

## Case Report

# Incidental discovery of ectopic kidney in a patient with psychogenic erectile dysfunction: a case report in Delta state Nigeria

Prince C. Ubani<sup>1</sup>, Felix O. Ajayi<sup>2\*</sup>, Emmanuel O. Aina<sup>3</sup>, Nzubechi M. Okpara<sup>4</sup>,  
Faith C. Mba<sup>4</sup>, Edwin O. Ogbeide<sup>5</sup>, Peace S. Ogaranya<sup>6</sup>, Oshiomoba I. Divine<sup>5</sup>,  
Olumide S. Olusi<sup>3</sup>, Tahir A. Ibrahim<sup>5</sup>, Oyefia-Emakpo Unuakpotovo<sup>7</sup>,  
Chisomebi M. Obi-Ekekwe<sup>8</sup>, Christian K. Ibeh<sup>9</sup>

<sup>1</sup>Saint John The Baptist Catholic Hospital and Maternity, Agbor, Delta State, Nigeria

<sup>2</sup>University of Ilorin Teaching Hospital, Ilorin, Kwara, Nigeria

<sup>3</sup>Ekiti State University Teaching Hospital, Ado-Ekiti, Ekiti state Nigeria

<sup>4</sup>Abia State University Teaching Hospital, Aba, Abia State, Nigeria

<sup>5</sup>Edo State University, Uzairue, Nigeria

<sup>6</sup>Rivers State University Teaching Hospital, Port Harcourt, Nigeria

<sup>7</sup>Military Hospital, Port Harcourt, Nigeria

<sup>8</sup>General Hospital Ifako-Ijaiye, Lagos, Nigeria

<sup>9</sup>Nnamdi Azikwe University Teaching Hospital, Nnewi, Anambra, Nigeria

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### \*Correspondence:

Dr. Felix O. Ajayi,

E-mail: [ajayifaf@gmail.com](mailto:ajayifaf@gmail.com)

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### ABSTRACT

Ectopic kidney is described as the failure of either one or both kidneys to ascend into their anatomical position. The major classifications are simple ectopia (thoracic, abdominal and pelvic) - abnormally located kidney on the same side and cross ectopia- abnormally located kidney on the opposite side. It is a rare occurrence with a prevalence of 1 in 3000 and very limited data especially with the co-association with erectile dysfunction (ED). This is a case report of a 47-year-old male civil servant with difficulty sustaining penile erection noticed one week before presenting at the hospital facility. Prior to onset of symptom, he had over 40-hours weekly work-relate. He had no chronic diseases. Although overweight, general and systemic examination findings were normal. Investigations done were ultrasound and computed tomography scan of the Abdomino-pelvic region which revealed a right kidney located in the right iliac fossa and pelvis respectively. He was subsequently counseled on the need for adequate rest and stress management. A rare incidental finding of ectopic kidney co-occurring with ED, this case underscores the importance of maintaining a high index of suspicion for congenital renal anomalies, especially when adult patients present with non-specific genitourinary symptoms such as ED. Although, ED can be asymptomatic, their presence can lead to complications such as urinary tract infections, nephrolithiasis, and renal dysfunction. In this case, the discovery of a right-sided pelvic ectopic kidney in a patient with ED highlights the importance of comprehensive diagnostic evaluation in patients presenting with urological symptoms.

**Keywords:** Ectopic kidney, Erectile dysfunction, Ectopia

### INTRODUCTION

The kidneys are bean-shaped paired organs located retroperitoneally between the transverse processes of

T12-L3 vertebrae with the left kidney being more superior in position than the right kidney due to the liver on the right side.<sup>1</sup> Erectile dysfunction (ED), also described as impotence is the inability to achieve or

sustain a penile erection long enough to have sexual intercourse.<sup>2</sup> The urogenital system (the system that encompasses the urinary system and the genital system) stem its origin from the intermediate mesoderm which gives rise to the nephrogenic cord and the gonadal ridge subsequently becoming the urinary system and the reproductive system respectively.<sup>3</sup> The urinary system begins to form during the 4th week with series of important embryological process through the 8th week of gestation when both kidneys ascends into their respective anatomical location. Failure of a successful ascent of one or both kidney results in ectopia of the involved kidney, a rare occurrence with an incidence rate of 1 in 3000.<sup>3-7</sup>

A population-based ultrasound survey in Coast Province, Kenya, examined 3,118 residents and identified 11 cases of simple renal ectopia, resulting in a prevalence of 0.35%. This study highlighted an unusually high prevalence of ectopic kidneys in the region.

In Nigeria, there is limited data on the incidence of ectopic kidneys. A retrospective study done between 2017 and 2020 at the University of Abuja Teaching Hospital reviewed 10,071 pediatric cases and identified 33 cases of congenital anomalies of the kidney and urinary tract (CAKUT), representing a prevalence of 0.3% among pediatric patients and 10.1% among renal cases. Among these, ectopic kidneys accounted for 12.1% of CAKUT cases.<sup>5</sup>

We report the case of a 47-year-old male civil servant who presented with ED. Imaging investigations revealed an right pelvic ectopic kidney, representing the first documented case of this association in Delta State, Nigeria. This is the first reported case of ectopic kidney in Delta State, Nigeria and one of the few recorded case report of ectopic kidney in Nigeria and first reported case with a co-existing ED in Nigeria and sub-Saharan Africa.

## CASE REPORT

This is a 47-year-old male civil servant, married, in a monogamous family setting with difficulty sustaining penetrative penile erection, and declining interest in sexual activity with his wife, for one week prior to presentation.

The patient who was previously well until he noticed an onset of difficulty maintaining erection during intercourse over the previous week. There was no associated pain, trauma, or other urinary or systemic symptoms. No history suggestive of depression (major depression index score: 12), performance anxiety, or post-traumatic stress disorder. The patient reported significant work-related stress, working over 40 hours per week.

No history of head trauma, cerebrovascular accident, thyroid dysfunction, obstructive respiratory disease, hypertension, diabetes mellitus, or renal disease.

No history suggestive of hypogonadism or recurrent urinary tract infections.

Hemoglobin type unknown; no history of sickle cell crises, hospital admissions, or blood transfusions. No use of herbal medications.

Social alcohol consumption, moderate intake of carbonated drinks.

Denies smoking and recreational or routine drug use.

Patient is happily married for more than 10 years with history of adequate penetrative sexual intercourse in the past and there is no history of multiple sexual partners. Prior to presentation at our facility, patient had not sort for medical intervention whatsoever. There is no family history of similar symptoms. Prior to presentation at our facility patient had not sort for any intervention whatsoever.

There is no family history of similar symptoms.

### **General examination**

BMI 29.38 kg/m<sup>2</sup> (weight 90 kg, height 1.75 m), no remarkable findings.

### **Urogenital system examination**

Normal adult male external genitalia, normal male pattern hair distribution.

### **Systemic examination**

Cardiovascular, respiratory, neurological, and abdominal examinations were unremarkable.

The laboratory investigation findings were essentially normal except the kidney function test which showed elevated urea and creatinine levels.

### **Abdominopelvic ultrasound**

The right kidney was located in the right iliac fossa with bowel loops occupying the renal fossa, the left kidney was located in the renal fossa; both kidneys were normal in size with preserved cortico-medullary differentiation (right: 93×31 mm, left: 118×47 mm).

### **Computed tomography scan of the abdomen**

Right ectopic kidney located in the pelvis antero-medial to the right psoas muscle measuring 8.5×3.9 cm with no demonstrable renal stone, hydronephrosis or peri-nephric collection bilaterally.

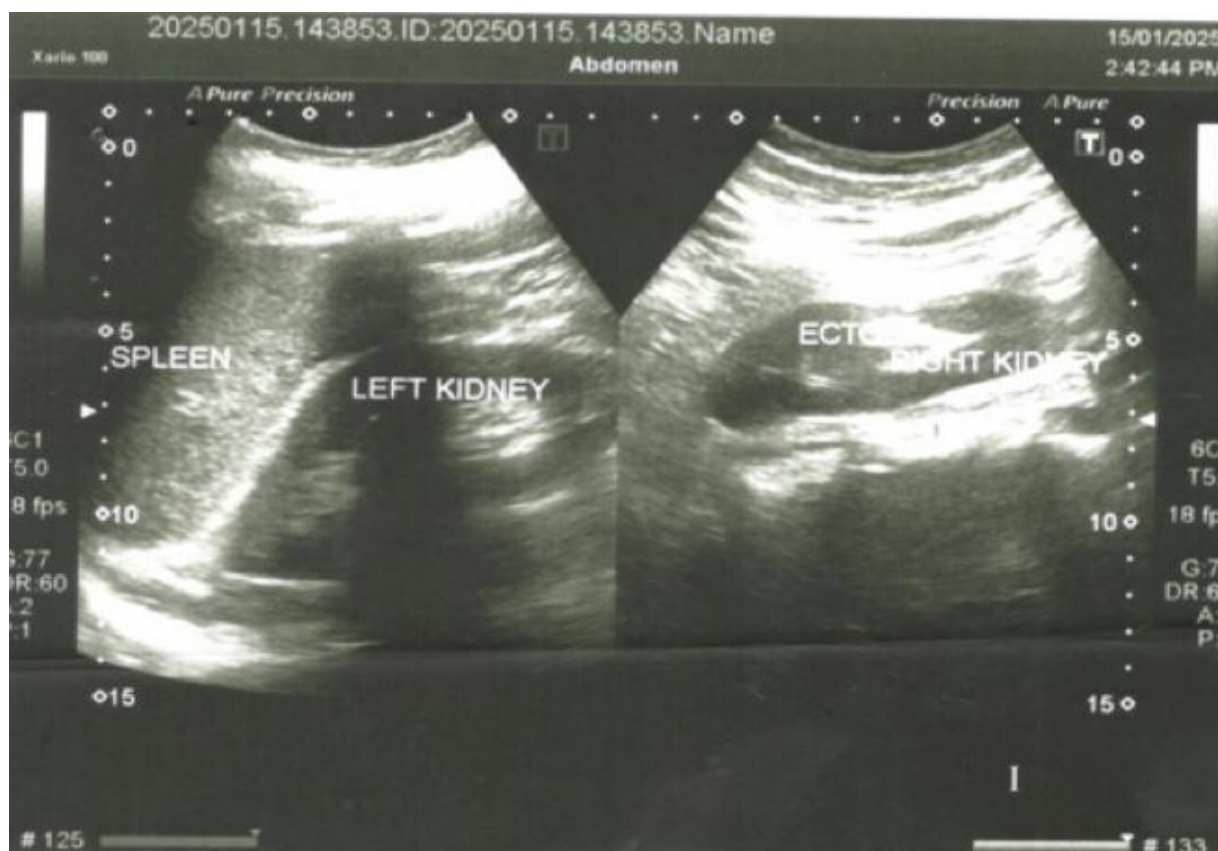
Patient was counseled on the need for adequate rest and stress management with the following recommendations

including re-evaluation and negotiations of a more tenable working hours with employer, yoga exercise and meditation. Patient was also counseled on the need for a healthy weight reduction via regular exercise and healthy diet. Patient was also counseled on possible use of medical correction of ED and other interventions including vacuum erection device (VeDs), penile implant and low-intensity Extracorporeal Shock Wave therapy

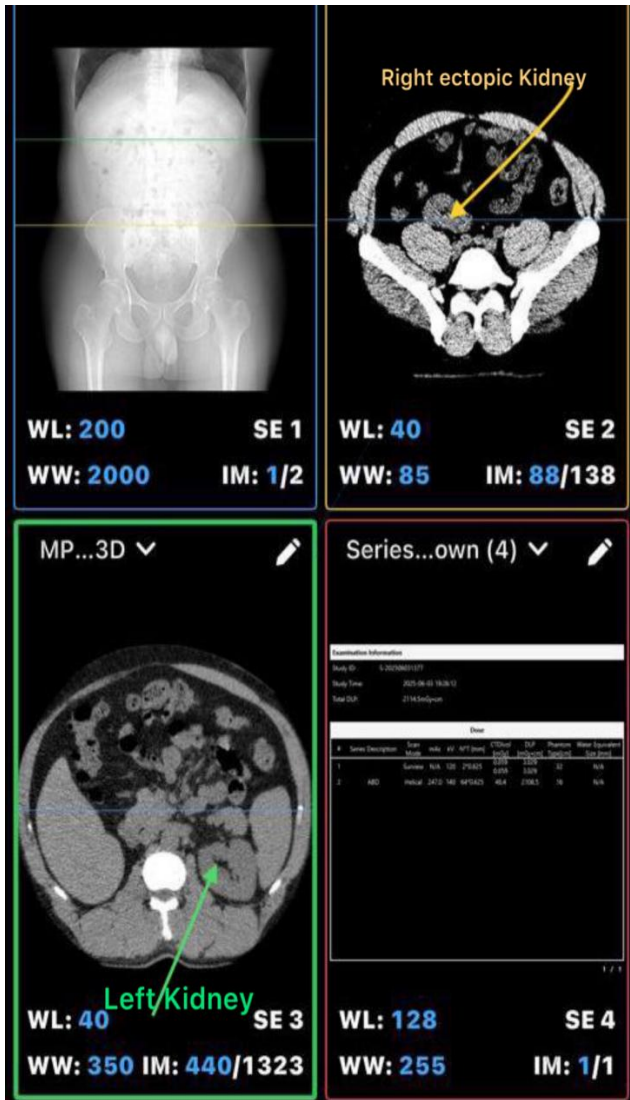
(Li-ESW) should the aforementioned lifestyle and diet regulation and control measure fail. Patient was warned and counseled on the need to avoid physical confrontations and all forms of contact sport considering the location of the ectopic kidney with a referral to a Nephrologist sent on account of the elevated urea and creatinine. Patient regained normal penetrative erection after having adhered to the directives given.

**Table 1: Laboratory test results.**

Investigation	Result	Normal value (unit)	Clinical significance
<b>Testosterone</b>	5.50	2.2 - 10.5 (nmol/l)	Normal
<b>Prostate specific antigen</b>	0.7	0-4 ng/ml	Normal
<b>HbA1C</b>	5.89	4.00-6.50 (%)	Normal
<b>Hemoglobin</b>	13.9	13.5-17.5 (g/dl)	Normal
<b>White cell count (WCC)</b>	3.87 x 10 <sup>9</sup> /L	3.5-10 x 10 <sup>9</sup> /l	Normal
<b>Fasting lipid profile</b>			
LDL	106	<100 (mg/dl)	Mildly elevated – high cholesterol level
HDL	40	40-60 (mg/dl)	Normal
Triglycerides	169	50-160 (mg/dl)	Elevated – high cholesterol level
Total cholesterol	190	80-200 (mg/dl)	Normal
<b>Electrolyte urea and creatinine</b>			
Creatinine	2.3	0.3-1.5 (mg/dl)	Elevated – suggest renal impairment
Urea	60	11-55 (mg/dl)	Elevated – consistent with renal dysfunction
Sodium	149	135-150(mmol/l)	Normal
Chloride	104	96-106(mmol/l)	Normal
Potassium	4.0	3.4-5.3(mmol/l)	Normal



**Figure 1: Abdominal ultrasound from left to right, the left kidney in the left renal fossa measuring 118×47 mm with preserved corticomedullary differentiation and the ectopic right kidney in the iliac fossa.**



**Figure 2: CT images showing the left kidney and the ectopic Right kidney (images viewed with IDV-IMAIOS DICOM viewer).**

**DISCUSSION**

In this case report, the patient's incidental finding of right-sided pelvic ectopic kidney highlights a rare instance of this anomaly in a male patient presenting with ED. The kidney develops intrauterine beginning from the 5th week from the intermediate mesoderm and ascends to the renal fossa at the posterior abdominal wall within the 6th-9th week. Failure of this ascension gives rise to the development of ectopic kidney.

While the condition is rare in the general population, it raises important clinical questions regarding the association between ectopic kidneys and ED and the risks associated with such anomalies.

Even though it is mostly asymptomatic, people with ectopic kidney are at risk of developing long term renal sequelae such as decreased renal function, higher rate of

urinary tract obstruction, kidney stones, urogenital cancer and end stage kidney disease. A retrospective study by Amine et al, covering a series of 30 cases and done over a period of 18 years, revealed an association between ectopic kidney and urolithiasis in 78.57%, hydronephrosis in 14.28%, kidney tumor in 7.14%, and non-functioning kidney 14.28% of cases.<sup>8</sup> However, these were not present in our case.

Most reported cases of ectopic kidney have been in asymptomatic patients (as seen in this case) with diagnosis of it made as an incidental finding.

This patient had elevated creatinine and urea, which raised suspicion of a renal pathology as the underlying cause of the ED, as chronic kidney disease is identified as one of the causes of ED.

Pelvic kidney, as present in this patient, is the most common type of ectopic kidney seen in 60% of cases.<sup>8</sup>

Further imaging modalities indicated in the setting of a discovery of an ectopic kidney include voiding cystourethrogram; to rule out vesico-ureteral reflux, and renal radionuclide scans, to compare function of the affected kidney with the normal contralateral kidney and to detect any evidence of kidney scarring. These were not done in this case due to the paucity of funds and unavailability of facilities for static and dynamic renal radionuclide scans in our center. Also, as the patient was lost to follow-up, we could not ascertain if he was reviewed by the nephrologist and what plans were made for future monitoring of kidney function.

**Strength and limitations**

This case report offers several important strengths. First, it highlights a rare and incidental finding of a right ectopic kidney in an adult male presenting with ED—an association that is seldom documented in both African and global literature. Second, the report contributes to a scarce body of data on renal anomalies from Nigeria, particularly from Delta State, where region-specific epidemiological evidence is limited. Third, it draws attention to the broader clinical implications of seemingly unrelated symptoms, emphasizing the role of routine imaging in uncovering latent congenital anomalies. This report is however not without limitations and this includes the absence of an advanced imaging such as renal scintigraphy or MRI which restricts the functional assessment of the ectopic kidney. Additionally, the patient’s ED was not evaluated through endocrine profiling or urological studies, limiting the ability to attribute causality. The single-patient design also restricts generalizability, and the lack of long-term follow-up data limits insight into the progression or management outcomes of the kidney anomaly. "Despite these limitations, this case provides a valuable platform for generating hypotheses and highlights overlooked clinical correlations in urogenital health."

## CONCLUSION

This case underscores the critical importance of maintaining a high index of suspicion for congenital renal anomalies, especially when adult patients present with non-specific genitourinary symptoms such as ED. It demonstrates that anatomical variants like ectopic kidneys, though often clinically silent, may have significant implications for renal health and systemic function. In regions like Delta State, Nigeria—where diagnostic infrastructure may be limited—the incidental discovery of such anomalies presents a unique opportunity to intervene early, prevent long-term complications such as chronic kidney disease, and initiate appropriate multidisciplinary care. Ultimately, this case challenges clinicians to look beyond the obvious, advocate for thorough diagnostic evaluations, and appreciate the subtle but consequential interplay between structural renal anomalies and broader aspects of male reproductive health.

Ectopic kidneys are a rare but clinically significant congenital anomaly. While they are often asymptomatic and detected incidentally, their presence can lead to complications such as urinary tract infections, nephrolithiasis, and renal dysfunction. In this case, the discovery of a right-sided pelvic ectopic kidney in a patient with ED highlights the importance of comprehensive diagnostic evaluation in patients presenting with urological symptoms.

While no direct relationship was found between the ectopic kidney and ED in this patient, the co-existence of these conditions raises important questions for future research. It is crucial to monitor individuals with ectopic kidneys for potential complications, including CKD, and provide appropriate interventions as needed. Further case studies and research are needed to fully understand the long-term implications of ectopic kidneys, particularly in relation to sexual health and renal function.

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