

# Open Translumbar Mini-Incision Pyeloplasty in Infants and Young Children with Ureteropelvic Junction Obstruction: A Retrospective Study

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## Abstract

**Background:** Ureteropelvic junction obstruction (UPJO) is a common cause of hydronephrosis in infants and young children and may lead to renal deterioration if untreated.

**Objective:** To evaluate outcomes of open translumbar mini-incision Anderson–Hynes pyeloplasty in infants and young children.

**Methods:** Retrospective analysis of 30 pediatric patients (2015–2024). All underwent ultrasound, MAG-3 scintigraphy, and retrograde evaluation with DJ stenting. Outcomes included operative time, complications, and recovery.

**Results:** 17 males (56.7%) and 13 females (43.3%) were included. Antenatal diagnosis was present in 80%. Mean operative time was 80–176 minutes. Early mobilization occurred in 90% of patients. No recurrence or urine leakage was observed. One conversion to pyelostomy occurred.

**Conclusion:** Mini-incision open pyeloplasty is safe and effective with excellent outcomes in infants and young children.

**Keywords:** Ureteropelvic junction obstruction (UPJO), Pediatric pyeloplasty, Hydronephrosis, Anderson–Hynes pyeloplasty

## Introduction

Ureteropelvic junction obstruction (UPJO) is one of the most frequent congenital causes of hydronephrosis in children [1,2]. If untreated, it may result in progressive renal damage.

Ureteropelvic Junction Obstruction is thought to arise from abnormal development of the ureteric smooth muscle and impaired peristalsis, possibly involving interstitial cells of Cajal [3].

Open Anderson–Hynes pyeloplasty remains a gold standard in infants, despite increasing use of minimally invasive techniques [4].

## Materials and Methods

Retrospective review of 30 children treated between 2015–2024.

### Preoperative evaluation:

- Ultrasound
- MAG-3 renal scintigraphy
- Cystoscopy with retrograde ureterography

### Surgery:

All patients underwent open Anderson–Hynes pyeloplasty via 1.5 cm translumbar incision.

### Follow-up:

Ultrasound-based monitoring and clinical evaluation.

## Results

**Table 1.** Patient demographics and clinical features.

Variable	Result
Total patients	30
Male	17 (56.7%)
Female	13 (43.3%)
Right-sided UPJO	18 (60%)
Antenatal diagnosis	24 (80%)

**Table 2.** Operative outcomes.

Variable	Result
Operative time	80–176 min
Blood loss	Minimal
Intraoperative complications	None

**Table 3.** Postoperative outcomes.

Variable	Result
Early mobilization (Day 1)	90%
Discharge by Day 4	90%
Urine leakage	None
Febrile UTI	None

**Table 4.** Complications and adverse events.

Complication	Cases
Failed DJ stent placement	1 (3.3%)
Conversion to pyelostomy	1 (3.3%)
Hypoplastic kidney with reduced function	1 case

## Discussion

UPJO remains a significant pediatric urological condition requiring timely surgical intervention [1]. Open pyeloplasty continues to show high success rates, particularly in infants, where anatomical constraints may limit minimally invasive approaches [4,5].

Recent literature confirms comparable outcomes between open and minimally invasive techniques, although operative time and cost may differ [5,6].

Our results demonstrate excellent functional outcomes with minimal complications, consistent with previously published pediatric series [4,7].

Limitations include retrospective design and lack of long-term comparative data.

## Conclusion

Mini-incision open Anderson–Hynes pyeloplasty is a safe and effective procedure for infants and young children with UPJO, showing excellent functional outcomes and low complication rates.

## Conflict of Interest

The authors declare that they have no conflicts of interest related to this study.

## Acknowledgements

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None

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