Comparison of early versus late urinary bladder catheter removal on the outcomes of hypospadias surgery in a tertiary care hospital: A randomized controlled trial

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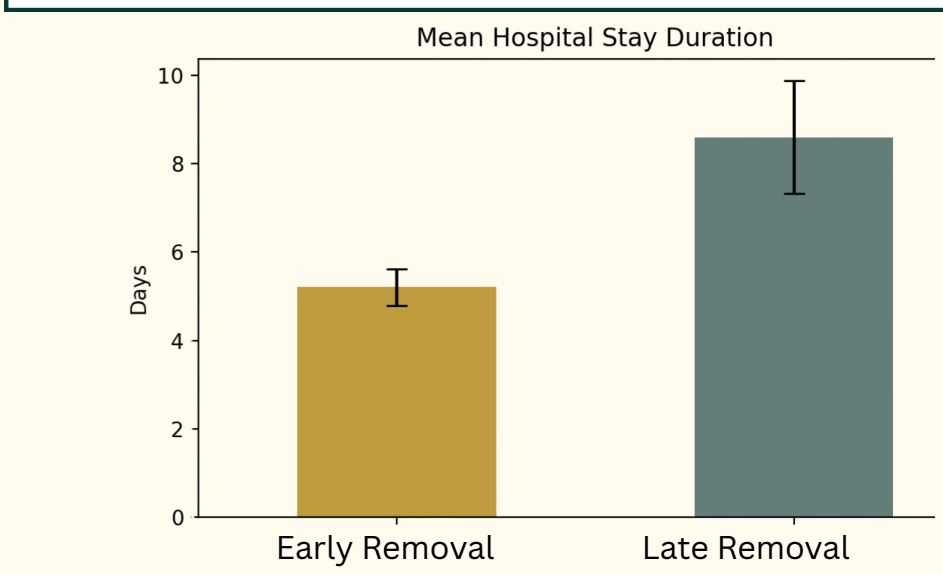
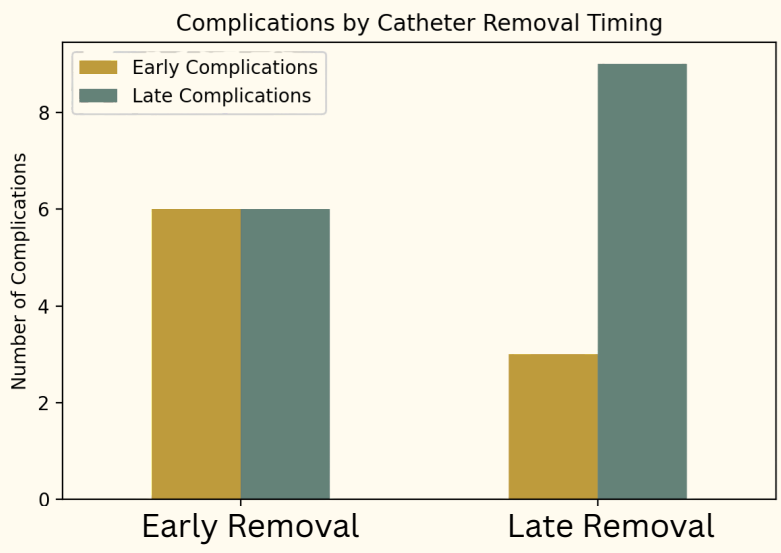
Introduction

Despite the widespread use of postoperative urinary catheterization in hypospadias repair, no specific guidelines exist for the timing of catheter removal. The purpose of this study is to evaluate the impact of early versus late urinary bladder catheter removal on postoperative outcomes measured as early and late complications. The study also evaluates hospital stay duration and patient satisfaction to support safer, evidence-based practices in pediatric hypospadias care.

Results

- Of 94 patients, **80.8%** had **subcoronal** hypospadias.
- Group A had **more early (12.8%)** but **fewer late (12.8%)** complications than Group B (**early 6.4%, late 19.1%**). Differences were not statistically significant (**p=0.50 for early, p=0.57 for late**; Fisher's exact test).
- **Mean hospital stay** was **significantly shorter** in Group A (5.2 ± 0.4 days) than Group B (8.6 ± 1.28 days; **p < 0.001**, Welch's t-test).
- Patient satisfaction was comparable between groups





Methodology

- This RCT (**Trial No. ACTRN12625000993493**) was conducted from **November 2024 to August 2025** at **Department of Pediatric Surgery Mayo Hospital Lahore.**
- **94** patients, aged **6 months till 12 years** with hypospadias who underwent **tubularized incised plate urethroplasty**, the technique previously described by **Snodgrass et al** were included
- Patients were randomized using **simple random sampling** and divided into two groups: (**47 patients** in each group)
- **Group A: Early catheter removal (≤5 days postop)**
- **Group B: Late catheter removal (>5 days postop)**
- Patients with history of prior urethral or bladder surgeries including previous hypospadias repair, patients with associated genitourinary anamolies and patients with active urinary tract or skin infections at the time of surgery were excluded.
- **Primary** and **secondary** outcomes were compared in both groups.

Primary Outcomes

EARLY COMPLICATIONS:

- **Surgical site infection**
- **Urinary Tract Infection**
- **Bladder Spasm**
- **Urinary Retention**
- **Urinary Extravasation**
- **Bleeding and Pain**

LATE COMPLICATIONS

- **Urethrocutaneous Fistula**
- **Meatal Stenosis**
- **Urethral Stricture**

Secondary Outcomes

- **Duration of Hospital Stay**
- **Patient Satisfaction**

Conclusion

Early and late stent removal after hypospadias repair had comparable complication rates but early removal was significantly associated with shorter hospital stays. Hence, early stent removal may be a safe and cost-effective strategy in the postoperative management of hypospadias patients resulting in similar outcomes and overall patient satisfaction.

References

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