Maternal and neonatal complications in occiput posterior position with a large head circumference

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Objective
To investigate if large head circumference (HC) combined with persistent occiput posterior (OP) position is associated with higher rates of vacuum and unplanned cesarean delivery and obstetric and neonatal complications.

Methods
Term singleton deliveries, that delivered in vertex occiput anterior (n=41,038) or OP position (n=1740) in our center from January 2010 to December 2014, were included. We compared delivery modes and rates of maternal and neonatal complications in occiput anterior (OA) vs. OP deliveries when HC≥90th centile. Furthermore, we compared the outcomes for those who delivered in persistent OP position, having HC≥90th centile vs. HC<90th centile.

Results
Persistent OP position combined with HC≥90th centile was associated with higher rates of vacuum and unplanned CS, compared to those with HC<90th centile in OP position (20.1 vs. 17.2% [OR 1.53, 95% CI 0.99-2.36] and 23.4 vs. 9.2% [OR 3.326, 95% CI 2.17-5.11], respectively) or in OA position with HC≥90th (20.1% vs. 12.7% [OR 2.09, 95% CI 1.38-3.19] and 23.4% vs.12.5% [OR 2.48, 95% CI 1.66-3.7], respectively). Rates of prolonged second stage, failed vacuum extraction and NICU admission were also increased over and above those in either OA with HC≥90th centile, or OP position with HC<90th centile. Multinomial regression modeling of delivery mode (NVD as reference group) showed that OP increased the risk of interventional delivery three-fold and HC≥90th centile further doubled the risk of vacuum delivery in primiparae and tripled it in multiparae.

Conclusion
HC≥90th combined with OP position is associated with higher rates of interventional delivery and prolonged second stage of labor compared to those with OP position and HC<90th. HC may be included with other measurements to assess women in labor, as it is associated with fetal outcomes in OP deliveries.