

# Dorsal Lumbotomy Pyeloplasty Via Transverse Incision, A Ten Years' Experience

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## Abstract

## Original Research Article

The Pelviureteric- junction obstruction (PUJO) is the commonest cause of hydronephrosis in children. Dismembered pyeloplasty is the gold standard procedure for PUJO. Dorsal transverse lumbotomy approach is our preferred approach to get access to Pelviureteric junction. This is a retrospective study of last 10 years of one Hundred and twenty three cases. All the patients were operated via dorsal lumbotomy approach. Pre-operative Investigations hemogram, Ultra sonography and a preoperative diuretic renal scintigraphy with diethyl tri-amino penta acetic acid (DTPA) / Ethylene dicysteine (EC.) and Dimercaptosuccinic acid (DMSA) was performed in every patient to assess the differential function and changes in renogram curve. Indication for pyeloplasty was PUJO with obstructed renogram with non-achievement or delayed excretion of Tracer (T ½). Patient were operated under General anaesthesia in prone position and standard Anderson-Hynes Dismembered pyeloplasty via transverse lumbotomy incision. A Total of 123 patients were operated with the median age of patients was 30 months; the average antero- posterior diameter of the renal pelvis was 24 mm. The Average time for surgery was 99 minutes, The Average days of admission were 4. Six patients had postoperative leak which were managed conservatively. Nine patients required redo surgery.

**Keywords-** Pyeloplasty, Dorsal lumbotomy, Pelviureteric -junction obstruction (PUJO), Paediatric.

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## INTRODUCTION

Pelviureteric -junction obstruction (PUJO) is the commonest cause of hydronephrosis in children [1]. Surgical repair is warranted in every case of PUJO. I.e. to relieve the obstruction in order to save the function of hydronephrotic kidney. Dismembered pyeloplasty is the gold standard procedure for PUJO. This procedure offers excellent results with success of 94 percent of cases [2]. Dismembered pyeloplasty can be done via different routes, Flank, anterior abdominal, lumbotomy etc. Dorsal transverse lumbotomy approach is our preferred approach to get access to pelviureteric junction. This approach is muscle sparing and recovery of patients is quick than other approaches and has cosmetic surgical scar. This article assesses the dorsal lumbotomy transverse incision merits and demerits.

## MATERIALS AND METHODS

A retrospective study of last 10 years was done. One Hundred and twenty three cases were included in this study; all the patients were operated via dorsal

lumbotomy approach. Pre-operative Investigations were complete hemogram, Urine routine and microscopy, urine culture sensitivity. Renal parameters such as parenchymal thickness, diameter of pelvis and ureter were recorded with Ultra sonography. A preoperative diuretic renal scintigraphy with diethyl tri-amino penta acetic acid (DTPA) and dimercaptosuccinic acid (DMSA) was performed in every patient to assess the differential function and obstructive renogram curve. Indication for pyeloplasty was PUJO with obstructed renogram with non achievement or delayed excretion of Tracer (T ½).

**The procedure:** Patient under General anesthesia placed in prone position after painting and draping of the operative field a transverse dorsal lumbotomy incision is made (Figure1). The incision is made just below the lower border of 12<sup>th</sup> rib lateral to sacrospinalis muscle and extended, muscles are split lumbodorsal fascia is incised to reach Gerota's fascia. Pelviureteric junction is identified urine from the pelvis is aspirated and sent for culture and sensitivity, standard Anderson-Hynes Dismembered pyeloplasty is performed (Figure3), water

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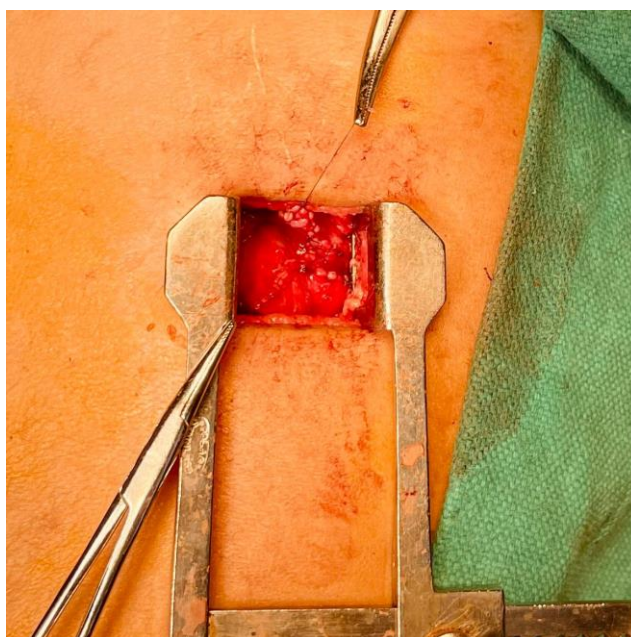
tight anastomosis between ureter and pelvis over Double J stent with 6-0 and 5-0 polyglactine suture is done respectively and Peri Nephric drain kept.

Orals were allowed on first post operative day 1 and Foleys catheter is removed on day 2. Intravenous antibiotics and analgesics were administered for three days and patient is discharged after drain removal.

Double J stent is taken out after six weeks. All patients were started on chemoprophylaxis with urine and ultrasonography evaluation monthly and three monthly respectively. Patient is followed up for a year and assessed for symptoms and detailed renal parameters. Renal scintigraphy is done to assess the diuretic curve. Detailed record of age, sex, Operative time, length of stay, complications was reviewed retrospectively.



**Figure-1: Transverse lumbotomy incision**



**Figure-2: Completed Ureteropelvic anastomosis**

## RESULTS

A Total of 123 patients (98 Males And 25 female) 99 patients were Antenatal diagnosed cases of Hydronephrosis, 11 presented with Urinary tract infection, 10 presented with pain in abdomen and 3 had complaints of palpable lump in abdomen. The average age of patients was 26 months; the average antero-posterior diameter of the renal pelvis was 24 mm. The Average time for surgery was 99 minutes, the mean of intra operative blood loss was 10-30 ml. The number of

right sided and left sided PUJO patients were 45 and 76 respectively. Out of all the operated cases there were 9 bilateral cases of PUJO. Which were operated at an interval of 3 weeks, in 6 patients Double J stent could not be negotiated into the bladder therefore at trans-anastomotic stent in the form of infant feeding tube as nephrostomy tube was kept. The Average days of admission were 4. Six patients had postoperative leak which were managed conservatively. Nine patients required redo surgery.

**Table 1**

Presentation	Number of Patients	Percentage
Antenatal	99	80.48
Urinary tract infection	11	8.94
Pain in abdomen	10	8.13
Palpable lump in abdomen	03	2.4

**Table 2**

Patients' statistics and operative data	
Patients (n)	12
Male / Female (n)	98/25
Age (months)	26
Side (l/R)	76/45
Average operative time (minutes)	99
Mean Antero-posterior Diameter of renal pelvis (mm)	24
Mean stay in hospital (days)	4
Perioperative difficulty in negotiating D-J stent (cases)	6
Urinary leak	7
Redo Surgery	9

## DISCUSSION

Since decades open pyeloplasty has been the gold standard for treatment of UPJ obstruction in children. This procedure is popular among pediatric surgeons as well as urologist for various procedures with favorable results. Regular approach being muscle-cutting anterolateral flank incision, with a drawback of postoperative surgical site pain, visible scar, with potential risk of ventral hernia. As compared to dorsal lumbotomy which has direct access to pelvis and pelviureteric junction, anterior approach surgery faces difficulty in Approaching the kidney and muscle cutting has also slow post operative recovery compared to dorsal lumbotomy approach. Dorsal lumbotomy procedure can be done via vertical or transverse incision. Transverse being more Langer's skin line amiable. Some authors believe that vertical lumbotomy incision is handy in case of long ureteric stenosis or stricture but we didn't face such kind of difficulty in our case series. As dorsal lumbotomy pyeloplasty is muscle splitting and not cutting our average hospitalization duration of eighty four percent of cases was three days which is significantly lower than anterior approach. Many studies have been published of laproscopic pyeloplasty with satisfactory results; the problems faced are limited working space for suturing, extended learning curve and operative time. The principal argument in minimal invasive surgery is less pain and early discharge which is equivalent to dorsal lumbotomy procedure with cosmetic scar. In seven percent of patients Double J stent could not be negotiated beyond VUJ. Nephrostomy tube was kept; though on further investigation no Vesico ureteric junction obstruction was observed. Six Percent of cases were redo pyeloplasty leading cause being post operative anastomotic stricture other being adhesive obstruction.

Follow up of patients in our study was minimum 24 months; many authors have followed up the patients for years with significant favorable results. In

this study less than three percent of patients required redo pyeloplasty after dorsal lumbotomy incision. In this study we did not face any life threatening complications.

## CONCLUSION

This ten year study validates open dorsal lumbotomy pyeloplasty which can be executed with least possible morbidity and minimal stay at the hospital. This method is excellent for exposure of UPJ and various anatomical variations can be dealt with ease such as crossing vessel, upper ureteric stricture, intrarenal pelvis etc. This method being muscle splitting and incision being parallel to Langer's line, which is less painful and in addition being cosmetic.

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