

The Tubular Elastic Net Bandage: A Useful Penile Dressing in Pediatric Hypospadias

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Abstract We describe the use of the tubular elastic net bandage for penile dressing in surgical repair of pediatric hypospadias. The tubular elastic net bandages were used in 126 hypospadiac boys after corrective operations. The penis was wrapped with a silicone mesh netting. Then, the tubular elastic net bandage was put around the penis over the silicone netting. The bandage proved to be well tolerated and effective. After a catheter was removed, a patient could void with the dressing on the penis. The bandage did not need to be changed due to becoming wet during voiding. The tubular elastic net bandage is a very useful dressing for surgical repair of pediatric hypospadias.

Keywords Penis · Bandage

A truly effective penile dressing for use in hypospadiac boys postoperatively is hard to find. Supportive splint dressings of silicone foam or polyurethane foam are effective but not easy and are not always available [1–3]. Because the penis is a flexible soft organ, the conventional dressings used in hypospadias surgery, which usually consists of dressing gauze and adhesive strips, are inclined to slip off. For this reason, an elastic dressing may be more effective for these patients [4]. We successfully used the tubular elastic net bandage as penile dressing.

Technique

The necessary bandage materials include the tubular elastic net bandage (Fig. 1, ReliaMed Tubular Elastic Net Dressing) and a mesh netting coated with medical grade silicone gel (Mepitel silicone mesh netting, Molnlycke Health Care). The tubular elastic net bandage is commonly used for finger dressing of different sizes. The mesh netting is made slightly sticky by the silicone gel and therefore may be able to adhere to the penis.

The mesh netting width (short dimension) was chosen equal to the diameter of penis, while the bandage length (long dimension) was cut equal to the length of the penis, allowing the mesh netting to be wrapped around the penis in an O shape.

The first step was wrapping the penis with the silicone gel mesh netting. The next steps involved applying the tubular elastic net bandage. A metal device (Chinese patent no. ZL 2008 1 0117372.7) designed by Dr. Senkai Li was applied to put the bandage on the penis. The device was composed of two pieces of semi-column, which were jointed together by a pin on the middle part. The ends of the device could be open and close. One end of the device looked like a duck beak. The other end could close to form a tube. The bandage was doubled back and slipped onto the “duck beak” end, then could be pulled to the “tube” end (Fig. 2). The device bearing the bandage covered the penis shaft. The tubular elastic net bandage was left on the penis after the device was taken off. No tape was needed to hold the bandage in place.

Clinical Experience

The sterile tubular net bandage has been applied immediately after hypospadias repairing operations in 126 cases from age 1 to age 3. The operative technique was a “two in one” urethroplasty combining buccal mucosa and a local flap for urethral reconstruction, which we described in 2005 [5]. After

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Fig. 1 ReliaMed Tubular Elastic Dressing

urethroplasty, a catheter was inserted in the new urethra, and then the tubular net bandage was applied on the shaft of the penis. The dressing was changed on the third and seventh postoperative days and replaced by a new set. If necessary, the dressing could be changed while inspection. After catheter was removed on the fifth postoperative day, the patient could void with the dressing on the penis (Fig. 3).

Comparison

Thirty-four cases of the same age were enrolled as control. After the urethroplasty using same operative method, the penis was wrapped by sterile dressing gauze and adhesive strips.

The dressing gauze could not accommodate the erect and flaccid states of the penis and was inclined to slip off. Nearly half of the dressings slipped off on the third postoperative day.

Fig. 2 The device for penile dressing

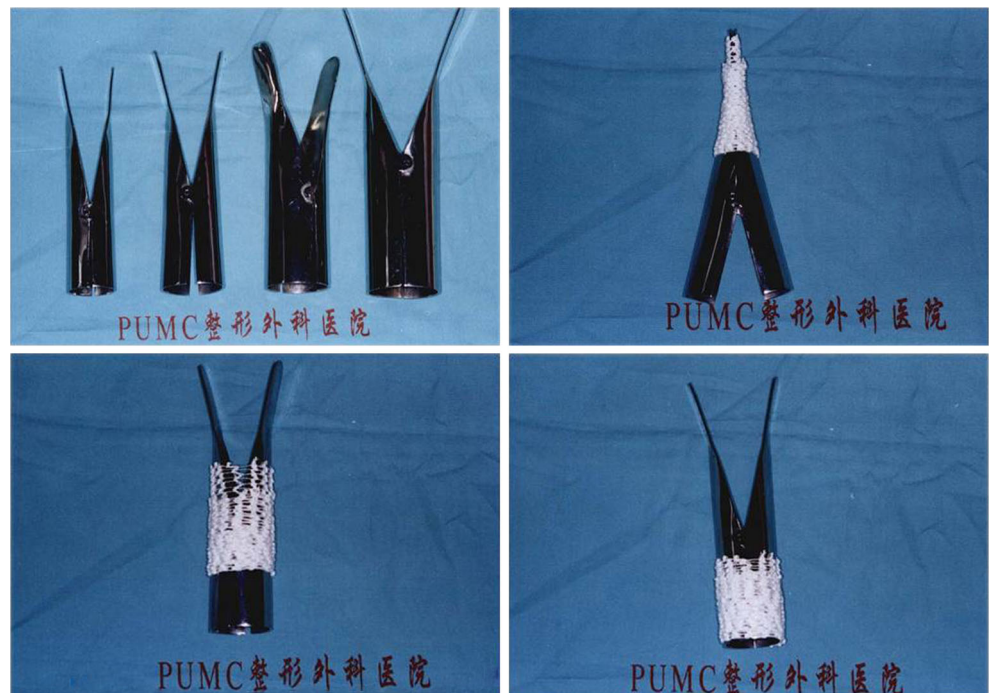


Fig. 3 Voiding with dressing

Even when the dressing was on the penis, it could not provide uniform compression (Table 1).

The tubular elastic net bandage is gently compressive, comfortable, and not inclined to slip off. It is well tolerated by children and does not affect the normal voiding after the catheter removed. The dislodgement of the bandage has occurred in eight cases. The dislodgement might be due to the restless movement of the legs after operation.

Discussion

The tubular elastic net bandage allows the creation of gentle compression and fits the penis shaft very well due to its elasticity. Because the tubular net bandage is a network, the wound could be inspected through the dressing.

The elastic dressing did not disturb the normal voiding function. The children could void with the dressing on the

Table 1 Dislodgement rate comparison of two kinds of different dressing

Groups	No.	Dislodgement rate on the third postoperative day
Tubular elastic net bandage	126	8 (6.3 %)
Dressing gauze and strips	34	16 (47.0 %)

penis. This helped children to tolerate the penile dressing and reduced their psychological stress.

It could be speculated that this bandage would function well in the adults and be suitable for other penile procedures as well.

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