

H72 Exsanguination Due to Urethral Laceration

Hae-Sun La*, Pittsburgh, PA 15261; Tanner Bartholow, MD, Allegheny County Medical Examiner's Office, Pittsburgh, PA 15222; Todd M. Luckasevic, DO, Allegheny County Medical Examiner's Office, Pittsburgh, PA 15222

Learning Overview: The goal of this presentation is to report a case of urethral laceration due to Foley catheter manipulation leading to hemorrhage and eventual death.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by discussing the approach and findings related to deaths due to urethral injury from Foley catheter manipulation.

A Foley catheter is frequently used in medical settings to facilitate bladder emptying. There are multiple Foley catheter-related complications, including urinary tract infections and Foley catheter related genitourinary trauma.¹⁻³ While the death investigation of urinary tract infection related to Foley catheter use is likely to be uncomplicated, the death investigation of urethral laceration and hemorrhage due to Foley catheter manipulation is not well documented.

This is a case of a 65-year-old White male with a complex medical history who presented to a local hospital from a rehabilitation facility. The decedent was undergoing an attempted change of his chronic indwelling Foley catheter when the patient experienced pain. The initial Foley catheter was removed and a second insertion attempt was performed. The decedent continued to experience pain, and there was a significant amount of urethral hemorrhage. The decedent was transported to a hospital and surgical intervention was performed, where evidence of significant urethral trauma in the bulbous urethra with active bleeding as well as active bleeding from the prostate was observed. The decedent experienced intraoperative hypotension and tachycardia and postoperative respiratory failure.

In performing the postmortem examination, careful considerations were made in order to best visualize the extent of the urethral injury suffered by the decedent. It was decided that the best approach in this case would be a cross section of the decedent's genitalia in the sagittal plane along the urethra. This revealed a laceration of the proximal urethra, superficial abrasion of the mucosa at the junction of the bladder and prostate, and superficial abrasions of the bladder mucosa. The cause of death was urethral laceration following a Foley catheter manipulation and the manner of death was certified as accidental.

Catheter-related trauma is a known complication of Foley catheter placement.¹⁻³ While there are multiple reports about the rate of Foley catheter-related trauma and associated hospital course due to said trauma, the number of deaths due to Foley catheter-related trauma is unclear.⁴ The literature search on fatalities related to Foley catheter-related death yielded case reports of bladder rupture from Foley catheter insertion, leading to death.^{4,5} However, these cases are extremely rare and other reports of death due to hemorrhage resulting from urethral laceration due to Foley catheter manipulation were not found.

In cases where there was an internal injury due to Foley catheter manipulation, external examination of the genitalia is not sufficient. The length of the urethra going into the bladder should be exposed to examine the extent and the exact location of the injury.

This case is a rare example of complications of Foley catheter-related trauma that led to death. This case illustrates careful considerations forensic pathologists need to make when handling cases where there is a possibility of injury from the usage of Foley catheters that may have significant impact in determining the cause and manner of death.

Reference(s):

1. Roger C.L. Feneley, Ian B. Hopley, and Peter N.T. Wells. (2015) Urinary catheters: history, current status, adverse events and research agenda. *Journal of Medical Engineering & Technology*, 39:8, 459-470, doi: 10.3109/03091902.2015.1085600.
2. Bregman J., Iams W., Theobald C. Urethral Trauma After Foley Catheter Placement: A Teachable Moment. *JAMA Intern Med*. 2016;176(11):1606-1607. doi:10.1001/jamainternmed.2016.5438.
3. Leuck A., Wright D., Ellingson L., Kraemer L., Kuskowski M.A., Johnson J.R. Complications of Foley Catheters – Is Infection the Greatest Risk? *The Journal of Urology*. 2012;187:1662-1666. doi:10.1016/j.juro.2011.12.113.
4. Awad M.A., Osterberg E.C., Chang H., et al. Urethral catheters and medical malpractice: A legal database review from 1965 to 2015. *Transl Androl Urol*. 2016;5(5):762-773. doi:10.21037/tau.2016.08.02.
5. Mahesan Paul A.B., Simms L., Paul A.E., Mahesan A.A., Ramzanali A. A Rare Cause of Death in a Woman: Iatrogenic Bladder Rupture in a Patient With an Indwelling Foley Catheter. *Urology Case Reports*. 2016;6:30-32.

Foley Catheter, Urethral Laceration, Urethral Injury