

# A Simple and Reliable Method of Indwelling Catheter Fixation

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❑ Over two thousand years ago, bronze tubes were used for bladder catheterization



❑ A S shaped bronze tube was found with other medical devices in the ruins of Pompeii

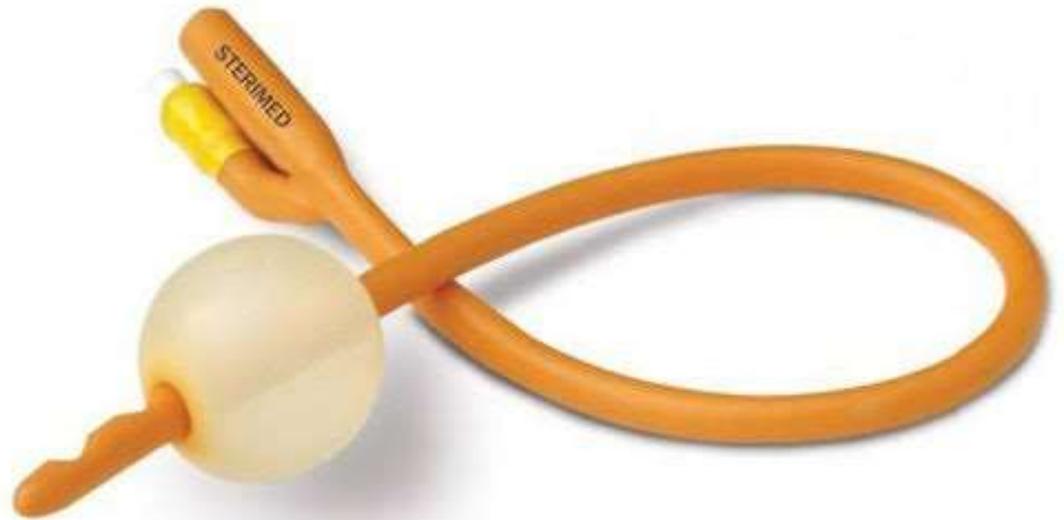


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- Cule J. Catheters: forerunners of Foley. *Nursing mirror* 1980;150:Suppl i-vi.
  - GÜNER E, GÜNER Şİ, ÖZDEMİR O, GÜNEŞ ME, TUĞCU V. The Urinary Catheters Used in Ancient Times Discovered in Anatolia. *Journal of Reconstructive Urology*. 2017;7(3):81-5.



# Foley catheter

- ❑ Introduced in 1936, by a U.S. manufacturer, the Davol Rubber Company
- ❑ Designed by **Frederick Foley**



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Carr HA. A short history of the Foley catheter: from handmade instrument to infection-prevention device. *Journal of endourology* 2000;14:5-8.



- ❑ Millions of patients are now using a Foley's catheter for various indications
- ❑ In the USA 25% of patients in acute care setup receive indwelling catheter



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Saint S, Lipsky BA. Preventing catheter-related bacteriuria: should we? Can we? How? Archives of internal medicine 1999;159:800-8

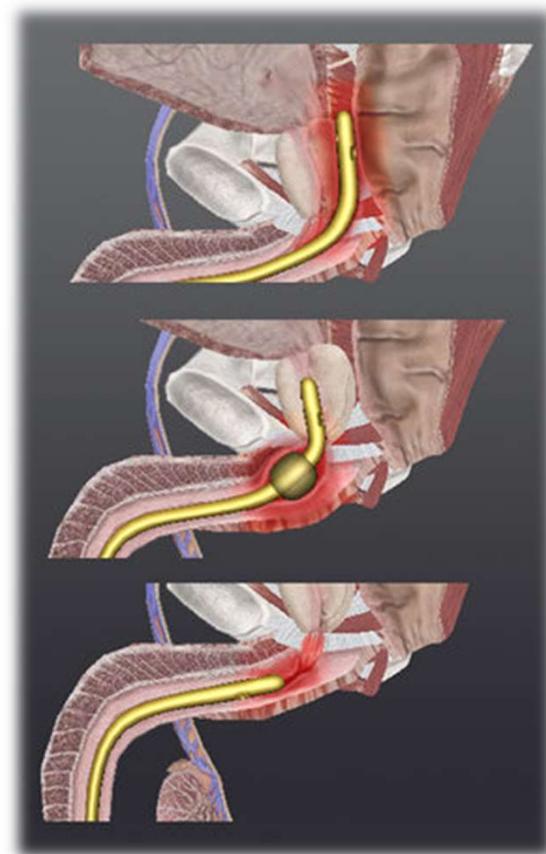


## Indications of indwelling catheter:

- ❑ Acute urinary retention/bladder outlet obstruction
- ❑ Need for accurate I and O if critically ill
- ❑ Assist in healing open sacral/perineal wound in incontinent patients
- ❑ To improve comfort during end-of-life care, if needed
- ❑ Perioperative use in selected surgical procedures
  - Urologic/other surgeries on contiguous structures of GU tract
  - Anticipated prolonged duration of surgery
  - Operative patients with urinary incontinence
  - Need for intraoperative hemodynamic monitoring



- ❑ Catheterization is not a hazard free intervention; it can lead to several complications, including inadvertent catheter removal with urethral trauma
- ❑ Accidental removal of indwelling urinary catheter is 0.34 per 100 catheter days
- ❑ Inadvertent catheter removal associated urethral trauma imposes
  - undue morbidity
  - prolonged hospital stay
  - increased healthcare related costs



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Lorente L, Huidobro MS, Martín MM, Jiménez A, Mora ML. Accidental catheter removal in critically ill patients: a prospective and observational study. *Critical Care* 2004;8:R229-R33.



## Usual practice of fixation

- ❑ It is not a dependable means of catheter securement
- ❑ It is vulnerable to minor traction; accidental pulling can dislodge the catheter causing urethral trauma
- ❑ Adhesive tape loosens quickly and frequently, even in many times failing to adhere to external catheter surface



Hanchett M. Techniques for stabilizing urinary catheters. Tape may be the oldest method, but it's not the only one. *The American journal of nursing* 2002;102:44-8.



- ❑ The repeated use of adhesive tape causing the sticky coating over the catheter wall is a potential source of infection
- ❑ Nowadays direct adhesive tape fixation is not anymore advocated, more reliable fixation methods should be used instead

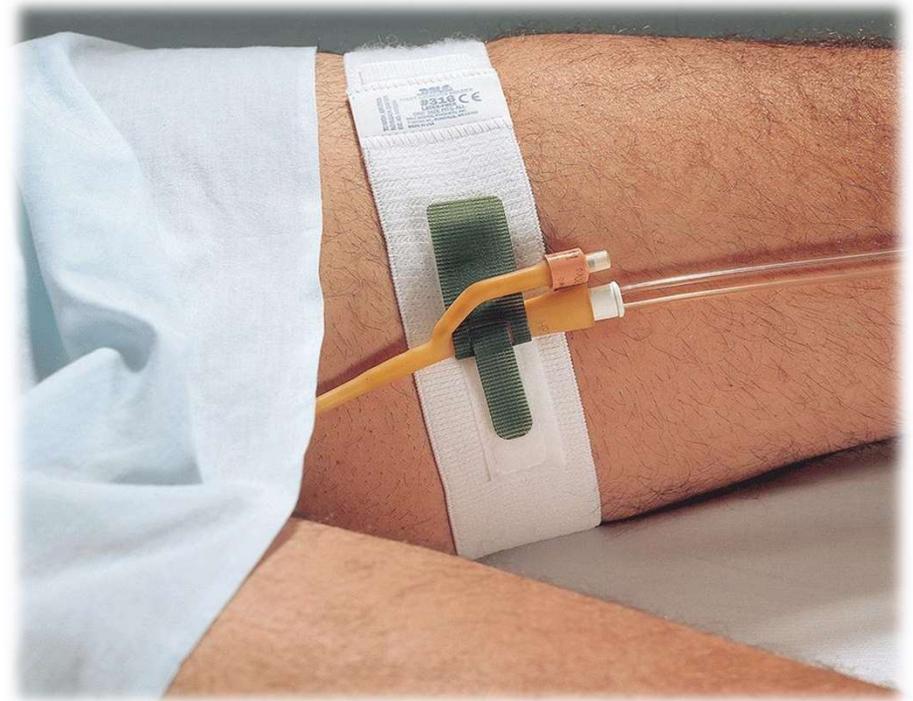


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Hanchett M. Techniques for stabilizing urinary catheters. Tape may be the oldest method, but it's not the only one. *The American journal of nursing* 2002;102:44-8.



- ❑ One of the most important but often neglected aspects of catheter care management is securing and fixing devices
- ❑ Most of the concerned authorities advocate the use of securing device to minimize the catheter related trauma and infections



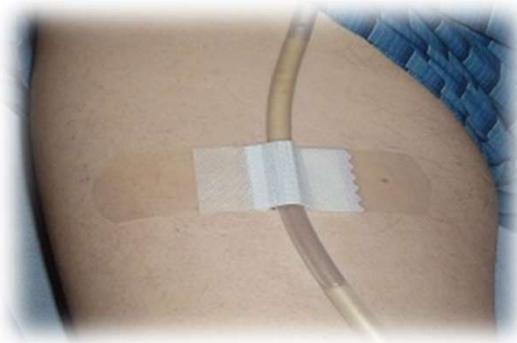
- 
- Care of the patient with an indwelling catheter. *Urologic nursing* 2006;26:80-1.
  - Gray ML. Securing the Indwelling Catheter. *AJN The American Journal of Nursing* 2008;108:44-50.



## Available fixing devices

Hanchett, (2002) classifies them in 3 main categories

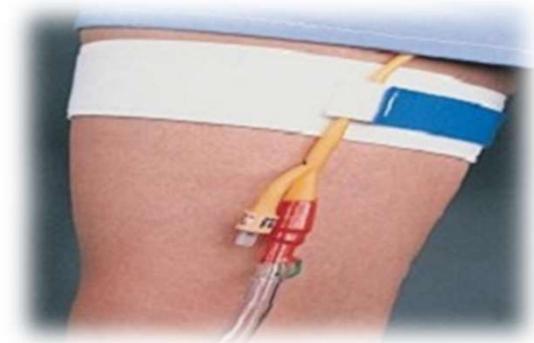
- a) modified tapes (CliniFix)
- b) adhesive anchors (StatLock)
- c) straps and holders (CATH- MATE II )



a. CliniFix



b. StatLock



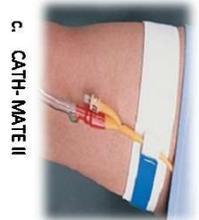
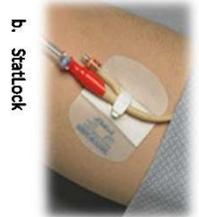
c. CATH- MATE II

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Hanchett M. Techniques for stabilizing urinary catheters. Tape may be the oldest method, but it's not the only one. *The American journal of nursing* 2002;102:44-8.



- ❑ Adhesive devices are associated with skin irritation and contamination, thus cannot keep in place for more than 7 days
- ❑ Strap-type devices can cause venous insufficiency, thrombophlebitis, even may lead to deep venous thrombosis
- ❑ Moreover, these devices are not available in our market

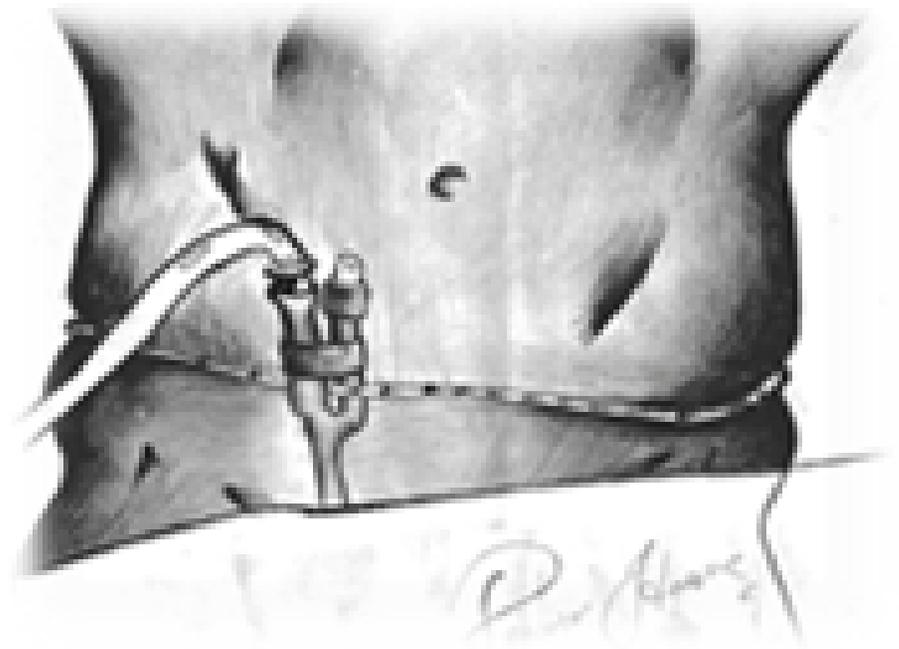


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Wilson M. Catheter lubrication and fixation: interventions. Br J Nurs 2013;22:566, 8-9.



- ❑ To secure the catheter in our practice, we use a simple personalized technique using the gauze roll and Micropore tape
- ❑ Here catheter is fixed over abdomen by encircling loop of gauze roll



1. First a gauze roll is placed around waist to create a loop
2. Then balloon inflation port placed beneath the loop
3. Finally two external ports are fixed with Micropore tape



- ❑ Optimal management of an indwelling catheter includes securing the catheter to the thigh or abdomen in a way that prevents the catheter or its retention balloon from exerting excessive force on the bladder neck or urethra, our procedure is mechanically very much effective in doing this job
  
- ❑ In this method, accidental pulling of the catheter is resisted by encircling loop
  
- ❑ Abdominal fixation is also associated with less meatal trauma and is advised, particularly for male patients needing long term catheterization

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- Care of the patient with an indwelling catheter. *Urologic nursing* 2006;26:80-1.
  - Emr K, Ryan R. Best practice for indwelling catheter in the home setting. *Home healthcare nurse* 2004;22:820-8; quiz 9-30.

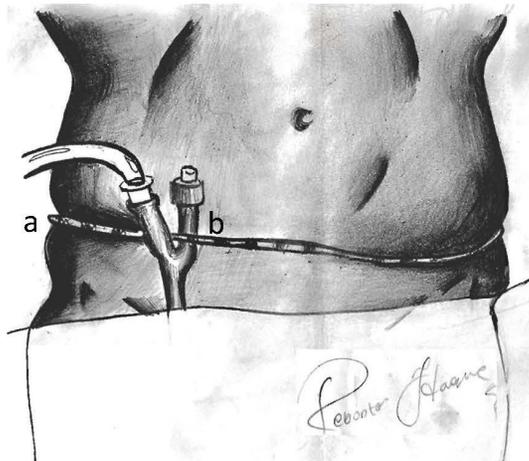


- ❑ We are practicing this technique of catheter securement over more than two years in **BIRDEM** General Hospital without any complications
- ❑ However to establish its utility over other methods, structured study is needed

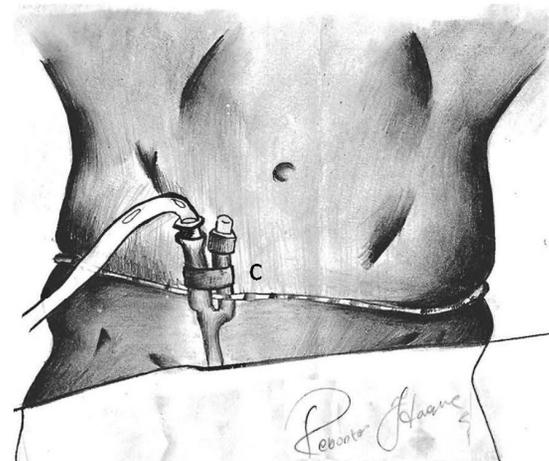


To secure indwelling Foley catheter please follow the instructions

- a. loop around abdomen with gauze roll
- b. place balloon inflation port beneath the loop
- c. fix two external ports (balloon port and urine drainage port ) with micropore tape



(1)



(2)

Sketched by Rebonto Haque

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Thank You