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Mini Review

Glanular Approximation Procedure in Hypospadias Variant of Megameatus Intact Prepuce: A Mini Review

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Abstract

Objective: The megameatus intact prepuce (MIP) is a rare type of hypospadias which is usually diagnosed during circumcision. In this study, it is aimed to present features of glanular approximation procedure (GAP) in the management of these patients. MIP is a simple form of hypospadias which sometimes may produce problems to surgeons dealing with these children. GAP procedure is a simple technique with good cosmetic results producing patient satisfaction. Except for more severe MIP cases, GAP technique is useful in hypospadiac patients with MIP especially having glanular and coronal meatus.

Keywords: *Megameatus İntact Prepuce; Glanular Approximation Technique*

Megameatus and intact prepuce (MIP) is an uncommon type of hypospadias. The locations of the urethral meatus in patients with MIP vary greatly. Patients with MIP usually have a wide coronal or subcoronal meatus with a deep glanular groove (Figure 1). These patients typically have a normal prepuce without penile chordee. No other urological anomalies are associated with MIP.

Figure 1: *Megameatus intact prepuce (MIP) variant of hypospadias in a boy with typical wide mouth glandular meatus.*

The first description of MIP was reported by Juskiewenski., *et al.* in 1983 and later only scattered number of articles have shed light on this type of hypospadias [1,2]. Duckett and Keating described this anomaly in detail [3]. The incidence of MIP among hypospadiac cases in the literature is 3 - 6% [3-5].

Although the embryological origin of MIP is unclear, it has been suggested that MIP is a variant of megalourethra [6,7]. Although it has been suggested that the origin of might be the consequence of neonatal circumcision by some authors, this has been discarded by Peretz and Westreich [7].MIP is not a certain type of hypospadias but rather it includes a spectrum of different appearances [5].The distinct anatomical features of MIP include a spatulated glans with a distal, wide patulous meatus located at the glans penis or at the deep subcoronal groove, an intact foreskin, a very thin corpus spongiosum and no ventral chordee and if chordee is present it is invariably dorsal [3].There are no other urological anomalies associated with MIP so no radiological evaluation is needed in these patients.

Careful clinical examination is important in diagnosing MIP. Before any circumcision, it is recommended that the foreskin should be fully retracted and the glans with urethral meatus inspected. There are conflicting opinions of the effect of circumcision in patients with MIP. According to some researchers, circumcision limits the success of surgical interventions in patients with MIP [8-13].Others oppose this notion and according to them the prepuce dos not have any importance in the repair of MIP [3,4,15].It has been stated that circumcision did not seem to be associated with a high complication rate in MIP patients [15].It is commonly admitted that when MIP is discovered during circumcision, the circumcision should be postponed and the families should be informed about this [16-17].

With respect to the timing of surgical treatment in MIP variant of hypospadias, similar to the other forms of hypospadias, the surgical intervention should be performed between the ages of 6 and 18 months. The aims of surgery in MIP include to have a normal conical glans, a urethral meatus with a normal caliber and a normal urinary stream without any symptoms [18].

Although the GAP is very easy handy procedure, the most problematic part could be to obtain the conical shape of the glans since sometimes proximal glans is very thin. In those specific cases, proximal glanular detachment or urethral stricture can be seen. Stricture is thought to be poor glanular blood supply over the neourethra. Indeed, pyramid or flap surgeries are developed because of those troubling complications. Urethrocutaneous fistula fistula at the glans particularly proximal one is the worst horrifying complication. It may easily end up with a full complete redo repair of the case. Another point is the overlying barrier layer in some GAP cases. It generally harms the coronal grove appearance of the glans and almost always retract into penis.

Several surgical approaches have been suggested for the treatment of MIP. These are GAP, the pyramid urethroplasty, cutaneous advancement procedure, subcutaneous frenulum flap urethroplasty, perimeatal based flaps, meatal advancement and glanuloplasty (MAGPI) technique and tubularized incised plate urethroplasty [3,5,8-14,19,20]. In the presented series, GAP has been our choice of surgical treatment with excellent results. The GAP technique does not require for large flaps like the Thiersch-Duplay method [19,21]. Except for more severe cases, the GAP technique should be the first choice of surgical treatment in MIP patients.

In conclusion, due to wide spectrum of locations of urethral meatus, MIP may pose a surgical challenge for attending surgeon dealing with these patients. GAP technique should be a choice of surgical treatment in most of cases with MIP producing good cosmetic results and patient satisfaction with conical appearing glans penis, vertically slit urethral meatus having straight urine stream. In GAP technique complications are rare and satisfactory functional outcomes are usually achieved.

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