

EP18.14 - Sonographic evaluation of levator ani muscle coactivation and correlation with labor outcomes in nulliparous women at term.

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Objectives

To evaluate the correlation between levator ani muscle (LAM) coactivation and labor outcomes in a cohort of nulliparous women with singleton gestation at term.

Methods:

Single-centre prospective observational study including nulliparous women with low-risk term pregnancy with cephalic presenting fetus enrolled between 39 and 40 weeks. At routine obstetric assessment at term, trained midwives performed a transperineal ultrasound in the midsagittal plane to evaluate the antero-posterior diameter of the levator hiatus. The minimal distance between the postero-inferior border of the pubic symphysis and the anterior border of the puborectalis muscle was evaluated at rest and during pushing effort. LAM coactivation was defined as a reduction of the antero-posterior diameter of the levator hiatus during the voluntary pushing efforts (Figure 1). The primary outcome was a composite of adverse labor events as defined by either 1) active second stage duration > 120 mins, 2) vacuum delivery for second stage dystocia and 3) OASIs.

Results

201 women were included, of whom 42 (20.9%) had LAM coactivation. Women with LAM coactivation showed a higher rate of composite adverse outcomes [20/159, 12.5%, vs 13/42, 31%, $p < 0.01$] and longer active second stage duration when compared to the non-coactivation group (64 ± 45 vs 84 ± 50 minutes, $p = 0.02$). LAM coactivation was also associated with a higher rate of 3 grade perineal tears [0/159, 0% vs 2/42, 5.4%, p value 0.006]; no case of 4 degree tears was recorded during the study period.

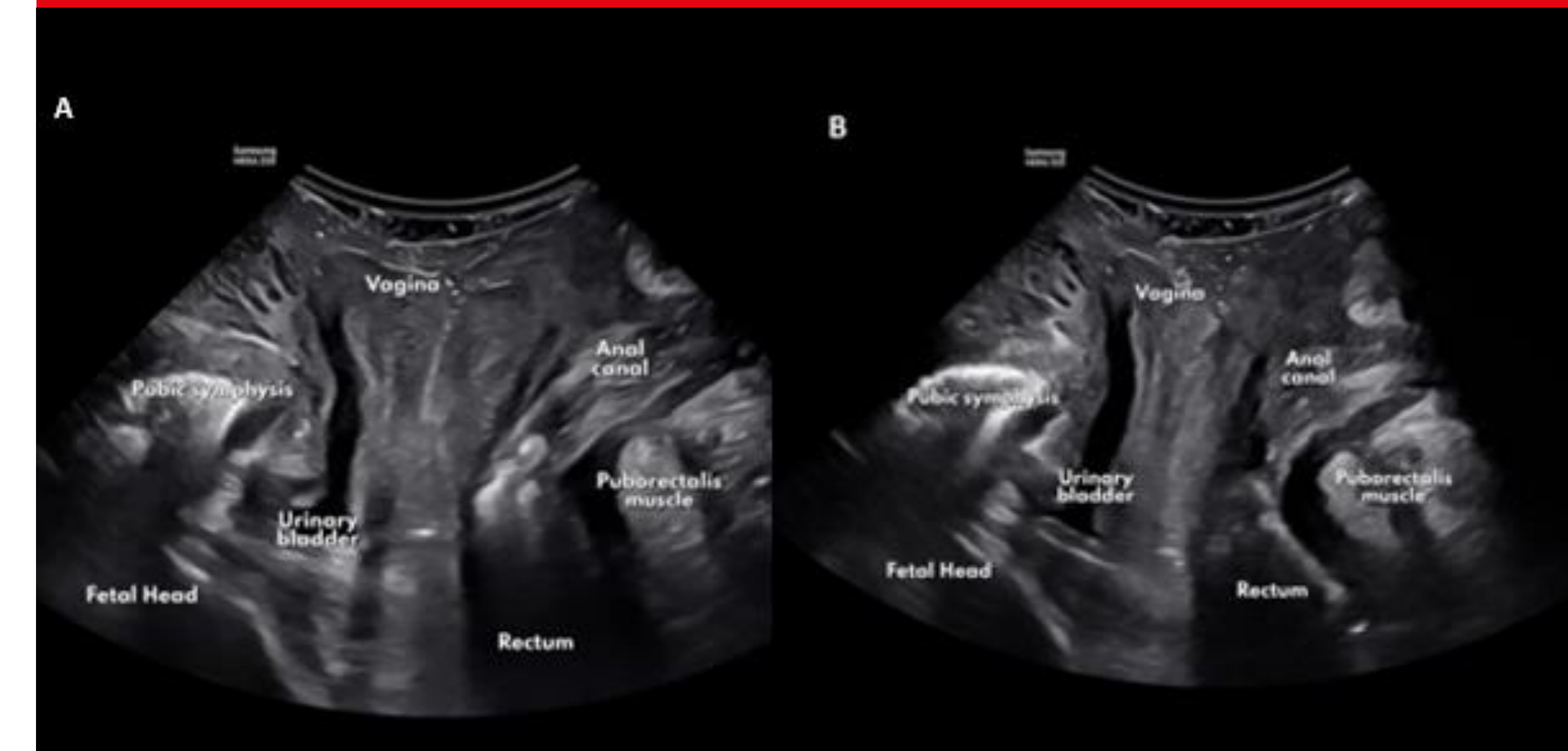


Figure 1 - A) Ultrasound scan of diameters of pelvic floor muscles at rest; B) Ultrasound scan of diameters of pelvic floor muscles during pushing effort in a patient with LAM coactivation

Conclusion

Within a population of singleton term pregnancies at low risk, LAM coactivation is associated with an increased occurrence of composite adverse labor outcome and 3 degree tears as well as with longer active second stage of labor.