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**Urethral pressure profilometry in artificial urinary sphincter implantation: a case report**

The authors presented an interesting case report on the measurement of MUP and MUCP pre-, during and post- artificial sphincter insertion.

**There are some points that require correction or modification as follows:**

**Abstract:**

- The authors should write in the manuscript what was mentioned in the abstract: [One month after device activation, telephonic follow-up revealed ...]
  - It has been modified according to your suggestion. Please review it.

**CASE PRESENTATION**

- The authors should give explanation why the values for MUP and MUCP differed intraoperatively vs postoperatively:
  - The MUP increased from 53 cmH<sub>2</sub>O to 89 cmH<sub>2</sub>O in the inactivated state, and increased from 112 cmH<sub>2</sub>O to 120 cmH<sub>2</sub>O in the activated state
  - The MUCP decreased from 109 cmH<sub>2</sub>O to 92 cmH<sub>2</sub>O in the activated state
    - Dear Reviewer, as mentioned in the article, during the operation, the patient's urethra circumference was measured to be 6.0CM, but combined with the patient's situation (height 165cm, weight 50kg, BMI only 18.4kg / m<sup>2</sup>), and the situation seen during the operation (abnormal erection), finally, the 4.5cm cuff was installed under the guidance of the engineer.
    - It can be imagined that the operation will cause edema around the urethra to a certain extent, so the 4.5cm cuff is obviously tight compared with the urethra with a circumference of 6.0CM, so it is foreseeable that the intraoperative MUCP is higher than that after the operation. Because the urethra condition is more close to the normal

physiological state when the pump is activated after the operation, the relatively tight cuff in the operation becomes more appropriate at this time.

- MUP is affected by many factors. It is reported that the change of body position will affect the MUP, which can be used to test the normality of urethral function. The average increase of MUP was 23% when changing from lying position to upright position<sup>[1]</sup>. During the operation, the patient was in supine position, but in standing position after the operation, so the value fluctuated. We speculate that the reason for this phenomenon is the random contraction of the muscles around the urethra or urethra.
- <sup>[1]</sup>Liao Limin. Urodynamics [M]. Beijing: PEOPLE'S MILITARY MEDICAL PRESS, 2012: 245-246.
- During the postoperative 6 weeks before activation of the sphincter, what was the condition of incontinence? Was this included in the following: [After 1 month, the number of pads used by the patient decreased from the previous 5 pads/day to 1 pad/day to maintain local dryness, reaching the standard social urinary continence (0-1 pad per day)]. If it is, this means that the symptoms improved even before activation of sphincter?
  - Sorry, the description here is wrong. This is the urine control condition after activating the control pump. After the operation and before the activation of the pump, the patient was in the state of continuous urinary incontinence, and the leakage of urine was the same as that before the operation. After returning to the hospital 6 weeks after operation and activating the pump, the number of pads used decreased from the previous 5 pads/day to 1 pad/day to maintain local dryness.
- The authors should describe in details this: [In addition, Lowe et al. <sup>[8]</sup> believe that the cuff may only be slightly attached to the urethra; it provides a higher urethral closure pressure only when the urethral pressure exceeds 100 cmH<sub>2</sub>O.]
  - Dear Reviewer, it has been modified according to your suggestion.

Please review it.

- The authors should report the urodynamic evaluation (ALPP) of incontinence after insertion of artificial sphincter.
  - After the device was activated, the patient coughed and no urine leakage was found (with the video at that time, in 1'13"), please review.
- The authors should put citations for:
  - [The definitions used in this article are in line with the recommendations of the ICS.].
  - [The traditional water-perfused catheter for measuring urethral pressure had strict requirements regarding patient position; it could only measure pressure in one direction, and the accuracy and repeatability were not high.].
  - [Although the methodology of urethral pressure measurement is standardized, to our knowledge, there are no generally accepted normal or reference values. Chinese experts introduced that the average MUP of a normal elderly man in China is 77 (55-105) cmH<sub>2</sub>O, and the reference range of MUCP is 60-80 cmH<sub>2</sub>O.].
    - It has been modified according to your suggestion. Please review it.
- The authors should re-write this sentence in a clear form: [In this study, during activated and inactivated states, the preoperative, intraoperative, and postoperative MUP were 52, 112, 53, 120, and 89 cmH<sub>2</sub>O, respectively; during activated and inactivated states, the preoperative, intraoperative, and postoperative MUCP were 17, 109, 50, 92, and 51 cmH<sub>2</sub>O, respectively.].
  - It has been modified according to your suggestion. Please review it.
- The authors mentioned that the main advantage of the current study was: [the intraoperative urethral pressure measurement can obtain the specific values of intraoperative MUP and MUCP, and make a comparison with the postoperative continence of patients to analyze the clinical effects of different urethral pressure to guide the clinical diagnosis and treatment and standardize AUS implantation.]. However, the authors should give more details on how will this guide clinical diagnosis and treatment:

- What should be done if the measured intraoperative MUCP after insertion of the sphincter was found to be lower (or higher) than the target pressure?
  - It has been added to the manuscript, please review.
- What is important, the pressure in active or inactive state?
  - The principle of AUS device for urinary control is to provide sufficient resistance to the urethra during activation. If the pressure is too high, it will affect the blood circulation of the urethra, and then a series of complications will occur. If the pressure is too small, it can not achieve a good effect of urine control. Therefore, the author believes that the activation state is undoubtedly more clinically meaningful than the inactivation state (the urethral resistance decreases when inactivation, the urine flows out, which is manifested as urination).