Volume : 3 | Issue : 6 | June 2014 • ISSN No 2277 - 8179

Research Paper

Adventitious knot in the foley's catheter

Medical Science

KEYWORDS : Retained Foley's catheter, intravesical knot, ultrasound, cystoscopy.

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ABSTRACT

We report a rare case of retainedfoley's catheter due to intravesical knot in a 26 year old female patient who came during emergency with intestinal obstruction. She was catheterised on admission for routine monitoring and catheter was to be removed after 4-5 days of surgery. Ultrasonography revealed foley'sintravesial knot proximal to bulb. Foley's was removed by minimal invasive technique (cystoscopy) without any morbidity.

Introduction:
Foley's catheterization is a daily ward or emergency procedure and is essential inpost operative care of major abdominal surgeries. It is associated with simple complications like infection, hematuria to serious but rare ones like perforation[7]. Retained Foley's catheter is a known complication mainly because of inability to deflate bulb, management of which have been well explained and reviewed[6,5]. A rare case of retained catheter is the spontaneous true knotting of catheter on itself as we encountered in our case[1]. Lack of awareness still exists in medical fraternity due to its rare incidence.

Case Summary:
A 26 year old female, with past history of abdominal tuberculosis admitted in our hospital for intestinal obstruction underwent exploratory laparotomy, intra-operatively there was ileal stricture for which resection and anastomosis was done. 14 F foley's catheter was inserted pre-operatively which was to be removed on 5th post-operative day, but even after numerous attempts with gentle traction,the foley's couldn't be removed.

Primarily diagnosed as retained foley's catheter due to dysfunctional bulb, ultrasonography was done to ascertain a cause. But to our surprise ultrasonography revealed foley's knot proximal to bulb (figure:1). Functionality of the foley's bulb was confirmed after deflating and inflating foley's bulb with the knot in-situ.

After long discussion with urologist cystoscopy was planned. Cystoscope was passed per-urethrally along catheter. Foley's knot was visualised (figure:2) in bladder after which foley's was removed "in line" by manoeuvring and gentle traction under vision. No urethral injury was sustained and 14 F foley's was inserted, as patient was given regional spinal anaesthesia, which was removed after one day. Patient was discharged after four days and had no urinary complaints on regular follow ups.

Figure:1

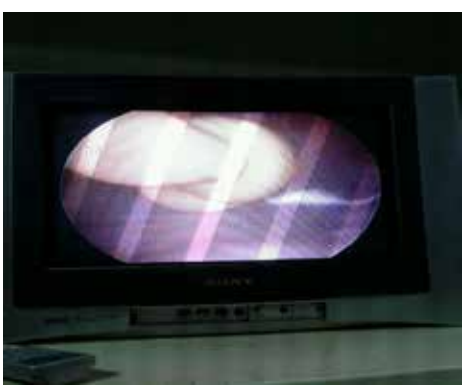

Figure:2

Discussion:
Knotting of catheter is a rare complication with an estimated incidence of 0.2 per 100000 catheterizations[3]. Most incidence occurs in paediatric age group during cystourethrography, self intermittent catheterization involving infant feeding tubes or foley's catheter upto size of 8F. We think many cases go unreported as only 40 cases have been reported in world literature[8]. Catheter knotting not only complicates an otherwise simple procedure, but also incur additional physical and financial burden on the patient and additional minimally invasive procedure is required for removal of the same.

As an adult female urethra length is 4 cm, the possible mechanism behind a catheter knotting is the excessive length of the catheter in the bladder forming a coil[8,4]. When bladder decompresses, flow of urine further increases coiling[8]. If foley's bulb comes to lie proximal to coil, while securing catheter coil diameter is reduced leading to loose knot between foley's bulb and internal urethral opening. Counter traction during removal of catheter acts as last nail on coffin resulting in true knot, which warrants surgical intervention.

Various interventions have been used to deal with this stochastic process. These include sustained traction under local or general anaesthesia, use of guide wires when knot is not tight enough, cystoscopic removal and open surgical methods[1]. We were lucky to remove the catheter by cystoscopy without any urethral injury.

Conclusion:
As the popular adage goes "Prevention is the best cure", the determining factor in knotting is excessive intravesical length of

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the catheter, the logical remedy is to limit the intravesical length to minimum possible level. The catheter should be advanced only for a short distance after urine begins to flow and then inflating the foley's bulb or we could devise separate catheters for female with shorter length. Due to past history of tuberculosis, reduced bladder capacity was thought as confounding factor, which was ruled out by ultrasonography and cystoscopy.

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