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Objectives: To evaluate the impact of penile anatomy on the surgical management of hypospadias.

Results: Fourty four patients with different types of hypospadias 88.6% presented more than one year and 11.4% less .we found that 11.4% had glandular meatus,43.2% distal and 45.4% proximal ,also 43.2% had no chordee,45.4% had superficial and 11.4% deep chordee, meatal site after chordee correction24% distal , 60 % proximal and 16% penoscrotal.

Keywords : *penile hypospadias, penile anomalous, surgical repair, outcome*

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Evaluation of the Impact of Penile Anomalous Anatomy on the Surgical Management of Hypospadias in Gezira National Centre for Paediatrics Surgery

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Results: Fourty four patients with different types of hypospadias 88.6% presented more than one year and 11.4% less .we found that 11.4% had glandular meatus,43.2% distal and 45.4% proximal ,also 43.2% had no chordee,45.4% had superficial and 11.4% deep chordee, meatal site after chordee correction24% distal , 60 % proximal and 16% penoscrotal.
The most common operation performed was Denis Browne procedure 36.4%, followed by TIP 27.2%, then mucosal onlay flap 11.4%, Mathieu and MAGPI 9.1%, GAP and mucosal graft, MIV and onlyflap 2.3%. The site of meatus post operatively glandular43.2%, proximal 22.8% and 34% distal meatus.
The most common complication was wound infection 16%, fistula 9.1% and stenosis 2.3%

In conclusion: Hopspadias remains challenges to surgeon, it is importance to detail the penile amatomy in order to select the appropriate surgical procedure.

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I. Background

Hypospadias is one of the most common congenital anomalies defined by abortive development of the urethral spongiosum, the ventral prepuce and in more severe cases penile chordee. The incidence of hypospadias is 1 in 200 to 300 boys are affected.{1}

The etiology of hypospadias remains unknown with environmental exposure in the form of endocrine disruptors, {2} the fact that there are over 250 methods of surgical correction of hypospadias described in the literature indicates that the "hypospadiologists" are still in search of the ideal technique. {3}

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II. Objectives

To evaluate the impact of penile anatomy on the surgical management of hypospadias in Gezira National Centre for Pediatric Surgery (GNCPS), to determine the age at presentation, surgical outcome, detail the description of the penile anatomy in hypospedic patient, define the most suitable surgical operation and asses intraoperative and post operative complication.

III. Patient and Methods

This study was conducted in GNCPS, Fourty four hypospadic patients were seen, operated. Data collected by structure questionnaire for each patient, after informed consent from the parent.

IV. Results

Fourty four patients with different types of hypospadias 88.6% presented more than one year, and 11.4% less than one year. .we found that 11.4% had glandular meatus, 43.2% distal and 45.4% proximal, also 43.2% had no chordee, 45.4% had superficial and 11.4% deep chordee, meatal site after chordee correction 24% distal, 60 % proximal and 16% penoscrotal. We found that 11.4% had intact complete prepuce, the rest of them had incomplete prepuce 88.6 %.

When assessing the anatomy of glans; in 59.1% of cases was found to be cleft, in 38.6% incomplete cleft and just in one case was flat 2.3%. In this study the width of urethral plate is more than 1cm in 43.2% and in 56.8% of pts were less than 1cm and no pts seen with penoscrotal transpotion or penile torsion

The most common operation performed was Denis Browne procedure 36.4%, followed by TIP27.2%, then mucosal onlay flap 11.4%, Mathieu and MAGPI 9.1%, GAP and mucosal graft, MIV and only flap 2.3%. The site of meatus post operatively became glandular in 43.2%, 34% distal meatus and proximal 22.8%.

The most common complication was wound infection 16%, fistula 9.1% and stenosis 2.3%.

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V. Discussion

This prospective study for one year period Feb2012—Feb 2013 in GNCPS aims to evaluated the importance of detailing the penile anatomy on selecting the appropriate surgical procedure.

The study revealed that; the age at presentation is more than one year in 39 patients (88.6%). This figure is well above the recommended age for repair worldwide. The American Academy of Pediatrics recommendation is to perform hypospadias repair at age 6 to 12 months.{4} Only 5 patients (11.4%) were seen within the recommended period. This reflects lack of community awareness. In a retrospective series of 693 patients with primary hypospadias repair Marrocco et al observed an increased number of complications in those older than 1 year compared to patients younger than 1 year.{5}

The distally situated hypospadias represented the majority of patients seen and operated on (54.6%). The figure is slightly lower than literature reports which is 70–80% for distal-(anterior) hypospadias, and 15–20% for midshaft hypospadias.{3}

The overall incidence of chordee in the studied group is 55.8%.This is alittle pit low comparing with incidence reported by Hisham et al from Cario university ; The overall incidence of chordee (71%) and Abdelrahman in Alribat.H which is 88%.{6-7}

With regard to operative plan ,the patients underwent single or two stage ; according to their urethral meatus site, the presence of chordee ,tissue quality & urethral plate width, The patients are categories as 43.2% single stage , two stage 54.5% and 2.3% other ,as we found in literature severe hypospadias need to be staged . The second stage is performed at least 6 months after the first stage. To facilitate the urethroplasty within the glans, during the first stage, dorsal skin is tucked within the glans wings.{3}

The most common operation performed was Denis Browne (N=16) 36.4%, followed by TIP (12) 27.2%, then mucosal onlay flap (N=5) 11.4% and MAGPI and Mathieu (N=4) 9.1% for each and mucosal graft, MIV and GAP procedure (N=1) 2.3% for each.

The overall complication regardless the operation done as flow fistula in Four patients (9.1%), this acceptable when compared to study in Alribat. M.H published in 20011, with fistula rate was 14%.{7}

In a retrospective review of 31 patients who underwent initial hypospadias repair after age 10 years Dodson et al reported complications, including fistula in 32%. Snodgrass mentioned that the most common problem following TIP was fistula, TIP repairs he also used single layer tubularization and a dartos barrier flap but observed a 33% incidence of fistulas, which diminished to 10% using 2-layer sub epithelial closure and using tunica vaginalis, fistula occurred in (14%). {8}

Warren T. Snodgrass in series, A total of 551 consecutive patients underwent distal hypospadias repair. All were corrected by UP tubularization, complication was 4%.{9}

The short period of the follow up in our series in compering to that mentioned in compering study ,Ali Ziada, Amgad Hamza, Mohammed Abdel-Rassoul, Enmar Habib, Ahmad Mohamed and Mahmoud Daw report (9.8%) postoperative complications in 61 cases review in Cairo university with mean follow up period of 26 months.{4} In our study meatal stenosis occurred in one patients 2.3%,which is comparable to Hisham A. El Saket from *Egypt and to* Warrant.Snodgross in a summary of published results in 328 patients in 1999, meatal stenosis developed in (1.5%) .{6}

VI. In Conclusion

Hopspadias remains challenges to surgeon, it is importance to detail the penile anatomy in order to select the appropriate surgical procedure. We have good surgical out come and rate of complication, despite the elder age at presentation.

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