**824**

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# ASSESSMENT OF FEMALE STRESS URINARY INCONTINENCE BY USING FLUID BRIDGE TEST

Hypothesis / aims of study

The fluid bridge test refers to the simultaneous measurement of bladder and urethral pressure during urodynamic examination. It can check the synergy of the bladder and urethra, to provide a reference for the correct clinical diagnosis of sphincter function. Although there are many methods of diagnosis of stress urinary incontinence (SUI), such as clinical manifestations and physical examination, to diagnose the SUI by using the fluid bridge test in chinese female objects has not been reported in the literature. Therefore, the aim of this study is to explore the diagnose value of the fluid bridge test in the assessment of female SUI.

Study design, materials and methods

1. SUI group (age=52±9.4y; n=20), diagnosed as SUI clinically were included in this study;
2. Control group (age = 50.0±18.9y; n=15), volunteer with no abnormal voiding.
3. Procedures: the fluid bridge test were carried out in all women conform to the standards proposed by the International Continence Society(ICS). The details are as follows: patients were semi-sitting position, and placed in the urethra three-chamber piezometer tubes and rectum tube, then the static urethral pressure were recorded to determine the maximum urethral pressure position and fixed the piezometric tube. With the filling speed of 50ml/min to the bladder and 2ml/min to the urethra, the bladder pressure and filling urethral closure pressure ($UCP_{fill}$) were measured respectively at beginning and at end filling phase. After filling 200ml, the patients do Valsalva maneuver to increase abdominal pressure and record urethral closure pressure (then calculate the average UCP depending the three times recordings). At the same time calculate the average pressure to transmission ratio(PRT). When having normal urination feel, the patients allow voiding and record the voiding urethral closure pressure ($UCP_{void}$).

Results

| | $UCP_{fill}$ at beginning | $UCP_{fill}$ at last | UCP | PTR | $UCP_{void}$ |
|---|---|---|---|---|---|
| SIU group | 65.3±20.8 | 59.3±20.7 | -2.8±3.8 | 48.1±13.0 | -1.4±2.4 |
| Control group | 82.8±23.8 | 80.0±22.2 | 31.4±16.1 | 77.3±18.1 | -3.9±3.5 |
| t | 2.32 | 2.83 | 9.21 | 5.56 | 1.62 |
| p | < 0.05 | < 0.01 | < 0.0001 | < 0.0001 | 0.11 |

Interpretation of results

The fluid bridge test show that during filling phase the static urethral pressure in SIU and control group is higher than bladder pressure without abdominal pressure increase, so there are no leakage occurred. However when the patients do Valsalva maneuver, the UCP of SIU group is negative and the PTR is lower than control group, so the leakage of urine appears.

Concluding message

It is an useful tool to use the fluid bridge test to diagnose the female SIU. The fluid bridge test can provide the detail information on bladder-sphincter coordination simultaneously.

Disclosures

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