

# Feasibility of Fast-Track Surgery in Children with Hypospadias

## Hızlandırılmış Cerrahinin Hipospadiaslı Çocuklarda Uygulanabilirliği

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### ABSTRACT

**Objective:** The aim of this study is to evaluate feasibility of fast-track surgery concept in children with distal hypospadias who are treated by Snodgrass technique.

**Material and Methods:** Children who were operated due to distal hypospadias between 2012 and 2017 were evaluated retrospectively. Patients with proximal hypospadias and patients with any concomitant anomalies were excluded from the study. Type of hypospadias, age of patients, surgical technique, duration of hospitalization stay and complications were retrospectively analyzed.

**Results:** There were 67 children in the study. Mean age was 1.5 years (6 months-14 years). Snodgrass procedure was the method of choice in all cases. The mean follow-up time was 29 months (1-82 months). Thirty-nine children stayed at the hospital overnight and in 28 children the procedure was carried out as a day-case surgery. There were no postoperative complications in any of cases.

**Conclusion:** Distal hypospadias surgery seems to be an excellent type of procedure for implementation of fast-track concept.

**Key Words:** Hypospadias, Surgery

### ÖZ

**Amaç:** Çalışmanın amacı distal hipospadias nedeni ile Snodgrass tekniği uygulanarak gününbirlik veya tek-gecelik hastane kalış süresi ile opere edilmiş hastalarda hızlandırılmış cerrahi konseptinin uygulanabilirliğini değerlendirmektir.

**Gereç ve Yöntemler:** Distal hipospadias nedeni ile 2012-2017 seneleri arasında opere edilmiş olan hastalar geriye dönük olarak incelendi. Proksimal hipospadias ve herhangi bir ek anomalinin eşlik ettiği hastalar çalışma dışı bırakıldı. Hipospadias tipi, hasta yaşı, uygulanan teknik, hastane kalış süresi ve komplikasyon bilgileri hastane kayıtlarından elde edildi.

**Bulgular:** Çalışmaya 67 hasta dahil edildi. Ortalama yaş 1.5 yıl (6 ay-14 yaş)'dı. Tüm hastalara onarım yöntemi olarak Snodgrass tekniği uygulanmıştır. Ortalama takip süresi 29 ay (1-82 ay)'dı. Otuz dokuz hasta tek gece hospitalize edilerek ertesi gün, 28 hasta gününbirlik hasta olarak aynı gün taburcu edilmiştir. Hiçbir hastada postoperatif komplikasyon izlenmemiştir.

**Sonuç:** Distal hipospadias onarımı hızlandırılmış cerrahi konseptinin uygulanabileceği mükemmel bir girişim çeşitidir.

**Anahtar Sözcükler:** Hipospadias, Cerrahi

### INTRODUCTION

Hypospadias is incomplete development of urinary meatus, in which meatus is opened ventrally instead of apex of glans (1). Snodgrass repair is claimed to be one of the most common surgical technique which has been practicing recent years (2). Fast-track surgery in adult patients seems to have the

advantages of short hospital stay and low complication rates (3,4). There are several studies showing fast-track surgery concept is feasible in pediatric population (5). The aim of the present study is to evaluate outcomes of children who were operated due to distal hypospadias by Snodgrass technique and the feasibility of fast-track surgery concept in these children.

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## PATIENTS AND METHODS

Local Research Ethical Committee Approval was obtained for the study. Charts of children who were operated due to distal hypospadias by a single surgeon between 2012 and 2017 were retrospectively evaluated. Patients with proximal hypospadias and patients with any other associated anomaly were excluded. Snodgrass repair was the method of choice in all patients. Laryngeal mask was the method of choice for anesthetic management in all children. Patients older than 6 months received premedication (0.3 mg/kg midazolam). To minimise parents' and patients' anxiety, parents stayed with patient until laryngeal mask was applied. Dorsal penile block with 1mg/kg bupivacaine and 1mg/kg of tramadol intravenously was applied in all patients. Wound dressing was simple as it is used in circumcision (Figure-1). 6-8 Fr feeding catheters were used as urinary stents in patients with diapers (Figure-2). Double diaper technique was used in this group for easy accommodation and comfort of the child or the care giver. A hole made in the inner diaper and catheter brought out from this hole to make drainage to outer wrapped diaper. Zaont'z urethral stents were placed (Figure-3) in older patients and patients with toilet training to avoid continuous leakage of urine. Second generation cephalosporins were continued until the urethral catheter removal. Suppository with phenobarbital and acetaminophen is used in infants (100mg/kg) and per oral paracetamol was the method of pain control in older children (10-15 mgr/kg). None of the children required intravenous fluid resuscitation. Families coming from different cities discharged after one day of hospitalization by their own request. Patients were seen on postoperative day 3, 5 and 7 respectively in order to change the wound dressings. Wound were left open on postoperative 5th day and the parents were advised to get the children to do sit baths two times daily and apply antibiotic ointment (nitrofurazone). Catheter removed on postoperative 7th day (Figure-4). Discharge criteria was awake



**Figure 1:** Wound dressing.

rates, age appropriate vital signs, normal motor functioning, no bleeding signs, acceptable pain control, full oral nutrition and good general condition. All families were informed about catheter nursing and urgent conditions. In addition to patient demographics, length of hospitalization and complications were evaluated.

## RESULTS

There were 67 children in the study. Mean age was 1.5 years (range:6 months-14 years). Snodgrass procedure was



**Figure 2:** Feeding catheter use.



**Figure 3:** Zoant's catheter use in distal hypospadias.



**Figure 4:** Postoperative 7th day, after catheter removal.

the method of choice in all cases. The mean follow-up time was 29 months (1-82 months). Thirty-nine children stayed at the hospital overnight and in 28 children the procedure was carried out as a day-care surgery. Patients evaluated at postoperative 1st month for fistula formation, wound dehiscence, urethral stricture and any other complication. There were no postoperative complications in any of the cases.

## DISCUSSION

Based on the results of present study, it may be claimed that fast-track surgery concept is appropriate for children with distal hypospadias. Hypospadias surgery's aim is to construct a functionally and cosmetically normal penis with minimal complications (6). Sufficient pain control and catheter maintenance is adequate for successful postoperative management. Okoro et al compared management difficulties and complications in Mathieu repair on day-care basis with those spent the first 48 hours in the hospital (7). As a conclusion they argued that if there is not concerns postoperatively and parents are informed about dressing and catheter Mathieu repair is suitable as a day-care procedure. In our study double diaper technique and Zaont'z catheter's advantages like mobilization, easy urination and no need for frequent diaper change gave us a great opportunity for early discharge. Long hospital stay is one of the causes of anxiety among children and parents. All implementations mentioned above would help surgeon to manage distal hypospadias patient group with increased patient comfort and high satisfaction. Since the early postoperative complications are managed via conservative interventions,

long-term hospitalization doesn't seem to be necessary in this group of children. Early discharge from the hospital is the main cause of high child/parent satisfaction.

There are several studies comparing different hypospadias repair techniques (8,9). Length of in-hospital stay does not seem to be forceful factor of repair success in presented studies.

Within several years, fast-track surgery concepts has been implemented in pediatric surgery (10). Increased patient comfort, reduced hospital stay and high patient/parent satisfaction are proceeds of fast-track treatment (6). Applying effective analgesia, early nutrition, early discharge are successfully implemented fast-track elements in hypospadias surgery (10). In a study, conducted by the study of Resimann et al.(10) all fast-track surgery elements except early mobilization was reported as seems to be successfully applied in all patients without any long-term complications. All children and parents that require surgery are frightened and uncomfortable. It is the surgeons' privilege to give them trust and comfort. Giving families opportunity for spending postoperative period at home would resolve patient/parents's anxiety.

As a conclusion distal hypospadias surgery seems to be an excellent type of procedure for implementation of fast-track concept.

**Ethics Committee Approval:** Ethical committee approval was received for this study from the committee of the medical faculty of the Ankara University on 13th of March 2017/18-1117-17.

**Conflict of Interest:** Authors have no conflict of interest to declare.

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