

EFFECTS OF THE FIRST VAGINAL DELIVERY IN WOMEN EARLY POSTPARTUM VERSUS YEARS REMOTE FROM DELIVERY

Hypothesis / aims of study

The aim of the study is to examine the effects of the first vaginal delivery in women in the early postpartum period, compared to women years remote from delivery.

Study design, materials and methods

This was a cross-sectional study. Primiparus women who received a 3D endovaginal ultrasound (EVUS) 6-12 weeks postpartum as a part of an ongoing study, were matched by parity to women who had received EVUS of the pelvic floor for any indication, years after the first vaginal delivery. All the patients underwent a detailed history and physical, which included a POP-Q examination and EVUS.

The levator ani muscle deficiency (LAD) was evaluated in the 3D endovaginal ultrasound volumes and was categorized into three subgroups (minor, moderate and severe), based on prior published studies (1). The levator plate descent angle (LPDA) was measured to indicate descensus of the levator plate toward the perineum (2). The minimal levator hiatus (MLH) area was also measured.

Summary statistics were calculated for the patient population. Differences between means were compared using paired t-tests; McNemar chi square or Bowker's test of symmetry were used to compare categorical variables. A p-value of <0.05 was considered significant.

Results

A total of 93 women were included in this study. Forty-seven primiparus women who were recently postpartum (RPP) women, were matched by parity to 47 women 2-55 years remote from delivery. 82% of women were Caucasian and there were no differences in BMI between the 2 groups. The mean age in early postpartum group was 26.7 years (± 5.36) versus 52 years (± 14.62) in the remote from delivery group. The majority of the postpartum women had stage 0 or 1 prolapse on examination (98%) compared to stage 1 or 2 prolapse in those remote from delivery (73%). The remote from delivery had more women with stages 2 and 3 compared to the postpartum group ($p=0.0093$). Moderate to severe LAD was seen in 34% in the early postpartum group, compared to 83% in the remote from delivery group ($p<0.0001$). The remote from delivery group also had lesser levator plate descent angle, corresponding to greater levator plate descent (LPDA 5.4 vs 16.2, respectively, $p<0.0001$) and greater MLH (11.8cm vs 14.6cm, respectively, $p<0.0001$) when compared to the early postpartum group.

Interpretation of results

Moderate to severe LAD was seen in 34% in the early postpartum group, compared to 83% in the remote from delivery group.

Concluding message

Higher frequency of significant LAD in primiparus women years after the first vaginal delivery emphasizes the role of pathophysiologies that require time to manifest themselves. Pathologies such as neuropathy rather than overstretch trauma may behave in this fashion. Our study emphasized the change in pelvic floor shape which includes widening of MLH and descent of levator plate toward perineum as a result of worsening LAD.

References

1. Rostaminia G, White D, Hegde A, Quiroz LH, Davila GW, Shobeiri SA. Levator Ani Deficiency and Pelvic Organ Prolapse severity". *Obstet Gynecol* 2013;In publication.
2. Shobeiri SA, Rostaminia G, White DE, Quiroz LH. The determinants of minimal levator hiatus and their relationship to the puborectalis muscle and the levator plate". *Bjog* 2012;DOI: 10.1111/1471-0528.12055.

Disclosures

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