Importance of Ultrasound Determination of the Urinary Bladder Volume for Care in Patients with Spinal Cord Injury (SCI) who Practice Catheterization.

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INTRODUCTION & OBJECTIVES

Patients with SCI usually have no sensitivity in the bladder. They cannot assess when the bladder has to be emptied. Therefore the knowledge about the filling volume of the urinary bladder is important to avoid any complications (NHS Guidelines C040, 2011). For nurses it is a great problem to determine the time necessary for emptying the bladder by catheterization.

The objective of the study was to determine:
1. How accurate is the examination of the urinary bladder volume using ultrasound device.
2. How reliable is the determination of the residual urine volume using ultrasound.
3. Is the residual urine volume a problem in patients with recurrent urinary tract infections.
4. Is there any difference in completeness of bladder emptying depending on the position of patient use.

MATERIALS & METHODS (I)

We measured the urinary bladder volume three times using the ultrasound device, calculate the mean volume and compared with the volume after catheterization. We founded an excellent agreement between the two kinds of volume with a regression coefficient of 1.01.

The residual urine after catheterization was in the mean - 2.2 mL with a standard deviation of ± 5.0 mL. It was no difference in the urine volume measurement between different positions of the patient.

MATERIALS & METHODS (II)

Ultrasound Device

Bladder Scan BVI 9400 (Fa Verathon Medica)

Catheter Materials

- B.Braun Nelaton
- Sauer IQ Cath
- Coloplast Speddy Cath
- Hollister Vapro
- Astra Tech Lofric

CONCLUSIONS

The ultrasound system is an important and accurate device for determination of urine bladder volume.

To prevent any error in the measurement of urine bladder volume it is necessary to examine the bladder volume three times.

The position of SCI patients during catheterization has no influence on the residual volumes.