A COMPARISON BETWEEN AIR-CHARGED AND MICROTRANSUDCER CATHETERS IN THE URODYNAMIC EVALUATION OF URETHRAL FUNCTION

Aims of Study

To compare measurements of urethral pressure profile and Valsalva leak point pressure (LPP) obtained with air-charged versus microtransducer catheters.

Methods

Thirty-one women with urogynecologic dysfunction presented for multichannel urodynamic evaluation. Maximum urethral closure pressure (MUCP), functional urethral length (FUL), and LPP were measured in each patient with “air-charged” balloon circumferential pressure monitoring catheters as well as dual sensor, 8F microtransducer catheters. MUCP and FUL were obtained using a mechanical puller arm moving at 1 mm/s. The LPP was measured at maximum cystometric capacity with the abdominal sensor placed in the vagina. Statistical analyses included 2-tailed student t-tests and Pearson correlations of MUCP, LPP, and FUL values obtained with both catheter types.

Results

The MUCPs measured with the two catheters were moderately correlated (r = 0.442). Mean MUCPs obtained with the air-charged versus microtransducer catheters were statistically different (43.4 ± 16.2 cm water versus 54.5 ± 23.9 cm water, respectively; p = 0.009). However, 30/31 (96.8%) patients had MUCP measurements greater than 20cm water with both catheters. The LPP measurements obtained with the catheters correlated well (r = 0.655), and were not statistically different (49.9 ± 20.7 cm water with the air-charged versus 57.3 ± 27.5 cm water for the microtransducer; p = 0.23). The measurements of mean FUL were also not statistically different (2.54 ± 0.67 cm with the air-charged versus 2.32 ± 0.62 for the microtransducer; p = 0.17).

Conclusions

Overall, air-charged and microtransducer catheters yield similar information when evaluating urethral function. Regarding clinical decision-making, the difference in MUCP values obtained with the two catheters was relevant in only a small percentage (3.2%) of patients.