

INTRAVESICAL CATHETER KNOT: PREVENTION AND MANAGEMENT - A CASE REPORT.

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INTRODUCTION

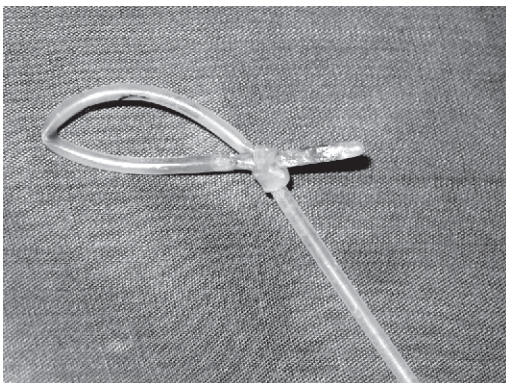
Intravesical catheterization is a frequently used technique in medical practice. Its indications include diagnostic, therapeutic and for monitoring purposes¹. Although it is regarded as a simple procedure, it is not totally devoid of complications. Reported complications vary from minor, like infection and bleeding to serious one, like bladder perforation².

Intravesical knotting of the urethral catheter is a rare complication and involves significant morbidity³. Due to rarity of this complication, lack of awareness exists in our medical community. This risk can be reduced by adhering to proper technique and observing precautionary measures, while performing bladder catheterization.

CASE REPORT

A four year boy presented to our unit with midpenile Hypospadias. He had severe Chordee and meatal Stenosis. Two staged Aivor Bracka repair was planned. During first stage, size 8 Fr Latex Foleys catheter was passed. As per protocol, the catheter was removed on first postoperative day. Introduction and removal of catheter were without any difficulty and complication. Recovery after Stage 1 was uneventful and Stage 2 was planned after 6 months (Figure 1).

Fig 1: Knotted catheter after removal from the patient



During Stage 2, size 8 Fr Hypospadias tube (Silicone made) was introduced in to the bladder to bypass the reconstructed neourethra, again without any difficulty. Recovery from Stage 2 was uneventful and patient was asked to come for follow up on 5th postoperative day for removal of catheter. A gentle try for removal of catheter failed as the tube was stuck. The tube was again pushed further in to the bladder and another gentle attempt for tube removal made which also ended in failure. As the site of resistance was exactly the same, a provisional diagnosis of tube knotting was made.

Urethra was instilled with copious amount of Lignocain gel and gentle sustained traction applied on the tube. This time, the attempt was successful and the tube came out revealing a figure of 8 knot about 2 inches from the proximal end. A brief span of mild haematuria followed which cleared spontaneously in few hours. After 6 months of follow up there was no evidence of meatal stenosis, urethral stricture or fistula. Patient is passing urine through neomeatus without any difficulty.

DISCUSSION

Knotting of catheter is a rare complication with an estimated incidence of 0.2 per 100000 catheterizations¹. We think many cases go unreported as only about 40 cases have been reported in world literature⁴. Catheter knotting not only complicates an otherwise simple procedure, but also incur additional physical and financial burden on the patient, in the form of investigations and additional procedures.

The possible mechanism behind a catheter knotting is the excessive length of the catheter in the bladder forming a coil. When bladder decompresses the catheter end loops through the coil. Counter traction at removal of catheter tighten the coil ending up in a knot⁵.

In one such literature review the common factor in all the cases was excessive intravesical length of the catheter⁶. In this review of 18 cases, only in 2 patients, the indication for catheterization

was hypospadias repair. The probable reason of knotting in our case was also excessive intravesical length of the hypospadias tube. After this mishap, we have limited the intravesical length of the catheter to the minimum possible, as recommended by other authors.

Various methods have been used to remove the knotted catheters. These include sustained traction under local or general anesthesia, use of guide wires, urethral dilatation, cystoscopic removal and open surgical methods⁷. We were lucky to remove the catheter with gentle sustained traction under topical anesthesia and with minimum morbidity.

The best course to deal with any complication is to prevent it. As the most important causative factor in knotting is excessive intravesical length of the tube, the logical remedy is to limit the intravesical length to minimum possible level⁸. This can be achieved by advancing the catheter only a short distance after urine begins to flow and then securing it safely. Aged matched length of the urethra should also be kept in mind⁹.

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