

## Case Report

# How to Avoid Urethral Injury during Foley Catheter Changing in Spinal Cord Injured Patients

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## Abstract

**Background:** In patients with spinal cord injury who require frequent Foley catheter changes, gross hematuria is often seen following the catheter change, causing blood clots and the potential for the catheter to not drain properly. This complication usually occurs because the Foley catheter balloon is inadvertently inflated in the urethra causing injury.

**Objective:** To avoid urethral injury by modifying the technique of Foley catheter insertion.

**Method:** Clamp the existing Foley catheter for a short time to leave a small amount of urine retained in the bladder. When the new Foley catheter is inserted, the retained urine should drain out if you are in the bladder or close to the bladder neck. Advance the catheter another 2-3 cm to ensure proper placement. The balloon can now be safely inflated.

**Results:** Highly successful

**Conclusion:** This simple modification in the technique of inserting a Foley catheter avoids urethral injury in SCI patients during Foley catheter changes.

## Keywords

- Urethra injury
- Foley catheter
- Spinal Cord Injuries

## INTRODUCTION

During Foley catheter changes, urethral injury can occur as a result of inflating the balloon in the Urethra [4]. It is difficult to be sure that the catheter is in the bladder by simply looking at the amount of catheter tubing that remains outside the urethra after insertion. There have been suggestions that after insertion of the catheter, irrigating the catheter and aspiration of the irrigation fluid indicates that the catheter is in the bladder [1]. However, this technique is rarely used in practice today.

## MATERIALS AND METHODS

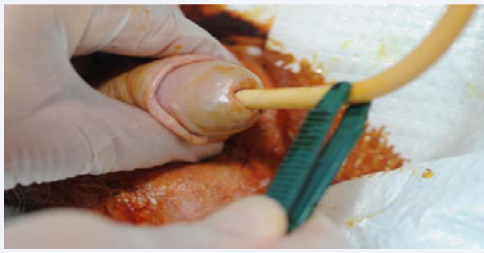
I have demonstrated great success with a minor modification to the practice of changing a Foley catheter. I have applied a clamp (does not need to be sterile) to the existing Foley catheter tubing for 5-10 minutes to retain a small amount of urine in the bladder. The clamp is placed at the junction of the Foley catheter where it connects to the drainage bag tube, and left in place (Figure 1) until the catheter is ready to be removed. Retrieve the size and type of catheter needed for replacement. Open the catheter tray and prepare the sterile field. Open the new catheter, and drop it on the sterile field. Using sterile gloves lubricate the tip of the catheter and connect a syringe to the balloon port of the old catheter; do not use negative pressure to avoid cuffing. It is

acceptable to use gentle suction at the end to make sure water is out [2]. Use a betadine cotton swab to clean penile shaft skin and glans. Hold the shaft of the penis with the non-dominant hand; use the dominant hand and the plastic forceps to remove the old Foley catheter. Keep gentle pressure on the penis to keep the residual urine in the bladder (Figure 2).

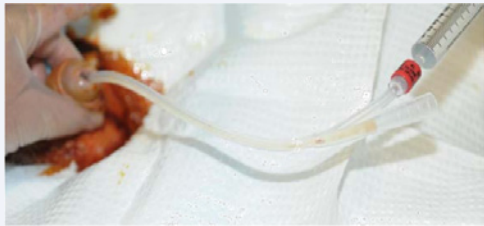
Swab the meatus and insert the lubricated new Foley catheter using the forceps with the dominant hand. Continue to thread the catheter until urine comes out of the catheter end. Push the catheter in another 2-3cms. At this point, you can be assured that



**Figure 1** The clamp is placed at the junction of the Foley catheter where it connects to the drainage bag tube, and left in place until the catheter is ready to be removed.



**Figure 2** Hold the shaft of the penis with the non-dominant hand; use the dominant hand and the plastic forceps to remove the old Foley catheter.



**Figure 3** At this point, you can be assured that the catheter is in the bladder and it is safe to inflate the balloon.

the catheter is in the bladder and it is safe to inflate the balloon (Figure 3). This technique can be used in patients who are prone to autonomic dysreflexia as long as you do not leave the clamp on for a long period of time.

## RESULTS

Highly successful.

## DISCUSSION

When you are changing the Foley catheter in patients with SCI, the bladder is usually empty and there is no urine to demonstrate that the new catheter is safely in the bladder. If the balloon is inflated without visible return of urine from the catheter, traumatic injury to the urethra can occur. This can easily be avoided by using the technique and will prevent multiple attempts and manipulations which can cause a flare up of urinary infections.

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