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A Rare Case Report Of Incidentally Picked Up Ipsilateral Renal Agenesis, Blind Ending Proximal Megaureter And Ureterocele In An Adult

Astha Agrawal[1], Ashwin Kumar. A[*2], Nisarga B V[3], G. Murugan[4]

[1]Post graduate, Department of Radiodiagnosis, Sree Balaji Medical College and Hospital, 7 Works Road, Chromepet, Chennai, Tamilnadu, India- 600044

Email ID: asthagkp@gmail.com

[*2]M.D, Radiodiagnosis, MICR, Associated Professor, Department of Radiodiagnosis, Sree Balaji Medical College And Hospital, 7 Works Road, Chromepet, India- 600044

[3]Post graduate, Department of Radiodiagnosis, Sree Balaji Medical College And Hospital, 7 Works Road, Chromepet, Chennai, Tamilnadu, India- 600044

Email ID: bvn.sachu@gmail.com

[4]DMRD, M.D, Radiodiagnosis, Professor and Head of Department, Department of Radiodiagnosis, Sree Balaji Medical College and Hospital, 7 Works Road, Chromepet, India- 600044

Email ID: drmurugan@yahoo.com

***Corresponding Author:**

Ashwin Kumar. A

Email ID: ashgilli@gmail.com

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ABSTRACT

Congenital renal anomalies are the most common birth defects. They are detected antenatally. If not, they can manifest in adulthood with variable presentation. Here we present a case of 30-year-old male patient who presented with left lumbar pain and recurrent UTI. On Radiological evaluation he was found to have unilateral left renal agenesis with ipsilateral cranial blind ending megaureter and ureterocele.

Keywords: *Renal agenesis, Blind ending ureter, Megaureter, Ureterocele.*

1. INTRODUCTION

Unilateral renal agenesis (URA) refers to the congenital absence of one kidney, caused by inadequate stimulation of the metanephric blastema by the ureteral bud. This may result from issues with the ureteral bud's development or the formation of the mesonephric duct during embryonic development. (1) If not identified before birth, URA might go undiagnosed until adulthood. Typically, it is asymptomatic due to the compensatory hypertrophy of the contralateral kidney. However, about one-third of cases are associated with other congenital abnormalities of the kidneys and urinary tract (CAKUT), which can lead to symptoms. Rarely, the postnatal regression of multicystic dysplastic kidneys results in a solitary kidney. Primary megaureter is a term that includes all cases of megaureter caused by an idiopathic congenital alteration at the vesicoureteral junction. A ureter with a diameter of 7 mm or more is considered a megaureter. Ureterocele is the cystic dilation of the intravesical segment of the ureter and may be associated with either a single or duplex ureter. This congenital defect involves obstruction of the meatus, with the ureterocele being a hyperplastic response to this obstruction. Ureteral duplication occurs in about 75% of patients with ureterocele. (2). 48% of patients with unilateral renal agenesis present with other urological abnormalities including primary vesicoureteral reflux (28%), obstructive megaureter (11%), and ureteropelvic junction obstruction (3%) (3).

2. CASE REPORT

30-year male patient presented with left lumbar and left lower quadrant pain for 4 days and recurrent urinary tract infection relieved by medications. There was no history of fever, or gastrointestinal complaints. No complaints of dysuria/ obstructive

lower urinary tract symptoms. Total leukocyte count was normal. On examination tenderness was present in left pelvic area without rebound or guarding. Labs revealed RBC 1-2 and WBC 50 on high power field in urine analysis report.

3. IMAGING FINDINGS

Ultrasound examination: Transabdominal ultrasound shows normal right kidney and right ureter, right kidney measured 9.8 x 5.5 cm (*Figure 1-A*). There was absence of left kidney and left renal artery (*Figure 1-A* and *Figure 1-B*). Ultrasound findings also revealed a partially filled urinary bladder with a left ureterocele (*Figure 1-C*).

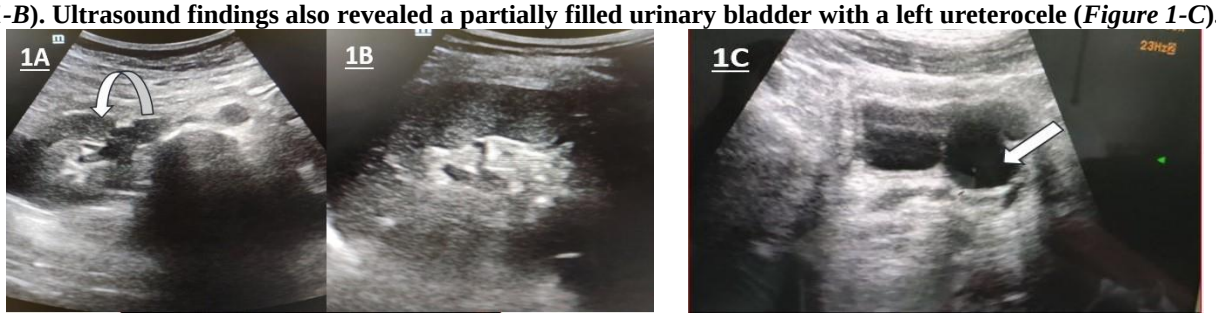

Figure 1-A: Greyscale transabdominal ultrasound showed normal right kidney (curved white arrow) and right ureter, right kidney measured 9.8 x 5.5 cm with absent left kidney and left renal artery.

Figure 1-B: Greyscale transabdominal ultrasound showed absent left kidney in the left renal fossa.

Figure 1-C: Ultrasound findings also revealed a partially filled urinary bladder with a left ureterocele (straight white arrow).

Ct parameters: NCCT evaluation showed absence of left kidney in left renal fossae (***Figure 2-A)***. Contrast CT delayed coronal image shows a normal excreting right kidney with no evidence of the left kidney in the pelvis (in the line of renal bud descent) (***Figure 2-B***). Contrast CT also showed left proximal blind ending ureter (***Figure 3-A***) with increased diameter (11.3 mm) - left mega ureter (***Figure 3-B***). Observations also included a ureterocele at left vesicoureteral junction in intramural part of distal end of left ureter at VUJ (Vesico-ureteric junction) and measured - 3.5 x 3.4 x 2.9 cm (***Figure 4-A*** and ***4-B***). So a diagnosis of incidentally diagnosed combination of left renal agenesis, left ureterocele and proximal blind end ureter on ipsilateral side along with left mega ureter was given.

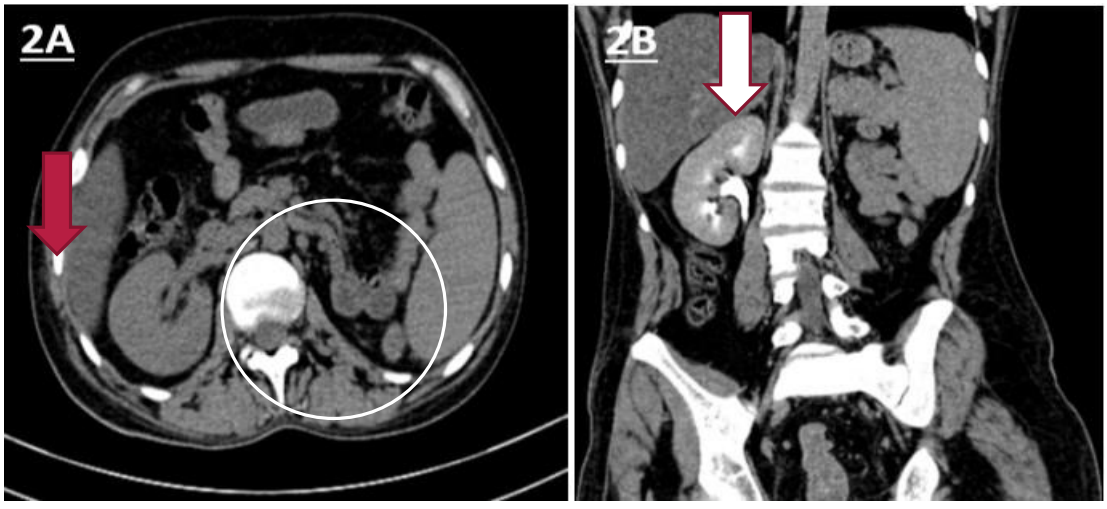

Figure 2-A: Non Contrast CT axial image showed solitary right kidney which measured approximately 9.8 x 5.5 cm (blue arrow), left kidney was absent in left renal fossa (white circle).

Figure 2-B: Delayed CT urogram on coronal image showed normal excreting right kidney (white arrow) and showed no evidence of the left kidney in the pelvis (in the line of renal bud descent).

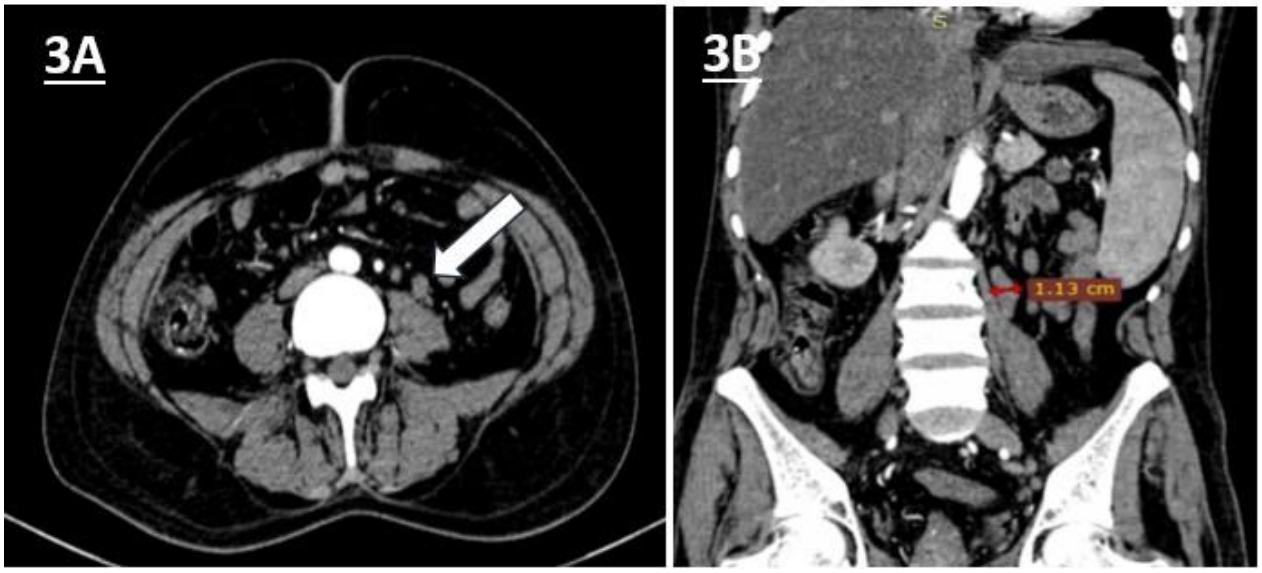

Figure 3-A: Contrast CT also showed left proximal blind ending ureter (white arrow).

Figure 3-B: Coronal post contrast image showed increased diameter of left blind ending ureter, measuring ~ 11.3 mm (Mega ureter).

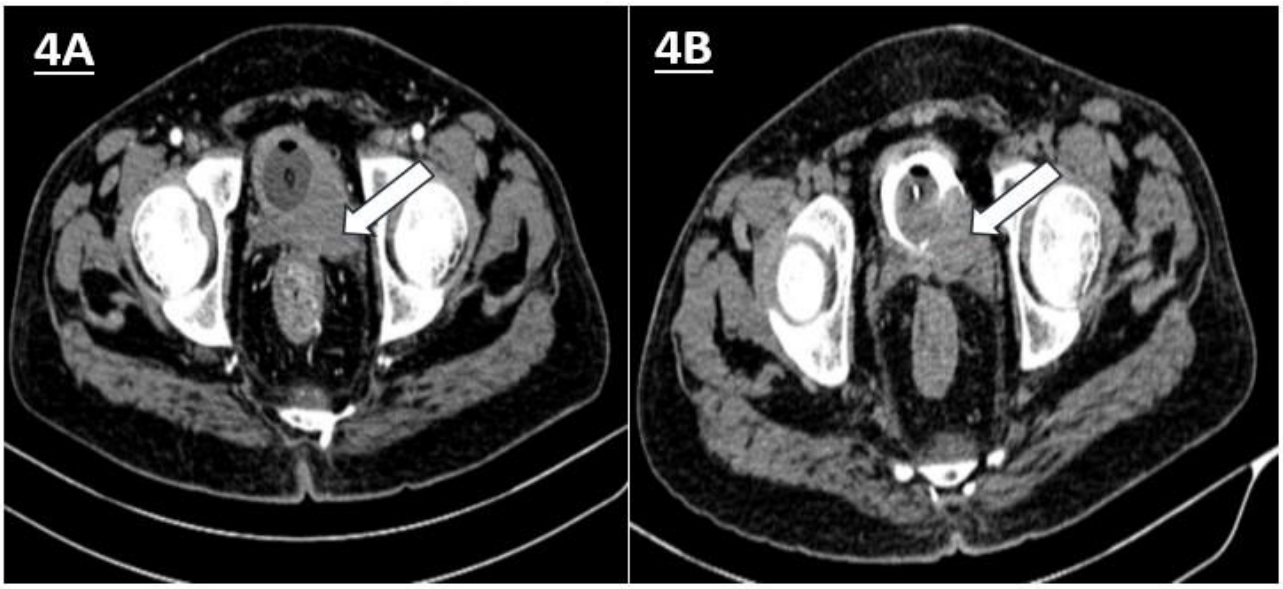

Figure 4-A: Early and Figure 4-B: Delayed contrast CT axial images showed left ureterocele measured - 3.5 x 3.4 x 2.9 cm (white arrow) at left vesicoureteric junction in intramural part of distal end of left ureter.

DISCUSSION

Renal agenesis is not an uncommon anomaly but combination of unilateral renal agenesis and ureterocele is rare while renal agenesis, ureterocele and proximal blind end ureter on ipsilateral side is extremely rare. Adult orthotopic ureterocele is a well-known entity, nevertheless concomitant blind ureteral bud, renal agenesis and ureterocele have only been reported in four cases so far, that have been documented in international literature. (4)

Our case which is a combination of left renal agenesis, left ureterocele and proximal blind end ureter on ipsilateral side along with left mega ureter is a rare entity. Renal agenesis is generally thought to result from a lack of induction of metanephric blastema by the ureteral bud, which may be secondary to ureteral bud maldevelopment and/or to a problem with the formation of the mesonephric duct. Less commonly, after birth involution of multicystic dysplastic kidneys results in solitary kidney. (5) Unilateral renal agenesis may be associated with ipsilateral genitourinary anomalies. The interest of this case lies in the association of unilateral renal agenesis with ipsilateral ureterocele, ipsilateral mega ureter with a blind ending proximal

aspect.

Presentation of this patient was recurrent urinary tract infection but no early radiographic investigations were carried out. It is necessary to carry out early investigation in these kinds of cases as surgery to remove left ureter would be curative in this case in order to save contralateral urinary tract from ascending retrograde infection and damage as this would minimize morbidity and would prove lifesaving. (6)

4. CONCLUSION

Early investigation of congenital urinary tract anomalies is essential to prevent delays in diagnosis, complications related to these anomalies, and increases in mortality and morbidity. So, if young patients present with recurrent lumber pain, dysuria, and urinary tract infections, baseline radiological imaging like ultrasound and/or intravenous pyelography should be performed before moving on to CT or MRI for additional evaluations. In order to protect the contralateral urinary tract from retrograde and ascending infections and associated complications, surgery to remove the left ureter would be only an option once imaging confirms the absence of the left kidney. Raising awareness about such case emphasizes the wide spectrum of clinical and radiological variations for urinary tract anomalies.

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