The importance of fixation and securing devices in supporting indwelling catheters

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ABSTRACT

Health-care professionals follow recognised national guidelines to assess clinical reasons for the insertion of urinary catheters. However, the use of fixation and securing devices is an area that is often neglected. Health-care professionals sometimes employ a 'do-it-yourself' approach, using adhesive tape or Velcro strapping devices, neither of which are appropriate. If urinary catheters are not secured appropriately, they can lead to severe trauma of a patient's urethra, potential damage to bladder neck, infection and inflammation, pain and irritation, possible bypassing, accidental dislodging of a catheter and a cleaving (condition whereby the catheter splits the penile or labial tissues). This article identifies reasons for using securing/fixation devices and explains the advantages and disadvantages of the different types of device in relation to individual patients.

KEY WORDS

◆ Urinary catheters ◆ Fixation/securing devices ◆ Catheter stabilization

Urinary catheterisation is used for patients within many health specialities, including acute settings, community and residential/nursing homes. However, while health-care professionals follow national guidance on catheter insertion and management (Pratt et al, 2007; National Institute of Health and Care Excellence (NICE), 2012; Royal College of Nursing (RCN), 2012), they seem to place little emphasis on securing catheters. NHS Quality Improvement Scotland (2004) state that

> ***'the catheter and attached drainage systems should be well supported in a comfortable position for the individual at catheter insertion to prevent complications'.***

This is supported by the National Occupational Standards 'Skills for Health' in continence care (UK Commission for Employment and Skills, 2008). The use of these devices needs to be identified and incorporated into national and local policies to prevent complications.

Complications

Possible complications when not using adequate securing devices include the following scenarios:

- If the catheter migrates or is removed accidentally, it can lead to urethral trauma, infection, patient discomfort and/or urinary retention (Bierman and Carignan, 2003)
- If the catheter drainage bag becomes too heavy with urine and not adequately supported, then potential damage to the bladder neck can occur
- If the catheter moves too much at insertion site, this can lead to cleaving, causing discomfort and irritation
- Higher potential risk for urinary tract infections (Pratt et al, 2007)
- Inflammation can lead to infection, tissue necrosis, blockage of urethra, bladder irritability, spasms and bypassing (Hanchett, 2002)
- High incidence of unplanned catheter changes (Hanchett, 2002).

Securing urinary devices

Health-care professionals have been ingenious in developing tools that assist in securing indwelling catheters; however, not all are adequate for the purpose. The use of adhesive tape is ineffective, inadequate and has not been validated by research. Complications that can arise from using tape are identified by Hanchett (2002) as follows:

- Failure to adhere to the external surface of the catheter
- Loosens quickly and frequently
- Can be unsightly and cumbersome for patients to use
- Skin integrity can be damaged when tape is removed
- Build-up of adhesive on external lumen of catheter can occur, making it a potential site for bacterial colonisation
- This contamination could predispose patients to urinary tract infections.

There are a range of other devices available instead of adhesive tape that are supplied by manufacturers and that help to support the catheter and drainage system, preventing unnecessary traction on the catheter and balloon. The RCN (2012) state that professionals should be aware that all catheter equipment should be used according to manufacturer guidelines and only used for the purpose it was designed for.

Latex-free securing devices

Velcro leg straps

The majority of leg drainage bags are supplied with a pair of latex-free leg straps (one for the top of the bag and another

for the bottom). However, there is little clinical evidence to support their use. It is important that both straps are used to support the leg bag to evenly distribute the weight of urine and provide adequate support (Yates, 2008). Unfortunately, these Velcro straps have the potential to act as a tourniquet since there is no guidance on the tension needed to secure them and they can restrict venous and lymphatic flow, increasing the risk of deep vein thrombosis in individuals with impaired circulation (Freeman, 2009). Straps are contraindicated in some catheterised patients, namely, those with poor circulation, phlebitis and advanced diabetes (Carignan, 2004). Additional problems include:

- A tendency to work themselves loose and to slide down the individual's leg, thereby failing to give full support
- Difficulties maintaining hygiene of straps
- Lack of guidance with regard to tension
- Can irritate the skin.

Sleeve device

An alternative to this method is a sleeve, which encompasses the leg bag. This comes in a variety of sizes and has a small opening for the tap to go through for easy access to empty. Weight is distributed more evenly. The sleeve may be a better option for individuals with frail skin as it distributes the weight of the bag more evenly and places less tension on the leg if the right size has been provided. However, these devices still provide a hygienic problem and need regular washing.

Fixation devices

Strap fixation devices

As well as leg bag support, there are devices to assist in fixation and stabilisation of the catheter, preventing tension or pulling on the catheter when movement occurs, and acting as a shock absorber. One such device comes in the form of a non-latex strap that wraps around, with another smaller strap wrapping around the catheter and securing it with Velcro. These come in a range of different sizes (e.g. thighs, abdominals etc) and can be used to support suprapubic catheters.

Adhesive fixation devices

An alternative is an adhesive catheter/tube holder with a hook and loop that allows the catheter to be secured into the device. It can be placed on the thigh or abdomen according to the site of the catheter. This device can remain in place for up to 7 days and can be removed using alcohol wipes or an adhesive remover. Skin integrity should be assessed prior to and during use of these devices. All of these devices are available via prescription. Professionals should consider the following points when selecting fixation devices:

- They should be designed for the purpose of securing a urinary catheter (RCN, 2012)
- They should be secure but place no tension on the urethral/abdominal tissues
- Individuals should be assessed for the most appropriate product to suit them
- They should be easy to apply/maintain.

Those with the potential to benefit from using these types of devices can be summarised into three categories: namely, patients, health-care professionals and health trusts and boards.

Patients

Patients using adhesive fixation devices can enjoy security, peace of mind, reduced anxiety, and prevention of trauma and complications, resulting in improved quality of life.

Health-care professionals

Health-care professionals using adhesive fixation devices can get better fixation for patients and this can decrease the need for catheter replacement. It can also reduce infection risk, catheter erosion and cleaving and can reduce the clinical time being spent.

Health trusts and boards

These devices have the potential to reduce hospital admissions and attendances at accident and emergency departments and may reduce rates of infection.

LEARNING POINTS

- Indwelling urinary catheters need to be adequately secured to prevent complications due to traction and movement
- The use of ineffective fixation devices is bad clinical practice
- Complications can arise due to inadequate securing of catheters
- National guidance should be followed with regard to urinary catheter fixation and securing

Conclusion

Catheter securing devices are a vital part of catheter management, but an area that is often neglected in clinical practice. There are new products becoming available and professionals need to be aware of these in order to offer the best possible management for individuals with urinary catheters. If urinary catheters are effectively secured, it will not only improve the quality of life for patients with indwelling catheters, but will also have a significant impact on health-care professionals' time and will result in savings for health trusts and boards. **BJCN**

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