**INTRODUCTION**

Up to 25% of hospitalised patients undergo routine urethral catheterisation (UC) during their inpatient stay and approximately 0.3% will sustain iatrogenic urethral trauma during the catheter insertion process [1] resulting in bleeding, false passage and stricture formation, associated with a considerable health care costs of managing these complications [2], but in practice this seems to be more common than this. Urethrotech® [3] has developed a ‘ready-to-use’ 2nd-line medical device (integrated hydrophilic nitinol guide wire into 16F Silicone 3-way Foley catheter) for failed or difficult urethral catheterisation, particularly in clinical environments where no specialist equipment or expertise is available, avoiding more dangerous alternatives such as suprapubic catheter (SPC) insertion.

**AIM**

- To determine the incidence of traumatic urethral catheterisation retrospectively and prospectively.
- To evaluate the safety and efficacy of this new Urethrotech® UCD® in men undergoing routine urethral catheterisation prior to cardiac surgery.

**MATERIALS & METHODS**

- 150 consecutive male patients undergoing Cardiac Surgery at the Heart Hospital evaluated retrospectively
- Complete search through the patients’ Cardiac Surgery ICP documentation.
- 74 patients evaluated prospectively
- Incidence of traumatic urethral catheterisation and need for suprapubic catheter (SPC) insertion determined.
- 100 similar patients then studied prospectively after UCLH Clinical Effectiveness Steering (CESS) trial to trial a UCD® to see if it reduced the incidence of trauma
- Mean patient age 64.4 years
- Standard of procedure documentation also reviewed.

**RESULTS**

- 127 of 150 patients reviewed retrospectively had complete documentation in their clinical notes and none had documented consent or been counselled about potential complications of urethral catheterisation.
- No adverse events were encountered using the UCD® in this high-risk group of patients and all 100 UCD® were inserted without technical difficulty by non-specialist clinical staff normally performing the pre-operative catheterisation.

**UC- Outcome in 150 high risk patients retrospectively evaluated**

4 adverse events:
- all required SPC for traumatic and unsuccessful urethral catheterisation

**UC- Outcome in 74 high risk patients prospectively evaluated – counselling and consent**

7 adverse events:
- Urethral pain/perineal pain/urethral bleeding (n=15; 6.8%)
- Suprapubic catheter (n=2; 2.7%)

**Advantages of the Urethrotech® UCD®**

- UCD is a safe 2nd-line urethral catheterisation device which can solve a medical emergency of failed urethral catheterisation
- Integrated guide wire system avoids needle-stick injuries and risk of damage to the catheter balloon inflation channel when using a SPT approach (i.e., trying to puncture the tip of a standard Foley catheter to introduce a non-integrated guide wire)
- Minimum additional training required to enable non-specialists health care professionals to use UCD

**UCD Outcome in 100 high risk patients prospectively trialled using Urethrotech® UCD®**

0 adverse events

**CONCLUSIONS**

- Urethral catheterisation is associated with a significant risk of trauma – ten times the reported incidence.
- To reduce that risk, the catheter should be passed over a guide wire, should 1st pass standard catheter insertion be encountered with resistance, as offered with the Urethrotech® UCD®; or is common practice for passing catheters into other anatomical structures of the body.
- This should particularly apply in high risk patients, such as those being catheterised prior to cardiac surgery who are about to be heparinised.
- The UCD allows for safe urethral catheterisation in situations where initial catheterisation has failed and can be performed by nursing staff in the community, preventing urethral trauma and avoiding unnecessary visits to the emergency department, hospital admission, catheterisation under cystoscopic vision or suprapubic catheter insertion.

**TREATMENT ALGORITHM**

**URETHROtech® URETHRAL CATHETERISATION DEVICE** (UCD®)

16F 3-way silicone urethral catheter with integrated guide wire for safe 2nd-line urethral catheterisation

Guide wire is glued to luer lock ‘guide wire stopper’, which fits snugly into catheter guide wire safe arm to form ONE secure Medical Device UNIT

Syringe is attached to luer lock ‘guide wire stopper’ to prime and lubricate the guide wire with sterile water or saline.

The guide wire is introduced into the urethral meatus with the penis on stretch and advanced with wavelike movements into the bladder when it curl up, dragging the catheter behind.

The catheter is then passed over the guide wire into the bladder bypassing an enlarged prostate avoiding urethral injuries.

**REFERENCES**

3. [www.urethrotech.com]