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Hypospadias in Sudan, clinical and surgical review

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ABSTRACT

Background: Hypospadias is one of the commonest penile abnormalities in new born males, and occurs as a result of a birth defect resulting in a urethral opening anywhere from the glans penis along the ventral aspect of the shaft of the penis up to the scrotum or the perineum in extreme cases. The condition has a huge impact on the patient's psychological, emotional and sexual well being. This study aimed to evaluate the current trend in the treatment of hypospadias in Sudan. **Materials and Methods:** The was a retrospective study done in Elribat university hospital, department of Paediatrics surgery, for patients who underwent hypospadias surgical repair in the period January 2006 to June 2007. **Results:** There were 50 patients in this study. Regional distribution of the patients showed that 52% of the patients live in Khartoum state, the capital, while 48% were from the peripheries; 12% of patients had family history of similar condition (Hypospadias) and 54% were of low socioeconomic status. Anterior hypospadias was the commonest type (46%), and associated chordee occurred in most of the patients (88%). The most common associated anomalies found were undescended testicles (20%) and inguinal hernia only in 2%. The most common type of repair was MAGPI (meatal advancement and glanuloplasty) with 42% of cases, anterior hypospadias commonest type with 46% of cases, 12% of cases had a family history of the condition and an overall complication rate of 26%. Chordee was the most prevalent association in 88% of cases. **Conclusion:** There is a high familial tendency for hypospadias in Sudan. Associated chordee and other anomalies are in keeping with other reports. Corrective surgery for hypospadias is associated with high complication rate in our setting. Collaboration between surgical specialties such as plastic surgeons, paediatrics urologist and general surgeons may improve the present complication scenario.

Key words: Clinical, hypospadias, review, surgical

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INTRODUCTION

Hypospadias is one of the most common congenital anomalies in male and the most common congenital penile abnormality, representing a spectrum of deficiency of penile development in which developmentally the fusion of the urethral folds is incomplete, so the urethral meatus terminates on the ventral surface of the penis proximal normal site, anywhere from glans to perineum.[1] The condition occurs in approximately one in 150 to one in 300 males[2,3] and recent surveys suggest that the incidence is increasing in industrialised countries, possibly due to environmental estrogens or anti-androgens.[3]

Hypospadias affects child as it is essentially a cosmetic difference leading to organic problems, and more important is the emotional impact of having a penis that looks different and the inability to pass urine in a standing position, this is why always surgery is advocated.[4]

Hypospadias surgery in history started by Alexandrian surgeons named Helidons' and Antyllus (first - second centuries). They described partial resection of glans to locate the orifice more centrally, and they leave proximal hypospadias as incurable. Since that time, many have contributed to development of modern hypospadias repair. More than 300 different types of repairs have been described in medical literature, famous surgeons and their techniques like Mathieu, Snodgrass, Hadidi, etc.

Modern anaesthetic techniques, fine instrument, sutures and dressing materials, antibiotics and surgeon experience have improved the clinical outcomes and have, in most cases, allowed surgical treatment with a single-stage repair within first year of life on outpatient basis.

Nevertheless, hypospadias surgery is still one of the most difficult areas in paediatric urology and

characterised by constant evolution and complications may occur after any reconstructive surgery.

This study aimed to evaluate the practice of hypospadias in Sudan, examine the rate of different types of early complications, identify possible factors responsible for post-hypospadias repair complications, and determine the rate of associated problems with different types of hypospadias.

MATERIALS AND METHODS

This was a retrospective study done in Elribat university hospital, department of paediatrics surgery, for patients who underwent hypospadias surgical repair in the period January 2006 to June 2007. A specific questionnaire completed by the authors included information in the records such as age, socioeconomic study, family history, presentations, types of hypospadias, type of surgery, types of suture materials, urinary catheters and their post-operative removal, post-operative stay and duration of antibiotics used were also recorded.

RESULTS

There were 50 patients in this study. Regional distribution of the patients showed that 52% of the patients live in Khartoum state, the capital, while 48% were from the peripheries; 12% of patients had family history of similar condition (Hypospadias) and 54% were of low socioeconomic status. Anterior hypospadias was the commonest type (46%), and associated chordee occurred in most of the patients (88%). The most common associated anomalies found were undescended testicles (20%) and inguinal hernia only in 2%.

More than a half (52%) of our patients underwent surgical repair in their first three years of life, and most of them were treated by one-stage urethroplasty (78%). MAGPI (meatal advancement and glanuloplasty) operation was used for 42% of the patients, TIP urethroplasty in 32% and Mathieu's repair in 10% of the patients. The end cosmetic results of repair were accepted with good parent satisfaction in 84%, regarding shape of the penis and stream of the urine, while 16% were unhappy and asked for further cosmetic appearance.

Postoperative complications occurred in 26% of the patients, fistula being the commonest complication (14%) [Table 1].

Table 1: Complications in relation to type of operations

Type of operation	Patient's No.	Complications			
		Oedema	Infections	Fistula	Meatal stenosis
MAGPI	21	0	0	4	2
TIP	16	1	0	1	1
Mathieu	5	0	0	2	1
Others*	3	0	1	0	0

*NB = First stage surgery- release of the chordae and flaps, MAGPI - Meatal advancement and glanuloplasty, TIP - Tubularized Incised Plate

DISCUSSION

The high family history in this study agrees with the report of many studies.[5] Chordee is present in most cases of hypospadias, especially when the meatus is located more proximally.[3] Cryptorchidism and inguinal hernia are the most common anomalies present in hypospadias.[6] The reported association of hypospadias and cryptorchidism is 4 to 20% of cases of hypospadias, and hypospadias and inguinal hernia in 20% cases.[5,7] This is in contrast to our study which showed a much lower association rate. Variation in the incidence of associated inguinal hernia may be due to differences in severity of hypospadias in different studies.

The complications of surgery in hypospadias were more common in proximally located meatus.[8] In this study, seven out of 17 patients of proximally located meatus (mid and proximal penile, scrotal and perineal) developed complications, while only six out of 33 patients with distally located meatus (glanular, coronal and distal penile) developed complications.

The common age group at time of hypospadias surgery is more than 36 months. This is not consistent with most published studies, about 6 to 15 months of age has been recommended as the optimal window for repair,[9,10] to allow for increase in size of penis for easy handling.

Complication rate following surgical repair was high in this study, with fistula ranking highest. This is similar to other reports.[11,12] One-stage repair appeared to have the least complication rate, as reported by others.[13]

In conclusion, there is a high familial tendency for hypospadias in Sudan. Associated chordee and other anomalies are in keeping with other reports. Corrective surgery for hypospadias is associated with high complication rate in our setting. Collaboration between surgical specialties such as plastic surgeons, paediatrics urologist and general surgeons may improve the present complication scenario.

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