

Not Just a Tube

Raising Awareness of Urethral Injuries from Long-Term Indwelling Urethral Catheters

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Introduction

Indwelling urethral catheters (IDCs) are the bread and butter of Urology. IDCs are mostly used to facilitate bladder drainage for short periods of time. Indications for long-term use of an IDC (i.e. > 4 weeks) include: chronic urinary retention or incontinence, strict fluid balance monitoring, disability that impairs normal urination, and contamination of wounds by urine. A long-term IDC may be the only option for very co-morbid patients in whom surgical intervention or suprapubic catheter insertion is contraindicated.

The use of IDCs is widespread in hospitals, rehabilitation facilities, nursing homes, and the community. Consequently, it can be easy to dismiss IDCs as benign drainage tubes. However, IDCs can have serious complications, such as catheter-associated urinary tract infections, bladder spasms, and discomfort. Another significant but often under-recognised complication is urethral injuries.

The spectrum of urethral injuries from IDCs ranges from partial erosion of urethral mucosa to complete cleavage of underlying tissues (e.g. glans penis, penile shaft, vulva). An IDC that is too large places excessive pressure on the meatus or urethra thereby triggering erosion. Also, an IDC secured under tension can act as a bowstring cleaving through soft tissues.

Objectives

- Measure the prevalence of urethral injuries in adults with a long-term IDC who reside in a regional and rural catchment of Queensland, Australia.
- Determine the distribution of sex, age, duration of IDC, and site of IDC changes among this cohort.

Methods

- A cross-sectional analysis of 150 adults who had an IDC for ≥ 4 weeks between January 2019 – June 2021.
- The prevalence of injuries was determined from:
 - Data obtained from voluntary patient surveys
 - Documentation of urethral injuries in medical records

Results

The majority of the cohort were males (88.7%, 133/150) compared to females (11.3%, 17/150).

The overall prevalence of urethral injuries in this cohort was 7.3% (11/150).

The prevalence of urethral injuries among men was 7.5% (10/133) compared to 5.8% (1/17) in women.

The single female case involved mucosal erosion extending from the urethral orifice for approximately 5mm into the distal urethra.

The urethral injuries encountered in the male cases included:

- 4 x cases of meatal erosion
- 2 x cases of glanular hypospadias
- 2 x cases of sub-coronal hypospadias
- 1 x case of distal penile urethro-cutaneous fistula
- 1 x case of hypospadias extending from meatus to mid-penile shaft

Cohort (N=150)	Mean Age	Mean Duration of IDC	Site of IDC Changes
Male (N=133)	70.6 years	38.5 weeks	Hospital = 82 (61.6%) Nursing home = 21 (15.8%) Community = 30 (22.6%)
Female (N=17)	68.3 years	27.3 weeks	Hospital = 7 (41.2%) Nursing home = 4 (23.5%) Community = 6 (35.3%)

Figure 1: Spectrum of Male Urethral Injuries Acquired from Long-Term IDCs



(A) Meatal Erosion



(B) Glanular Hypospadias



(C) Distal Penile Fistula



(D) Sub-Coronal Hypospadias

Conclusion

A variety of urethral injuries due to long-term IDCs were identified in this Queensland cohort.

Urologists need to monitor for urethral injuries caused by long-term IDCs.