

SIMPLE TECHNIQUE FOR STENT FIXATION IN HYPOSPADIAS REPAIR

By

Khairi A (FRCS, MD)

Pediatric Surgery Unit, Department of Surgery, Alexandria Faculty of Medicine, Egypt.

Purpose: Many pediatric surgeons do not leave urethral-stents after hypospadias repair. However, many others still do. We present a simple technique for stent- fixation.

Patients and methods: between April/2002 and April/2004, 36 hypospadias cases were treated by the author. For hypospadias proximal to mid-glans (29 cases,80.5%), a stent was left behind as a routine. Fifteen boys (51.7%) had their stents draining in urinary-bags and 14 (48.2%) in their diapers. The stent was fixed by wrapping a small adhesive-plaster piece (2x1 cm) around the stent, just distal to the meatus , leaving a small mesentery of 10 mm. A stitch of non-absorbable suture was passed through this mesentery, without transfixing the stent, then fasten the two suture ends together lightly around the plaster. The two suture ends were tied to the glanular tension-stitch applied at the start of the procedure. Then normal dressing was done.

Results: The cases came to the follow-up with no problems related to stent- fixation . No accidental stent- migration was observed. Two cases (6.8%) had partial stent-blockage at the bladder-end.

Conclusion: This simple technique for stent- fixation is easy, cheap and suitable for any type of dressing.

Keywords: hypospadias, urethral stent

INTRODUCTION

Many pediatric surgeons with special interest in hypospadias repair would like to leave a stent postoperatively, which also acts as a form of urinary diversion.^(1,2) This allows time for suture line healing in a dry field before being flooded with the urine stream. Many techniques for catheter fixation have been used. Some surgeons use the glanular tension stitch applied at the start of the procedure by fastening it around the tube. Others apply two glanular stitches and fix them to the cut end of the catheter.⁽³⁾ Some use a transfixing stitch that passed through the stent itself and tie it to the glanular tension stitch. Some others use the dressing itself as an additional measure to secure the catheter in place. Herein we present our experience of using a simple technique for stent fixation following hypospadias repair.

PATIENTS AND METHODS

From April 2002 till April 2004, 36 boys (mean age 2.8 years) with hypospadias were repaired by the same author in the pediatric surgery unit, department of surgery

Alexandria Faculty of Medicine, Egypt and then in Dallah Hospital, Riyadh, KSA. Seven cases (19.4%) with distal glanular hypospadias had been repaired by meatoplasty and not been stented. Twenty-nine boys (80.5%) with more proximal hypospadias were stented post-operatively. Types of repair included (Meatal Advancement &Glanuloplasty Incorporated) MAGPI⁽⁴⁾ (12 boys, 33.3%), Snodgrass^(5,6) (13 boys, 36.1%) and fistula closure⁽⁷⁾ (4 boys, 11.1%). The stent was kept in place for an average of 4.2 days following MAGPI, 6.7 days following Snodgrass and 6 days following fistula closure. Fifteen boys (51.7%) had their urine drained in a urinary bag and 14 boys (48.2%) had been drained in their diapers (double-diaper technique).The stent was fixed by wrapping a small piece of adhesive plaster (2x1 cm) around the stent just distal to the new meatal orifice , leaving a small mesentery of 10 mm parallel to the stent and then passing a stitch of non-absorbable suture through that plaster mesentery, making sure it did not transfix the stent, and then tying the two suture ends together around the plaster lightly without any pressure on the catheter itself. Lastly the suture ends are tied to the tension stitch applied at the start of the repair to the glans. Then the normal dressing was done (Fig. 1-5).

RESULTS

All cases came for follow up visits with the stent in place. No case had accidental stent migration, whether in or out.

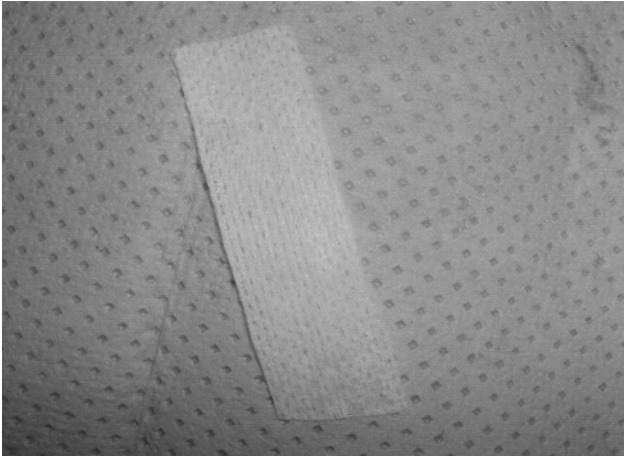


Fig 1. Plaster piece 2x1cm.

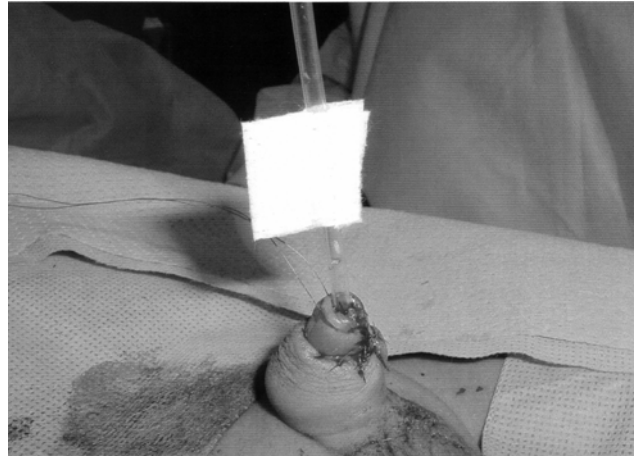


Fig 2. The plaster piece is wrapped around the stent.

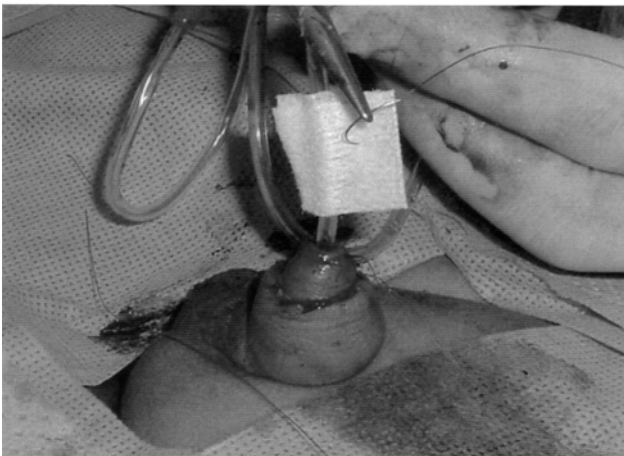


Fig 3. A non-absorbable stitch is passed through the plaster, but not through the catheter.

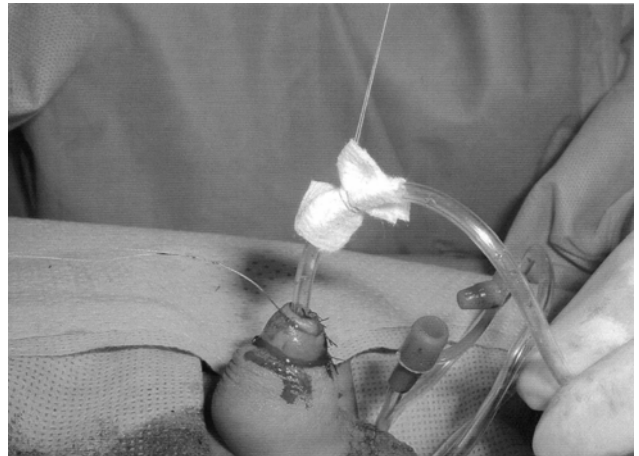


Fig 4. The thread is now tied around the plaster.

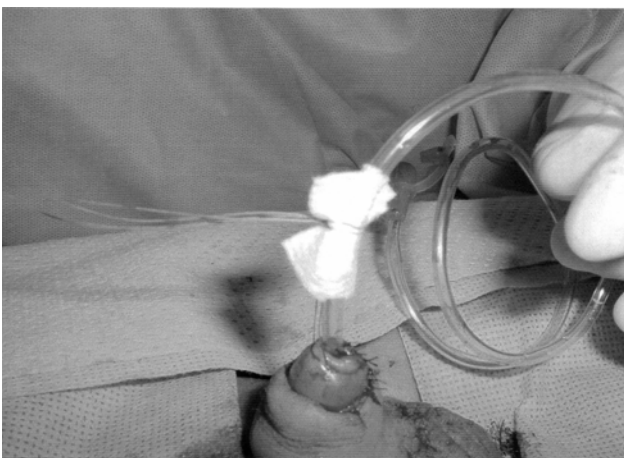


Fig 5. Lastly, it's tied to the penile tension stitch.



Fig 6. A week later..



Fig 7. In double diaper.

DISCUSSION

Diversion of urine away from the suture lines always has been a matter of debate. Whether or not to divert and whether or not to stent are still two disputed questions.^(1,2) Even within the group of surgeons adopting the policy of leaving a stent, the technique for doing that is not the same. Several large series support the performance of distal penile hypospadias repair without the use of a urethral stent (stent-free hypospadias repair).^(1,2) Again, within the group of surgeons who adopt this policy, some still leave a catheter in certain situations, mostly when they feel insecure about their repairs. This occurs in situations like extensive tissue dissection, repair done under tension, uncertainty about the vascularity, or any suspicion of stenosis of the terminal meatus or narrowing of the urethral repair itself.^(1,2) Some surgeons still do both diversion through supra-pubic route as well as stenting through the urethral repair.⁽¹¹⁾ Young children will tolerate a tube that terminate in the bulbous urethra, but in older children, voiding becomes painful. A catheter ending in the bladder, especially one with a balloon, stimulates bladder spasms that force urine out around it. This is because the balloon usually rests on the trigone and excites bladder contractions. Also, the balloon leads to infection and does not allow for a trial of voiding.⁽³⁾ In any case, when the decision to leave a catheter in place is taken, fixation of that stent is of utmost importance. The best repairs can be jeopardized because of improper catheter fixation. Movement of the catheter can cause shearing effect with the suture line. Catheter movement outside the bladder neck may cause pain especially in boys in late childhood. On the other hand, excessive catheter movement inside the bladder may excite bladder contractions.⁽³⁾ This might force urine around the catheter in a high pressure, which might in turn lead to disruption of the suture line. Accidental pulling of the catheter outside the urethra denies the repair from the benefits for which it was left behind. Many techniques for tube fixation have been used for a long time. Some surgeons

use the glanular tension stitch applied at the start of the procedure by tying it around the tube.^(8,9,10,12) This, however, might cause obstruction of the catheter at the site of the tie if excessive force was used or on the other hand may allow the stent to slip outside if the force of tying was not enough. Others fasten the trimmed end of the tube to the glans in two places with non-absorbable sutures.⁽³⁾ This however, means that the stent end has to be cut for a short distance from the meatus or even flush with it, which is not suitable for all cases. Also this form of fixation is not suitable in cases where the stent is to be left draining in a bag system. Some others use the dressing applied at the end of the repair as an additional measure to secure the catheter in place. This however means that if the dressing has to be changed for any reason, being soaked, for instance, or the surgeon needs to inspect his or her repair before deciding whether or not to remove the stent, the catheter fixation will be disturbed. Also, special and relatively expensive forms of dressing might be needed to achieve stent fixation. Some others use a transfixing stitch that pass through the stent itself and tie it to the glanular tension stitch. Here, trickling of urine outside the catheter at the site of transfixion mostly occurs. This is not suitable for cases drained into a bag system. The catheter might get blocked by the suture passing through its lumen. This might be made worse by the interaction of the urine contents over the suture material. Also, weakening of the tube at the puncture site certainly occurs. The technique we present here, avoids all these possible complications. It keeps the catheter integrity untouched. It does not rely on the dressing for its proper action. It is simple, cheap and easy to do.

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