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Meato Cutaneous Fistula after Tubularized Incised Plate (TIP) Repair- An Unusual Delayed Complication

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Authors' contributions

This work was carried out in collaboration between both authors. Author SUS Managed the literature search. Author UVS Wrote the draft of the manuscript. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aims: To report a very unusual delayed complication after tubularised incised plate repair with preputioplasty for a distal penile hypospadias

Presentation of Case: A $2^{1/2}$-year-old boy presented with a distal penile hypospadias. He underwent an uneventful tubularized incised plate repair with preputioplasty(on parents' request) in September 2018. 1 month after surgery there was a small preputial ulcer on the ventrum. Preputial retraction was done under general anaesthesia and the meatus and neourethra were normal. However, at 2 years the child presented with a fistula. During repair it was found that the neourethra was normal and the meatus was communicating with the prepuce giving the appearance of a fistula. Prepuce was retracted and the inner and outer prepuce layers were closed. Recovery was uneventful.

Discussion: Urethral fistula is the commonest complication after hypospadias surgery, the usual site being the neourethra. Suture line dehiscence and secondary phimosis are the commonest complications of preputioplasty, A fistula between the neomeatus and the prepuce occurring after 2

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years is extremely uncommon. Treatment is separating the prepuce from the meatus and meticulously closing the two preputial layers.
Conclusion: A very unusual complication is reported after preputioplasty. Causes and treatment are discussed.

Keywords: Meato cutaneous fistula; tubularized incised plate; penile hypospadias.

1. INTRODUCTION

Hypospadias repair is a delicate challenging surgery wherein the commonest complication that can occur are urethral fistula, meatal stenosis and diverticula of the neourethra. We report a very unusual delayed fistula after hypospadias surgery.

2. CASE REPORT

A $2^{1/2-}$year-old boy underwent a tubularized incised plate repair with preputioplasty (on parents' request) for a distal penile hypospadias in Sept 2018. The postoperative period was uneventful and the urethral stent was removed on the 8th post operative day. The child voided well in a good stream through the neo meatus. At 1-month follow up there was a small preputial ulcer and the parents were unable to retract the prepuce. Gentle preputial retraction and meatal calibration were done under general anaesthesia 2 months after surgery. At 3 months follow up the child was voiding well and the preputial ulcer had healed. In Sept 2020 the child presented with voiding from a fistula. On examination there was preputial stenosis and a fistula in the distal prepuce. (Fig. 1)The child was taken for repair of the fistula. Under caudal block, the prepuce was retracted. To our surprise the neomeatus was adherent to the prepuce giving the appearance of a urethral fistula (Fig. 2)The prepuce was completely retracted and separated from the meatus and the inner and outer preputial skins were closed. A 6 French stent was kept. Post opt period was uneventful. The stent was removed on the 4th post-operative day.

Fig.1. Appearance after retracting the prepuce. Normal meatus and neourethra

3. DISCUSSION

Hypospadias is one of the commonest congenital anomalies of the male genital system the incidence of hypospadias is about 1 to 2 in 200 to 300 live births to 3 in 1000 live births [1]. The commonest site is the distal penile or a coronal hypospadias [2]. The surgical goals of hypospadias repair are full straightening of the penis, formation of a hairless urethra of uniform caliber and adequate size, positioning of the meatus at the tip of the glans and normal penile appearance with minimum complications [1]. A preputioplasty is performed to avoid making the child conscious about a surgical procedure having been done [3] . The TIP repair described by Snodgrass in 1994 is easy, has good cosmetic results and has minimum complications. A preputioplasty can be combined with this technique to provide a normal penile appearance. The preputioplasty can be done for the following reasons: 1. Religious. 2. Psychological benefit for the child. 3. Foreskin plays an important role in normal sexual intercourse. 4. It serves as a tissue reserve if the hypospadias fails [4]. Reconstruction of the prepuce should be done only if the prepuce can be approximated without tension in the midline at the site of the coronal groove [4]. A preputioplasty is also the best method to correct the most visible part of the malformation and obtain a normal looking penis. By adding a preputioplasty, there is no added risk of urethral complications and the incidence of complications of a preputioplasty is the same as circumcision [5]. The usual complications of any hypospadias surgery are urethral fistula, meatal stenosis, urethral diverticula, flap necrosis, penile torsion, infections, persistence chordee and complete dehiscence [2] the commonest being urethral fistula and meatal stenosis [2]. However, the common complications of the TIP repair are

meatal stenosis and fistula [2]. Whereas the complications of a preputioplasty as a procedure are dehiscence and secondary phimosis. The prevalence of these may be from 0% to 30%. Preputial dehiscence may be partial or complete. If a partial dehiscence occurs between the proximal and distal segments which have healed properly and completely, it can lead to a immediate preputial fistula. Successful closure of a preputial fistula has been reported in patients with a preputial fistula or complete dehiscence [6]. However, in a 20-year review and metaanalysis of preputial reconstruction, there is a 8% risk of specific complications (dehiscence of the prepuce and secondary phimosis needing circumcision) but there is no increase in the complications of the urethroplasty [7]. Gunjan Shoor et al presented their results of preputioplasty in tip urethroplasty in 48 children. The reported complications were dehiscence, irregular preputial hood, ventral tethering and preputial tightness. No case of preputial fistula was seen [8].

The urethrocutaneous fistula may occur anywhere along the neourethra. The usual site of the fistula is in the neourethra usually proximally [9]. However, the other common sites include the site of the original meatus, glans penis, at the coronal level in tubularization urethroplasty and at the site of anastomosis in flap urethroplasty [9].

A fistula between the neomeatus and the prepuce occurring as a delayed complication is extremely uncommon and has not been reported. Usually postoperatively, the first retraction of the foreskin is delayed for 2 to 12 months until there is adequate maturation of the scar. Even after this time period, reluctance to retract the prepuce, poor hygiene and adhesion of the prepuce to the meatus followed by infection can give rise to this delayed complication.

Treatment would be separation of the prepuce from the meatus followed by closing the inner and outer preputial layers in 3 or 4 layers. In a situation where there is difficulty in retracting the prepuce or reluctance, circumcision should be offered.

4. CONCLUSION

A case of delayed formation of a meato cutaneous fistula after TIP repair and preputioplasty is presented for its rarity. The etiology and the treatment options are discussed.

CONSENT

As per international standard, parental written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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