

Comparing Open Distal Ureteroureterostomy to Common Sheath Ureteral Reimplantation or Open Heminephrectomy for Duplex Ureteral Anomalies in Children

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INTRODUCTION

- Multiple surgical options exist for children with complete ureteral duplication associated with ureterocele, vesicoureteral reflux, and/or obstruction.
- Morbidity following heminephrectomy (HN) has led to increased interest in upper tract preservation, even in poorly functioning renal moieties.
- Open distal ipsilateral ureteroureterostomy (UU) through a small (2cm) inguinal incision has gained popularity in children with complete ureteral duplication anomalies.



PURPOSE

- To compare outcomes following distal UU versus common sheath ureteral reimplantation (CSUR) or HN in children with complete ureteral duplication anomalies.

METHODS

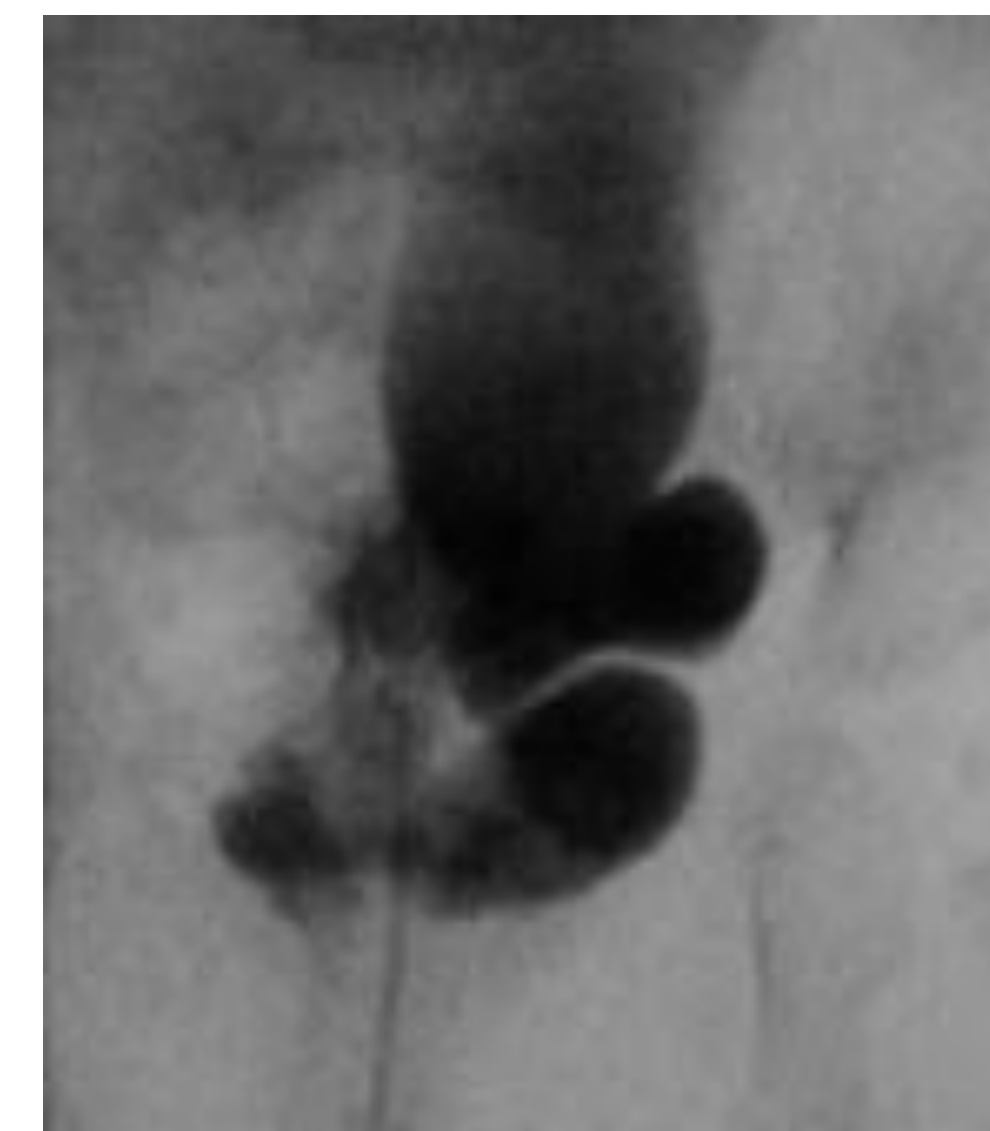
- Retrospective review of patients at our institution with duplex ureteral anomalies who underwent a distal UU, CSUR, or HN over a 9-year period.
- Patient characteristics, operative time, length of stay, utilization of pain medication and antispasmodics, and complications were reviewed.
- Total of 17 patients (14 female and 3 male) were identified. Six distal UU, 8 CSUR, and 3 HN patients.
- Statistical analysis with MacAnova software was utilized.

RESULTS

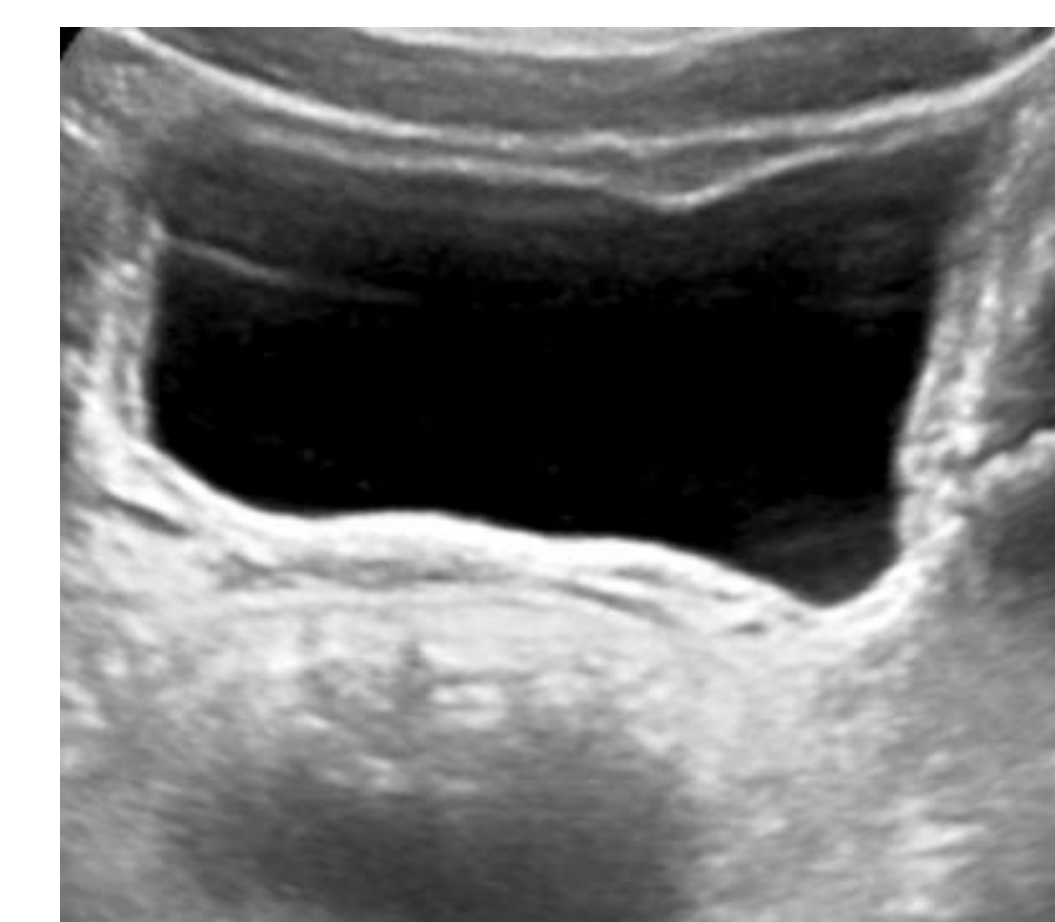
Patient Characteristics	CSUR	HN	Distal UU
Average age at surgery (months)	33	10	18
Female / Male	5 / 3	3 / 0	6 / 0
Hydroureteronephrosis	4	3	6
Renal Scarring	6	3	1
Recurrent UTI	6	3	4
VUR	8	0	3
Ureterocele	3	2	0



Pre-op UU Bladder



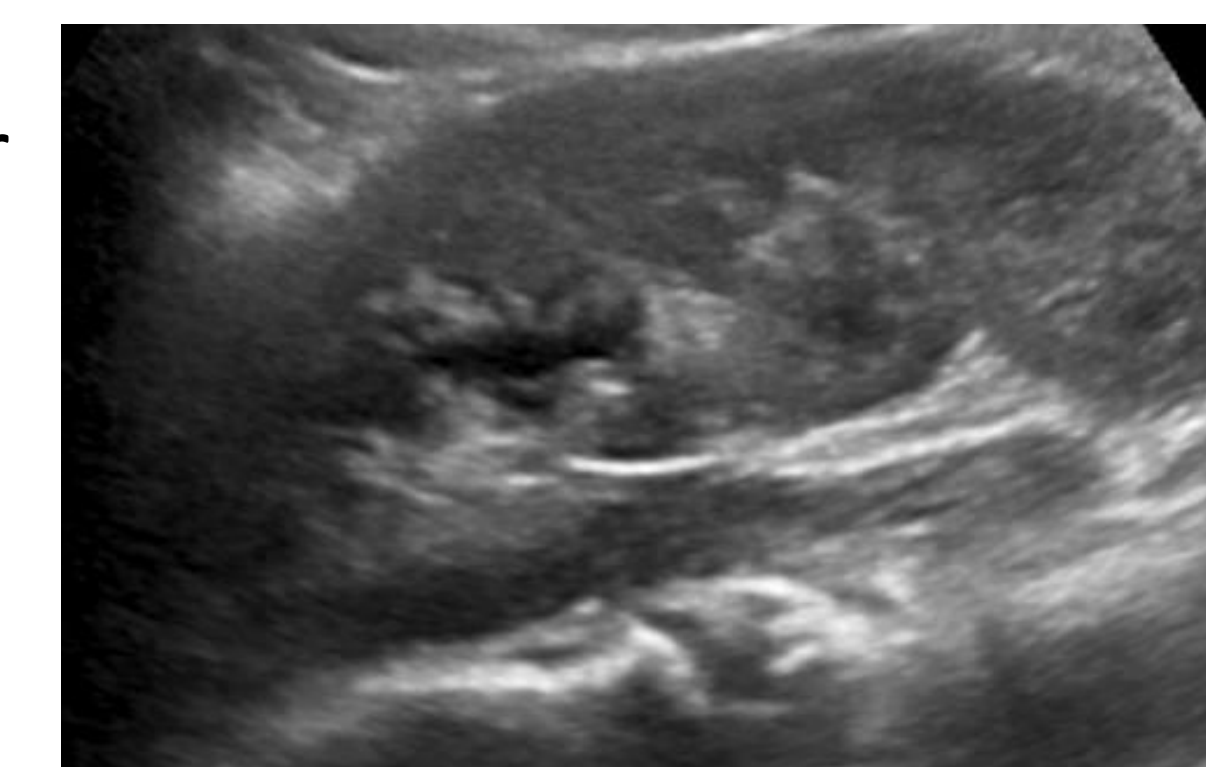
VCUG with reflux into massive ectopic upper pole ureter



Post-op UU Bladder



Pre-op UU Kidney



Post-op UU Kidney

	CSUR	HN	Distal UU	
Average age at surgery (months)	33	10	18	p=0.24
Operative time (min)	238	253	212	p=0.58
Length of stay (hours)	84.8	71.0	36.7	p=0.0044
IV narcotics (MME/kg)	0.414	0.025	0.017	p=0.19
PO narcotics (MME/kg)	0.880	0.151	0.384	p=0.10
Acetaminophen (mg/kg)	109.5	168.0	33.7	p=0.0123
Oxybutynin (mg/kg)	11.15	0.54	0.17	p=0.0495
Follow-up (months)	21.6	13.0	13.5	p=0.44

- Two in UU group had post-op UTI (Clavien II). One in CSUR group had respiratory compromise requiring short stay in PICU (Clavien Iva). One in HN group developed pyoureter requiring return to OR for drainage of stump (Clavien IIIb).
- All patients have done well on long-term follow-up.

CONCLUSIONS

- In our series, children required less pain medication and had shorter length of stay following UU compared to CSUR or HN.
- Open UU is an effective surgical option for children with ureteral duplex anomalies and is potentially associated with less short-term morbidity.