Objective improvement in renal function post-Dietl's crisis: Documented on renal dynamic scintigraphy

Girish Kumar Parida, Madhavi Tripathi, Kunal Kumar, Nishikant Damle

Department of Nuclear Medicine and PET/CT, All India Institute of Medical Sciences, New Delhi, India

ABSTRACT

Dietl's crisis is one of the treatable causes of intermittent abdominal pain. The pain is due to acute hydronephrosis that leads to stretching of the pelvis. The most common cause of this intermittent hydronephrosis is aberrant renal vessel at lower pole that causes pelvi-ureteric junction obstruction (PUJO). High insertion of the ureter is one of the other rare causes. We present a case of 5-year-old boy with intermittent abdominal pain and distension with ultrasonography features of gross left hydronephrosis. Renal dynamic scan (RDS) with ethylene dicysteine showed negligible functioning left kidney. On third follow-up day, the patient passed a lot of urine with decrease in abdominal pain and distension. Then, again the patient was sent to us 8 days after the first study for repeat RDS, which showed significant improvement in function and decreased in the size of left kidney though with persistent PUJO. On exploration high insertion of the ureter at pelvis was found to be the cause and was treated.

Keywords: Dietl's crisis, pelvi-ureteric junction obstruction, renography

We present the case of a 5-year-old boy referred for renal dynamic scintigraphy (RDS) as a part of his workup for intermittent abdominal pain. On the 3rd day following the RDS, the child had a history of passing a lot of urine with a palpable decrease in the size of his abdominal lump. Keeping a working diagnosis of Dietl's crisis the pediatric surgeons referred the child for a repeat RDS. The scan documented an improvement in differential renal function of the hydronephrotic left kidney with a slight decrease in the size of the kidney. Drainage pattern however remained unchanged, and the child was fast tracked for a left

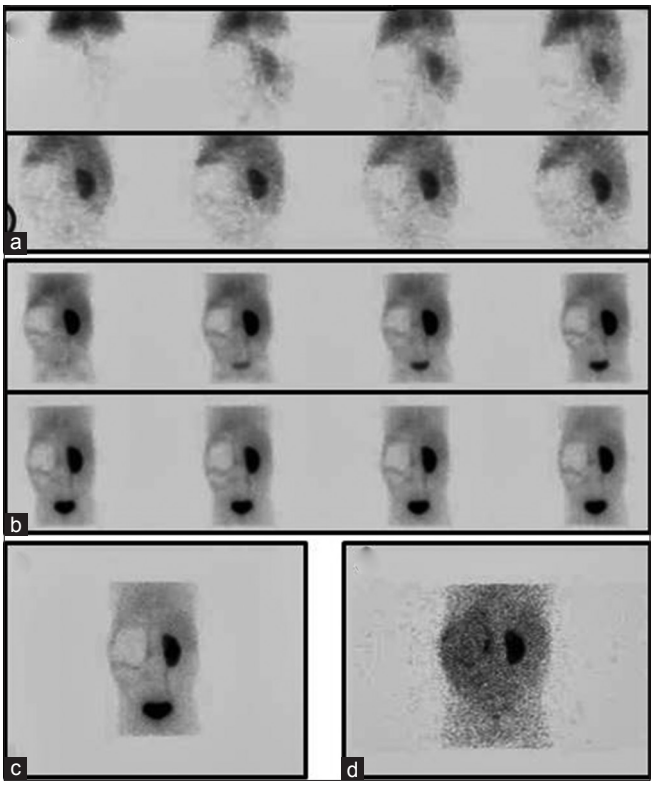

Figure 1: Renal dynamic scan images at pre-Dietl's crisis state. (a) Flow phase images with frame rate of 1 sec/frame, (b) uptake phase images with frame rate of 1 min/frame, (c) prevoid image just after dynamic study (d) delayed static image at 4 h postinjection

Address for correspondence:
Dr. Madhavi Tripathi, Department of Nuclear Medicine and PET/CT, All India Institute of Medical Sciences, New Delhi - 110 029, India.
E-mail: madhavi.dave.97@gmail.com

Access this article online

Quick Response Code:

Website: www.ijnm.in

DOI: 10.4103/0972-3919.181527

How to cite this article: Parida GK, Tripathi M, Kumar K, Damle N. Objective improvement in renal function post-Dietl's crisis: Documented on renal dynamic scintigraphy. Indian J Nucl Med 2016;31:240-1.

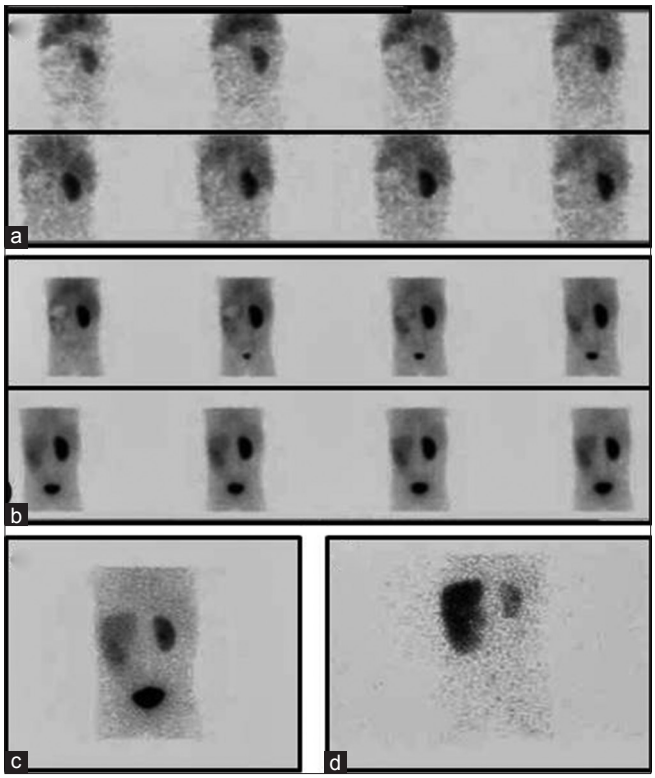

Figure 2: Renal dynamic scan images at post-Dietl's crisis state. (a) Flow phase images with frame rate of 1 sec/frame, (b) uptake phase images with frame rate of 1 min/frame, (c) prevoid images just after dynamic study (d) delayed static images at 4 h postinjection

pyeloplasty, which revealed huge hydronephrotic left kidney with high insertion of the ureter. Intermittent hydronephrosis (Dietl's crisis) is one of the treatable causes that leads to recurrent abdominal pain.[1-3] Josef Dietl in 1864 first reported this and described it as episodic, crampy upper abdominal pain, nausea, and vomiting associated with intermittent obstruction at pelvi-ureteric junction (PUJ)[1] The most common cause for this is an aberrant vessel at the lower pole of kidney that causes kinking of the ureter at the PUJ.[4] In our case, the RDS pre- and post-Dietl's crisis [Figures 1 and 2, respectively] clearly demonstrated a recovery of renal function postcrisis (without intervention). This recovery indicated the need for surgical intervention and that relief in obstruction would result in good postoperative functional recovery.[5] Abnormal insertion of ureter results in high insertion PUJ obstruction. The ureter inserts into the renal pelvis in a high and often oblique manner, which can cause functional obstruction.[6] The greater the hydronephrosis the worse the obstruction in these cases (ureteral insertion resides higher on the renal pelvis, creating acute angulation).[7]

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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