

## Promoting Evidence-Based Nursing Practice in CONTINENCE MANAGEMENT

### CHOICE AND SELECTION OF EQUIPMENT FOR PEOPLE WHO REQUIRE A LONG-TERM INDWELLING CATHETER

#### **Introduction**

A review of the literature was carried out to identify evidence for practice in the use of long-term indwelling catheters. Whilst it is recognized that there are many gaps in knowledge about the management of catheters, in the effort to support best practice in catheter care, some information has been gleaned from the literature. Approximately 4% of community nursing clients will have an indwelling catheter and of these, 2% will have catheter-related problems (Laurent 1998). The person with an indwelling catheter is dependent on the catheter functioning correctly. Choosing the correct catheter is a good starting point for long-term management. Proper catheter selection can prevent the impact of complications such as leakage around the catheter, encrustation, irritation, infection and obstruction (Fiers 1995). The choice of equipment and methods should be tailored to the needs of the individual client to promote their self-care and sense of independence (Getliffe 1993).

#### **Reasons for catheterisation**

The use of indwelling catheters is considered after all other possible approaches to care have been reviewed (Getliffe 1995; Stewart 1998). Catheterisation is considered for clients who have difficulty in complete emptying of the bladder as a result of neurological disease or injury, those with bladder outlet obstruction and some with chronic urinary incontinence, for whom alternative methods are inappropriate or unsuccessful. Users of permanent indwelling urethral catheters are often seriously ill, frail, or disabled (Ostaszkiwicz 1997).

A long-term catheter can be acceptable to clients as a useful method of management, particularly when their lives are restricted by incontinence (Getliffe 1995). In collaboration with the client, the health care professional makes a decision based on a nursing assessment that includes personal preference and sexual activity (Milligan 1999).

#### **Sites**

An indwelling urinary catheter is inserted in the urethra or supra pubic area. Supra pubic involves inserting the catheter into the bladder through a surgical incision in the abdominal wall. Supra pubic catheters are often chosen by those who are sexually active (McMahon-Parkes 1998).

#### **Choosing the catheter**

All catheters must conform to strict standards *Australian Standard 2696* to minimize toxicity (Ostaszkiwicz 1997).

#### Length

There are two lengths:

- A short female length (25cms)
- A longer standard or male length (45cms). *With a supra pubic catheter you need to have a standard length catheter.*

The short length catheter is most suitable for people who are ambulatory however it is not suitable for wheelchair bound clients. If the client is overweight (particularly if he/she has large thighs), a longer catheter is a better choice.

#### Size

In choosing a catheter, always select the smallest; that is small in size and small balloon (Ostaszkiwicz 1997; Wilde 1997). Choosing the smallest size will prevent distension of the urethra from its flattened "noodle like" shape. Distension results in friction points especially in men at the urethral curves, which can lead to erosion and stricture formation (Fiers 1995). The catheter size is measured in Charriere or French gauge units, which are equivalent to 1/3mm. Select a 12Fg or 14Fg for a woman, and 14Fg - 18Fg for a man.

#### Materials

Many claims are made about the efficacy of one kind of catheter over another (Getliffe 1995; Ostaszkiwicz 1997). Evidence is lacking. However Laurent (1998) has summarized types of catheters and this list has been adapted for Australian products:

- Silicone catheters (100%) are thin walled and provide a wider lumen than coated catheters. They lack flexibility and they may be uncomfortable for some clients. It can be used for clients with latex sensitivity.
- Silicone clear. The advantage of this type is that you can see the debris, such as blood clots, mucous plugs or increasing amount of sediment. Bacteria do adhere to silicone catheters (Roberts et al 1993).
- Hydrogel coated latex catheter – a softer more pliable catheter.
- Silver impregnated hydrogel coated catheter. Advantages of this catheter are short term in that colonization by bacteria of this catheter is delayed for four days, whereas in most other catheters colonization takes place within forty-eight hours.

#### Balloon size

Catheter balloons come in two sizes: 10mls and 30mls. The balloons should be filled with sterile water and only expanded to the size recommended by the manufacturer. More water will cause trauma to the bladder entrance and less water may mean the catheter will fail to stay in place (Laurent 1998). A 30ml balloon is only used post-prostate surgery to prevent bleeding.

### **The Procedure**

Catheterisation is a sterile procedure using an aseptic technique. Hand washing is essential to prevent cross infection. Adhering to Universal Precautions instructions, wear gloves before and after touching any part of the catheter and drainage system. Check the balloon by inflating and then deflating before insertion.

### **Drainage systems**

There are a number of different brands of bags and bags with capacities of 350, 500 and 750 mls. A closed system of drainage is advocated (Wilde 1997; Lowthian 1998). However many home care clients need to open the system when switching to an overnight bag. For these clients, the preferred drainage system is the link-on system where a sterile leg bag is connected to the catheter and a 2L overnight bag can then be attached to the end of the leg bag. Close observation of the drainage system will dictate whether the bag is changed twice a week or even every two weeks. The tap is opened and urine can flow through the leg bag into the overnight bag. Results are mixed on the procedures for decontamination of drainage bags (Wilde 1997). At home, where the risk of cross-infection is assumed to be low, the overnight bag can be washed and dried and re-used (Getliffe 1995). If the person is confined to bed, the catheter is directly connected to a night bag. The drainage bag can be changed when the catheter is changed.

### **Catheter changes**

There is no research to support how frequently a catheter should be changed (Ostaszkievicz 1997). However, changes can be based on the degree of encrustation, frequency of blockage and most importantly on client comfort (Ostaszkievicz 1997). With a supra pubic catheter, the first change is performed by the client's urologist. The nurse in the client's home can perform subsequent changes. Based on practical experience, skill and speed is required for removing the old catheter and inserting the new.

### **Comfort and independence**

It is important that the person with a catheter has an opportunity to trial the different drainage systems and choose the one most suitable. Some clients use drainage bags that are anchored from a belt around the waist, others prefer leg bags. Bags that clients can empty independently are preferred. The outlet tap needs to be easy to manipulate. In hot weather, skin irritation may occur if the bag rubs against the skin. If a body worn bag is selected, the inlet tube length and preferred position of the bag at thigh or calf will be determined by the client. Trauma can be prevented

when the catheter is well anchored (Burkitt and Randall (1987). Price is often a factor in choice of a drainage system. Client education and ongoing support are valuable (Roe and Brocklehurst 1987).

### **Conclusion**

Most research in the last ten years has focused on catheter encrustation (Wilde 1997). Environmental factors such as the decontamination of drainage bags, frequency of drainage bag changes, frequency of emptying drainage bags, care of the urinary meatus, irrigation and wash-outs have been researched but most research is inconclusive. The client's perspective in living with a catheter is one area not researched at all.

The focus of this newsletter is on choice and selection of equipment for people who require a long-term indwelling catheter. Again there are few high quality research studies to support best practice policies particularly to guide practice in the home setting (Ostaszkievicz 1997). The information provided above is based on the best available literature sources. Research is urgently required to validate some of these practices. Consistent research based practices will emerge once evidence is accrued.

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