Sonographic prediction of successful vaginal labor in pregnant women with occiput and spine posterior position in first stage of labor

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Objective
The aim of this study was to evaluate benefit of sonography in second stage of labor in pregnant women with occiput and spine posterior position by admission to delivery room.

Methods
Prospective cohort study. Thirty nine primiparas with signs of running labor with posterior spine and occiput position were enrolled. Occiput and spine position has been observed by ultrasound in all women in first and second stage of labor. Angle of rotation, angle of progression, direction of middle sagittal structures of fetal head were measured by ultrasound in second stage of labor. The way of birth, position of occiput by delivery were recorded.

Results
Twenty nine women delivered spontaneously, ten women had surgical delivery by Cesarean section or forceps. Initially all fetuses were in head and spine posterior position left or right. Till second stage of labor 24 fetuses rotated to anterior position. Two were born in persisting occiput posterior position. The majority of women with angle of rotation less than 45° delivered spontaneously or via forceps (23 spontaneously, 2 forceps). Twenty seven women with angle of progression over 120° delivered spontaneously but only two women with angle less than 120°. Same results have been seen by observing middle structures of fetal head direction during 2nd stage of labor. 28 women with middle structures direction up or horizontal delivered spontaneously, but only one with direction down.

Conclusion
The majority of fetuses with head and spine posterior position rotate to anterior position during first stage of labor. Angle of progression, angle of rotation and middle structures of fetal head direction are good predictive factors of successful completion of vaginal birth in pregnant women with fetuses initially in posterior position.