

## EFFECT OF MODE OF CHILDBIRTH ON THE PREVALENCE OF SYMPTOMATIC PELVIC FLOOR DISORDERS - LONGITUDINAL STUDY

### Hypothesis / aims of study

Childbirth is one of the main risk factors for developing pelvic floor disorders immediately postpartum or later in life. It still remains unclear which risk factors contribute to this process and whether delivery by Caesarean Section could have a protective effect. We present a longitudinal study focused on assessment of pelvic floor disorders before and after delivery

### Study design, materials and methods

This is a single center, prospective, observational study. All check-ups include clinical and ultrasound examination. Women are examined in supine position after voiding, POP-Q is noted and ultrasound volumes are taken at rest, upon maximal Valsalva and during the maximum pelvic floor contraction. Parameters of urogenital hiatus are assessed offline using 4DView© software and examiners are blinded to the results of clinical examination. Questionnaires (ICIQ-SF and PISQ 12) are gathered as a part of our protocol and these provide additional information on pelvic floor function. During the period of 05/2011 and 07/2013 we obtained complete datasets from 1926 women. In this study we include only primiparous women with singleton pregnancies. Obstetric data are collected postpartum such as duration of 1<sup>st</sup> and 2<sup>nd</sup> stages of labour, use of epidural analgesia, occiput posterior position, fetal birth weight and also maternal age and BMI.

### Results

Mean age was 30,55 (range 16-43), mean BMI 27,36 (range 15,8-42,6) and mean fetal birthweight was 3371,54 (range 1870-4870). Of the 1926 women 1477 (76,6%) delivered vaginally (VD) including 47 (2,4%) who had forceps delivery and 449 (23,3%) underwent CS, out of which 19,8% were acute and 3,5% elective surgeries. Questionnaire analysis showed that during pregnancy 27,3% of women reported SUI and 5,2% reported symptoms of OAB, prevalence of symptoms was the same in both VD and SC group, not dependent of later mode of delivery. 6 weeks after delivery symptoms of stress urinary incontinence (SUI) had 35,2% of women who had a VD and 14% of women after CS. 6 months after delivery it was 30,1% and 18,8% respectively and 1 year after delivery it was 34% and 18% respectively. Symptoms of OAB were present in 5,1% of women after VD and 1,3% after CS. Both six months and 1 year after delivery it was 5% and 3% respectively. According to the severity mild SUI (ICIQ score  $\leq 10$ ) was present in 24% of women after VD and 10,5% after CS, severe SUI (ICIQ score  $\geq 10$ ) in 10,7% of the VD group and 3,6% of the CS group. Clinical examination showed levator ani avulsion in 21% of patients (only in vaginally parous women) whereas ultrasound evaluation revealed avulsion in 26,4% of the cases. We found no avulsion in the CS group, both upon palpation and on ultrasound. Parameters of urogenital hiatus showed no difference whether CS was elective or acute. Women after VD also showed significantly worsened POP-Q scores, especially in points Ba and C. 6 weeks after delivery point Ba was -1 in 30% after VD and only in 4,6% after CS, in 7,9% women after VD point Ba was  $\geq 0$  which we didn't see in any of the women after CS.

### Interpretation of results

Vaginally parous women report higher prevalence of bothersome pelvic floor disorders than women who undergo Caesarean Section. They also show significantly worse values in the POP-Q scoring system.

### Concluding message

Vaginal delivery can have a detrimental effect on pelvic floor. Caesarean Section shows protective effect against levator ani muscle avulsion.

### Disclosures

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