

# Peno-Preputial Incisions In Hypospadiac Surgery

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## Abstract

**Purpose:** To evaluate the role of micro-sized (2-3 mm) peno-preputial incisions (PPIs) in reduction of post-operative peno-preputial edema (PPE) following hypospadiac urethroplasties.

**Patients and methods:** Between 2001-2006, 30 patients (n=15 degloved penile skin, n=5 edematous Byer's flaps, n=3 re-constructed prepuce and n=7 more than 1 cm wide mucosal collar) were tried for micro-sized (2-3 mm) PPIs which were made 0.5-1 cm apart from each other, all round along the long axis of the under lying vessels of peno-preputial skin. The depth of incisions varied from skin deep to skin-dartos deep.

**Results:** The micro-sized PPIs effectively controlled early as well as late post-operative PPE. The PPIs healed within 7-10 days without any complications.

**Conclusion:** PPIs can be made safely without potentiating any per or post-operative complication. These incisions reduce PPE and shorten post-operative period for subsequent surgical procedures by promoting early softening, suppling and maturation of the dissected tissues.

## INTRODUCTION

Peno-preputial edema (PPE) quite frequently results following penile burn, trauma, extravasation of fluid, infection and strangulation. Under certain circumstances like hematomas and contusions in the degloved penile skin, prolonged surgery in complex and crippled hypospadiac, construction of wide circum-coronal mucosal collar, preputioplasty and ventralized Byer's flaps, the post-operative PPE becomes severe, prolonged (3 weeks -6 months) and frightening to the patients, parents and surgeons for fear of tension over suture lines, delayed healing, wound dehiscence, infection, fibrosis, difficulty in micturition and discomfort in wearing undergarments. In prolonged persistence of edema, the subsequent surgical procedures may have to be postponed for more than 6 months to a year till adequate tissue revascularization is established for safer dissection, better suture holding and faster wound healing.

(2-3 mm) peno-preputial incisions (PPIs) of variable depth, i.e., either up to the full thickness of peno-preputial skin (Fig. 1, n = 15 to relieve edema only) or in to the full thickness of peno-preputial skin and underlying dartos fascia (Fig. 2, n = 15 to expose haematomas and contusions) were made 0.5-1 cm apart from each other all round along the long axis of underlying vessels of peno-preputial skin.

## PATIENTS AND METHODS

In 30 patients (n=15 degloved penile skin had scattered haematomas and contusions, n = 5 edematous ventralized Byer's flaps, n = 3 re-constructed prepuce and n = 7 more than 1 cm wide and edematous mucosal collar), micro-sized

**Figure 1**

Figure 1: Micro incisions in the peno-preputial skin.



**Figure 2**

Figure 2: Micro incisions in the reconstructed prepuce.



## **RESULTS**

None had per-operative bleeding, intolerable post-operative pain, and discomfort during dressings. The PPIs resulted in a significant reduction in PPE in all the cases and healed within 7-10 days. At 6 months of follow up the scars were inconspicuous without any adhesions or difficulties during 2<sup>nd</sup> stage of urethroplasties (n=3).

## **DISCUSSION**

Many a times, peno-preputial skin becomes obviously edematous (lymphatic, venous or reactionary) even before completion of hypospadiac urethroplasty. Despite compression dressing, this edema may persist for 3 weeks to 6 months. The authors had observed presence of persistent post-operative PPE lasting even more than 6 months to one year in some cases of penile degloving (for correction of the chordee), Byersization of the fore skin, preputial reconstruction, tourniquet effect of tight closure of skin

covering the penile shaft and re-construction of wide mucosal collar at corona. The authors also encountered 11 patients (n=5 cases of penile fracture and n=2 cases each of penile strangulation, cellulitis and trauma) who were having massive PPE that responded quickly after making multiple micro-sized PPIs. The same had encouraged the authors to give micro PPIs following hypospadiac urethroplasties. In literature, scanty reports are available about making multiple incisions in the penile and preputial skins either to prevent haematoma formation,<sup>1</sup> or to relieve edema.<sup>2</sup> Probably, the PPIs have not been tried in hypospadiac urethroplasties due to the danger of bleeding, fistula formation, infections, skin devascularizations, scarring, adhesions, poor cosmesis, and difficulties in 2<sup>nd</sup> stage of urethroplasties. Contrary to it, these micro incisions work as let outs for edema fluid, relieve venous congestion and also drain reactionary fluid formed in response to haematomas / extravasated blood / fractures or infections, thereby preventing infection, seromas formation, excessive fibrosis, adhesions and other harmful effects of prolonged edema. In the present study also, the PPIs had not increased the incidence of urethro-cutaneous fistulas, skin devascularization, infection, scarring, adhesions or disfigurement, rather facilitated early surgical interventions by way of rapid softening and suppling of the

tissues, and healed by 7<sup>th</sup>-10<sup>th</sup> post-operative day. Collectively, multiple PPIs relieve tourniquet effect of the narrow constricting areas following tight closures of penile skin, thus facilitate vascular supply and the drainage distally. These incisions are not to be made at right angle to the supplying vessels to avoid excessive bleeding and distal devascularizations.

### **CONCLUSION**

Not all patients of hypospadiac urethroplasties develop severe PPE. However, as and when required, these micro PPIs can be made safely along the long axis of the underlying vessels to fasten softening, suppling and maturation of the dissected tissues, so as to facilitate subsequent surgical interventions.

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