys during their development, they ascend and then pass through umbilical arteries arterial fork, but some times they fail to ascend upwards so they remain the pelvis very nearer to common iliac artery. So it is known as Pelvic Kidney Sometimes both kidneys are pushed close to each other during passing through their arterial fork resulting in the fusion of both kidneys in their lower poles giving rise to horse shoe shaped kidney (Sadler, 2010). Usually patients with this type kidney may not suffer from any clinical symptoms, but few suffer from blockade, stones and urinary tract infections. The nephrons may get damaged causing renal failure .At this juncture renal failure is very common in unilateral ectopic pelvic kidney so proper care should be taken to the other healthy kidney (David Mangusan, 2010).

Samaila I Shuaibu and Shuaib reported a case of ectopic kidney in the right iliac fossa in a 54 years male who had complained of pain abdomen, progressive in nature worsening while walking. On physical examination, he had tenderness in the right iliac fossa his chest, cardiovascular systemwwere normal. All relavent investigations were done his chest x-ray was normal. But his intravenous urogram showed grade 4 hydronephrosis with dilated calyces and normal kidney on controlateral side He was not hypertensive CT scan and isotope renography were not done (Samaila I Shuaibu (FWACS) and Shuaib K Aremu (FWACS), 2011).

Birmole detal reported a cases of renal crossed ectopia in a two years old male child accidentally who had L shaped fusion of both kidneys diagnosed by intravenous pyelography associated with hydronephrosis. The right kidney was in normal position .Later child was operated by Trans peritoneal approach (Bismole *et al.,* 1993). It was first described by Pannorlus in 1654 (cited by Bimole *et al.,* 1993). Kidneys were classified into four types by McDonald and McClellan (1957) (I) crossed renal ectopia with fusion, (II) crossed renal ectopia without fusion, (III) solitary crossed renal ectopia (IV) bilaterally crossed renal ectopia (cited by Bimole *et al.,* 1993; McDonald and McKlellan, 1957). The common symptoms complained by the patients are pain abdomen, any mass per abdomen, haematuria, Infections of urinary tract and dysuria (cited by Bimole *et al.,* 1993; Marshal and Freedman, 1978). In crossed ectopic kidneys associated condition are nephrolithiasis, tumours, reflux, hydronephrosis (cited by Bimole *et al.,* 1993; Kyrarianic *et al.,* 1979). The incidence of crossed ectopic kidneys is 1:2000 to 1:7000 autopsies (cited by Bimole *et al.,* 1993).

Present Study has shown 4 cases ectopic position of kidneys. Out of four cases, three ectopic kidneys were seen in females and one in male. Two were from Madurai district and two were from Bangalore and Kolar districts respectively. All the four kidneys were found in the pelvic region out of them three kidneys which were present on the left were affected and in one case, kidney present on right side was affected. All the kidneys were functional. Three cases had compensatory enlargement of controlateral kidneys were in normal site. There were no other associated anomalies in them. In all 4 patients, there was no mass per

abdomen, haematuria crossed ectopic kidneys. No associated condition of like nephrolithiasis, tumours, reflux, hydronephrosis calculus as cited by Bimole *et al.*, (1993). No crossed ectopic kidneys and fusion of kidneys, and no urinary tract infections except one present elderly female aged 51 years from Kolar district. No anomalies of other organs were found in above patients.Present study has shown more incidences in females than in males.

Conclusion

Compensation of controlateral kidneys are due to abnormal position of affected kidneys has lead to increased renal parameters. Proper advice has to be given by the physicians so as to take care of the controlateral kidneys in order to prevent further damage to the healthy controlateral kidney.

Carry Home Message

NSAID, Aminoglycosides, and other nephrotoxic drugs should be avoided in patients with ectopic kidney in order to preserve normal functioning of the normal controlateral kidney.

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