

# Hypospadias Repair In Adults, A Comparison With Children

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## Abstract

**Introduction and objectives:** Hypospadias is one of anomalies of the penis that usually is repaired in childhood. But it may rarely be repaired in adolescence. To evaluate results and complications of hypospadias repair in adolescence, we reviewed the records of 29 men from 14 to 64 years old (mean age 22.6) who underwent hypospadias repair between 1998-2004 and compared them with the same number of pediatric hypospadias at the same time. **Material and method:** The study population was divided into 2 groups and each one into subgroups a and b. Group 1 consisted of adult patients, sub group a: 15 patients without previous hypospadias surgery, subgroup b: 14 adult patients who underwent one or more procedures in childhood or at least one unsuccessful attempt to correct the hypospadias. Group 2 consisted of pediatric patients, sub group a: 22 boys without previous hypospadias surgery. Subgroup b: 8 patients with at least one previous unsuccessful procedure. **Results:** the subgroup 1a consisted 14 anterior and 1 mid penile hypospadias, subgroup 1b consisted 4 urethrocuteaneous fistulas, 1 midpenile, 8 posterior and 1 hypospadias cripple. Subgroup 2a consisted: 20 anterior, 1 midpenile and 1 posterior hypospadias. Subgroup 2b consisted: 8 urethrocuteaneous fistulas (6 after penoscrotal hypospadias one stage repair. The mean age of adults was 22.58 years (14-64) and mean age for children was 3.8(9mo-12 y) the hospitalization time after surgery in adults was 7.18 (1-18 days) and in children was 7(2-13 days). The difference between them was insignificant. The complication rates were 26%, 50%, 4.5% and 25% for subgroups 1a, 1b, 2a and 2b. After second intervention the overall success rates in above subgroups were 86.6%, 71.4%, 100% and 87.5%. **Conclusion:** The results if hypospadias repair in adult differ from those obtained in children and the adults must be consulted on all results and complications of surgeries to avoid illogical exception.

## INTRODUCTION

Hypospadias is the most common anomaly of penis which is seen nearly 1 among 300 alive birth (1). This results from urethral plate malclosure of urethral fold as it follows to unusual place anomaly as meatus. It is defined as three anomalies at the penis as following:

- 1-Unusual meatus at the ventral surface of the penis
- 2-Ventral chordee
- 3-Dorsal hood resulting from abnormal prepuce

Hypospadias is derived to different kinds based on meatus situation: proximal, middle and distal. Multifactor such as environmental problems or androgenic and enzymatic causes have been studied as different etiologies of hypospadias and three has been attended more than other causes as follow:

- 1-Unusual production of androgen by testis of fetus
- 2-Decrease sensitivity of external genitalia to androgen

3-Prematur arrest in androgen production secondary to precocious return in Leydig cells (2).

Surgical indications for hypospadias are different, just the need for hypospadias repair may be related to urination and sexual activities as well. But in anterior kinds of hypospadias that there is no interference to urination or sexual activity based on senkel study cosmetic reason is related surgical indication (3). Therefore by attention to epidemiology and its importance in sexual and voiding so that repair is done mostly at the childhood and only less number of repairs done in adults, we decided to study results of repair in adults and compare them to other similar childhood repairs.

## METHODS AND MATERIALS

This research is a retrospective descriptive study. We studied about 29 medical documents of hypospadiac males more than 14 years old that had surgical repair between 2003 and 2009 and compared with children under 14 years old for two years they had repairs .Each document was involved

sufficiently information about age of patient ,surgical history, place of available meatus ,sort of surgery, time of previous surgery ,time of surgery ,time of catheterization ,cystostomy, time of bedridden after surgical repair, patient condition from infection and bleeding aspects, fistula at the releasing time and the final result of surgery. These cases have been collected immediately and related parameters have been analyzed for events of short time and result of surgical operation and also in last examination. This subject was compared to parameters of documents for the children less than 14 years. At this study, quantity information has been modified as an average and deviation mode. Other data has defined as percentage mode on related tests and  $p < 0.05$  was set Significant.

Adults group (group 1) and children group (group 2) have been divided to two subgroups:

Subgroup 1a: 15 patients without any record of previous surgery of hypospadias

Subgroup 1b: 14 patients with one lastly previous repair of hypospadias

Subgroup 2a: 22 patients without any record of previous repair of hypospadias

Subgroup 2b: 8 patients with one lastly previous repair of hypospadias

At all cases, meatus has been visible on the ventral side and it is considered unusual before last surgery. It is identified to anterior kinds and mid penile and hence this subject as expressed complex hypospadias (cripple) if necessary.

**RESULTS**

Subgroup 1a consisted of 14 anterior hypospadias and 1 mid penile hypospadias. Subgroup 1b consisted of 1 midpenile hypospadias, 8 posterior hypospadias ,4 urethrocuteaneus fistula ,and 1 cripple hypospadias .

Subgroup 2a consisted of 4 anterior hypospadias, 1 midpenile hypospadias, and 8 posterior hypospadias.

Subgroup 2b consisted of 8 urethrocuteaneus fistula.

Average age for group 1 was 22.58 years (14-64years) and for group 2 was 3.8 years (9 mo-12 years). Average of bedridden time after operation for group 1 and 2 was 8.15 and 8.13 days (SD1=3.86 and SD2=2.58). The difference between bedridden time of two groups was meaningless ( $p=.98$ ). All of groups 1 and 25 patients of group 2 were catheterized. Mean catheterization time was 9.16 days for

group 1 and 8.1 for group 2 (SD1=4.12 and SD2=2.4). At the patients that had been released with catheter, it was removed in first control visit. Difference of amount and duration of catheterization was insignificant between two groups ( $p=.294$ )

5 patients of group 1 and 2 patients of group 2 had suprapubic cystoscopy. Mean time of operation was 73.4 minute (SD=23.83) for group 1 and 87.5 minute (SD=24.93) for group 2. The difference between two groups was meaningful for that ( $p < .031$ ).

Complication according bedridden was observed in group 1: infection was observed in 3 cases so that is controlled with medical treatment and in group 2: in 1 case bleeding was observed that was controlled by tampon. The patients were followed by periodic examination. And the results and complication entered in their records that these information are shown in table 1 and 2. (Table 1, table 2)

**Figure 1**

Table 1: kind of surgery and complication in group 1

Complication	Subgroup 1a		Subgroup 1b		
	after Primary Repair (no)	after Secondary Repair (no)	complication surgery (no)	after Primary repair (no)	after Secondary Repair (no)
Surgery (no)					
MAGPI (4)	0	0	Fistula repair (4)	Fistula (1)	Fistula (1)
In situ tubularization (2)	0	0	In situ tubularization (7)	Fistula Infection (4)	Fistula (3)
TIP (5)	Fistula Infection (2)	fistula (1)	Quart flap (1)	0	0
Matio (4)	Fistula (1)	fistula (1)	Urethral dilation	0	0
Total (15)	Fistula Infection (3)	Fistula (2)	Total (14)	Fistula Infection (5)	Fistula (4)
percent	26%	13.3%		50%	28.5%

**Figure 2**

Table 2: kind of surgery and complication in group 2

Complication	Subgroup 2a		Subgroup 2b		
	After Primary Repair (no)	After secondary Repair (no)	Complication Surgery (no)	After Primary Repair (no)	After Secondary Repair (no)
Surgery (no)					
TIP (19)	Fistula (1)	0	Fistula repair (8)	Fistula (2)	Fistula (1)
Matio (2)	0	0			
Koyanagi (1)	Fistula (1)	0			
Total (22)	Fistula (2)	0	Total (8)	Fistula (2)	Fistula (1)
percent	4.5%	0	Percent	25%	12.5%

Except one case of cripple hypospadias in group 1 in other cases urethral stricture was negative and meatus place and appearance were normal after the second surgery. primary complications in above groups were 26% in subgroup 1a ,50% in subgroup 1b, 4.5% in subgroup 2a and 25% in subgroup 2b but the overall success rate after second surgery was 86.6%, 71.4%, 100% and 87.5% in groups 1a, 1b, 2a and

2b.

### DISCUSSION

It is stated that the repair of hypospadias must be done in childhood and it is usually based on a simple operation with little or no any complication. However there are more than 200 methods for hypospadias historically, in which these mostly apply for both childhood and adolescence. There are predictable complications in these methods that with improvement in sutures and instruments can be decreased so the results of hypospadias repair would be suitable. But the comparison of one special method, like TIP in children and adults show that low time of operation and low requirement to magnification in adults but there is no expected result in adults and high operation related complication it may be seen (4). due to hypospadias repair complication in adults, Some authors have studied surgical indication in adults with hypospadias, however one of these papers has been evaluated the cause of anterior hypospadias repair. in this study, 312 patients with a background of hypospadias repair (72% had anterior hypospadias) have been evaluated, from these patients, 281 of 312 had not been suffered from sexual disorders and they had normal sexual function and fertility, while they should urinate in sitting or squatting position. The conclusion of this paper is that the placing meatus on the tip of glans cannot be an indication for hypospadias repair. Urination in sitting or squatting is not along with sexual disorders (5). However this cosmetic indication is one of the most common indication for hypospadias repair in adult and children (3). Most papers didn't only pay attention to the results of hypospadias repair but also infection and other complications in adult have been evaluated (6,7). In these papers, large group of patients with hypospadias have been studied that with a complicated method in hypospadias repair had a good result as well as little complications. In spite of these papers, we did not observe the same results in current study through the complication were a little high. Evaluation of the kind of hypospadias in subgroup 1b and 2b demonstrated that complicated hypospadias in adults were higher than children. It seems that remaining without complete cure of complicated hypospadias and elimination of simple hypospadias that cure with simple and single surgery is the cause of this subject. Also in simple hypospadias (subgroup 1a, 1b) in spite of high rate in those groups, the complications in adult group were more common than children group. Evaluation of some factors such as

urine culture before operation in both groups and preparation for surgery can help the physician to clear the cause of increasing complication. Because it seems the degree and amount of dermal bacterial colonization and dermal secretion differ between adults and children. According to some papers, all adults would be under urine culture if they were under hypospadias repair and it is suitable to start preparing and washing 3 days before surgery to decrease colonization (3). In the end, these papers show that using new methods such as two layers flap or Mesh graft in adult are possible and sometimes suitable (8,9,10,11).

### CONCLUSION

In spite of various methods in hypospadias repair there is high complication in adult than children; this may come from some changes in repair condition or colonization of skin and urethra and the adults must be consulted on all results and complications of surgeries to avoid illogical exception.

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