

## THE BEAKING SIGN ON CYSTOGRAM IS ASSOCIATED WITH URGENCY IN FEMALE PATIENTS WITH URINARY INCONTINENCE

### Hypothesis / aims of study

Beaking sign on cystogram is regarded as the sign of intrinsic sphincter deficiency (ISD) in female patients with stress urinary incontinence. However its clinical role in overactive bladder has not been clearly identified. Accordingly, this study was conducted to investigate the clinical role of beaking sign in patients who had undergone a midurethral sling operation due to stress urinary incontinence with or without urgency in female urinary incontinence patients.

### Study design, materials and methods

This study was retrospectively conducted on 105 female patients who checked cystography preoperatively and underwent midurethral sling operation due to female stress urinary incontinence from May 2009 to April 2012. Preoperatively participants underwent overactive bladder symptom score questionnaire (OABSSq), 1 hour pad test, urodynamics (UDS), and cystography. The beaking sign on cystogram at rest and during stress was checked, and the vertical diameter and anteroposterior diameter of beaking area were measured in all the patients. Clinical parameters were compared with the presence of the beaking sign, and vertical diameter and anteroposterior diameter of beaking area with A student-t test using SPSS v.18.0 program. A p-value of <0.05 was considered to be statistically significant.

### Results

A significant difference in the OABSSq was observed according to the presence/absence of beaking sign on cystography at rest ( $2.94 \pm 1.51$  vs  $1.86 \pm 1.55$ ,  $p=0.014$ ). The positivity of the beaking sign was significantly higher in the patients with intrinsic sphincter deficiency (47.1% vs 18.2%,  $p=0.023$ ). However no significant difference was found in the pad test, involuntary detrusor contraction (IDC) on UDS, valsalva leak point pressure (VLPP), or maximum urethral closure pressure (MUCP) ( $p=0.115$ ,  $p=0.613$ ,  $p=0.270$ ,  $p=0.803$ ). A total of 47.1% of patients positive to beaking sign were shown to have ISD, significantly higher than 18.2%, the rate of patients negative to beaking sign who has no ISD ( $p=0.023$ ). Postoperative medication due to urgency symptom was observed in 52.9% of the beaking sign positivity group and in 20.5% of the beaking sign negativity group, which showed a significance ( $p=0.012$ ). According to the presence/absence of beaking sign on cystography during stress, no significant difference in the urgency score, pad test, IDC on UDS, VLPP, MUCP, ISD, or postoperative medication due to urgency symptom was found ( $p=0.338$ ,  $p=0.100$ ,  $p=0.800$ ,  $p=0.147$ ,  $p=0.304$ ,  $p=0.060$ ,  $p=0.878$ ). No significant difference in the vertical opening of the bladder neck on cystography at rest was found according to ISD and postoperative medication ( $p=0.695$ ,  $p=0.867$ ), but a significant difference in the vertical opening of the bladder neck on cystography at rest was found according to IDC onset ( $p=0.003$ ). No significant difference in the horizontal opening of the bladder neck was found according to IDC onset, ISD, and postoperative medication ( $p=0.169$ ,  $p=0.683$ ,  $p=0.916$ ). No significant difference in the vertical opening of the bladder neck on cystography during stress was found according to ISD and postoperative medication ( $p=0.622$ ,  $p=0.364$ ), but a significant difference in the vertical opening of the bladder neck on cystography during stress was found according to IDC onset ( $p=0.002$ ). No significant difference in the horizontal opening of the bladder neck was found according to IDC onset, ISD, and postoperative medication ( $p=0.603$ ,  $p=0.824$ ,  $p=0.563$ ).

### Interpretation of results

Beaking sign on cystogram at rest is associated with OABSSq, postoperative medication for urgency symptom and intrinsic sphincter deficiency. Vertical diameter of beaking is associated with the onset of involuntary detrusor contraction on urodynamic study.

### Concluding message

Although cystography is not widely used for the evaluation in female patients with urinary incontinence, it is helpful to find overactive bladder in these patients.

### References

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### Disclosures

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