The Chin-Chest Angle (CCA): a new objective method to assess the degree of fetal head deflexion in occiput-posterior (OP) fetuses

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Introduction
To test the Chin to Chest Angle (CCA) as a new ultrasound (US) quantitative marker of fetal head deflexion in persistent Occiput-Posterior (OP) presentation.

Methods
This was a multicenter prospective study conducted at two tertiary care centers (Parma and Bologna). A non-consecutive cohort of fetuses with persistent OP position during the second stage of labor was considered eligible for the study purpose. The OP position was confirmed at transabdominal US. In the study group the CCA angle was measured at suprapubic US on the sagittal plane drawing a line tangent to the fetal chin and another one tangent to the fetal chest (Figure 1). The outcome of labor was collected in all cases and the comparison of US findings between women undergoing spontaneous vaginal delivery (SVD) vs those submitted to operative delivery (OD), including Caesarean Section or vacuum extraction, was performed.

Results
Overall, 16 cases persistent OP fetuses were included. The mean CCA was non significantly smaller in the women who experienced SVD compared with those submitted to OD (13.5±14.9 vs 25.17±39.45 degrees; p=0.40). No significant correlation between CCA and the length of the second stage of labor or the fetal head station at the time of US was found.

Conclusion
Quantitative assessment of fetal head deflexion in OP fetuses is feasible by the ultrasound measurement of CCA. The width of the angle might be inversely correlated with the chance of SVD although our findings on a small study group are not statistically significant.