Hypospadias dressing can be kept clean and in place with difficulty, therefore, there are many views on the different methods for postoperative hypospadias dressings. Generally, a hypospadias dressing should control postoperative edema, prevent hematoma formation that predisposes to infection, as it works as a barrier from the surroundings, especially as home care cleanliness and hygiene may not be ideal.

Cyanoacrylate (CA) is an acrylic resin, which rapidly polymerizes in the presence of water, forming long, strong chains, joining the bonded surfaces together. CA is impermeable to water and bacteria, is not easily removable, and peels off by itself. It gives adequate pressure for hemostasis if it is applied in layers.

Previous studies have used a combination of a running polyglycolic acid (PGA) subcutaneous suture, reinforced by CA for surface bonding of the skin, to reduce the rate of fistula formation in urethrocutaneous fistula repair after urethroplasty, and it is used in many surgical practices as a wound sealant, to avoid the use of conventional sutures. However, in this study, we show how pouring several layers of this glue is more effective in reducing the edema and hemostasis than simple conventional dressing.

From January 2007 to April 2011, 61 patients with B and C class of hypospadias, with a mean age of 13.5 months (range: One to four years), were enrolled by Mouriquand and Mure in this study. The entire procedure was described to the parents of the patients and an informed written consent was taken from all of them, according to the Ethical Committee of the University of Medical Sciences.
The patients were randomly divided into two groups. After comparing the age and type of hypospadias, they underwent the Tubularized Incised Plate (TIP) method for repair. Forty-one patients were treated with conventional dressing for hypospadias, which consisted of a mixture of ointment-covered antibiotic gauze wrap and pressure dressing. In 20 of the 61 patients, CA (Glubran-tiss, Virgilo, Italy) was used for postoperative dressing. A feeding tube that was splinted in the urethra and secured by a suture through the glans, was used at the end of surgery. The penis and surrounding area were cleaned and dried. CA was poured over the glans and it took 60 seconds to set to a rubbery consistency, and this was reapplied four to six times, strengthening the dressing.

It was important to keep the penis straight by using a traction suture. The dressing peeled off in about seven to ten days. All the patients had their stents in a double diaper and received antibiotics and analgesics, and were discharged after 24 hours. They were followed-up for two weeks postoperatively, for early complications such as hematoma, infection, edema, dehiscence, and skin necrosis, and after six to twelve months for late complications, like, stenosis and fistula, unrelated to dressing alone.

### Results

The two groups of patients were comparable in terms of age, type of hypospadias (B and C), and use of the TIP method for repair. CA was easier to apply, with no need for removal. The patients and their parents were more comfortable with CA, because it did not get wet or infected and according to its chemical characteristics, had no need for removal. In conventional dressing, 12 (30%) patients had complications in the form of five infections and seven hematomas, all had painful removal of their dressing, and 10 needed repeat dressing. Only one case of hematoma and one case of skin necrosis with infection were seen in CA (10%). Edema was seen in all the patients, in both groups. All patients in the conventional method needed removal of the dressing, which stuck to the wound, versus no such case in CA. In case of pain, it was Nil is CA group that were significant. However, for other variants a much larger trial was needed for investigation.

The dressing came out spontaneously in CA patients and there was no need for a change, so there was no postoperative pain because of the dressing, therefore, patients felt much less pain in the CA group compared to the patients with the conventional dressing.

### Discussion

Dressing for hypospadias repair is a controversial issue, however, the most important goals are, easy application, prevention of wound from trauma and contamination, and having pressure on the wound. It is believed that pressure is essential to control postoperative edema and prevent hematoma formation that predisposes to infection.

Many methods have been described and used in hypospadias surgery, including polyurethane bioclusive foil, Cavi care, SANAV, glove-finger, Fibrin seal, and Melolin and adhesive membrane. Prestipino and his colleagues used CA in four patients with urethrocutaneous fistula, and three had definitive fistula healing. They concluded that fistulae of ≤ 2 mm tended to recover better. In other studies CA was used for simple sharp wounds in the face and extremities (20 patients), inguinal hernia (20 patients), cryptorchidism (20 patients), umbilical hernia (10 patients), hypospadias (17 patients), post-hypospadias fistula repair (8 patients), and cleft lip (5 patients). The results were analyzed in terms of efficacy, cosmetic result, procedure time, material used, and patient comfort, which showed improved results.

In our study, CA dressing shares many goals with others in restricting edema, hematoma formation, and stabilization, if the wound is treated in several layers and lacks permeability to urine and feces. There is no need for repeated changes or pain on removal, in contrast to the previous methods. The patients are comfortable with the dressing and it keeps wound hygiene in a home care setting, with less complication of 10 versus 30%; however, late complications that were seen to be not directly related to the dressing have been ignored.

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References


