

Intrapartum ultrasound in the second stage of labor - choice of operative method

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Objective

According to recently published data, it was demonstrated that ultrasound assessment in addition to digital examination prior to instrumental vaginal delivery is significantly more accurate compared with digital examination alone in the diagnosis of fetal head position. Ultrasound in labor may also predict the outcome of instrumental vaginal delivery. It can be performed using a transabdominal and a transperineal approach.

Methods

Analysis of ultrasound markers in the second stage of labor in the prediction of the operative method used as part of a prospective pilot study of the use of ultrasound during labor in our clinic.

Results

Out of 110 patients, peripartum ultrasound was used in the second stage of labor in 42 cases in which operative intervention was indicated. In 35 cases, instrumental vaginal delivery (operative vaginal delivery - OVD - 29 x vacuum, 6 x forceps) was chosen, in 7 cases we performed cesarean section (CS). All instrumental delivery were completed successfully, there were no failed vacuum or forceps. The most common indication for both OVD and CS was fetal hypoxia, followed by the arrest of labor. The AoP value before OVD was 146.74° at rest compared to 130.14° in SC ($p = 0.007$), during contraction, it was 166.03° before OVD compared to 137.571° before SC ($p < 0.001$). An equally statistically significant difference was also noted for HPD values. At rest before OVD 29.74mm vs. 45.57mm before SC ($P < 0.001$). Delta HPD 8.54 before OVD vs. 4.43 before SC ($P = 0.027$). There was no significant severe hypoxia in the newborns, we recorded $pH < 7.1$ in only 4 cases, regardless of the method used.

Conclusion

Our results are in accordance with the published data and show more accuracy and improvement of the clinical findings before instrumental delivery. In case of unfavorable ultrasound parameters, the method of choice at our clinic is CS, which does not result in failure or complications during OVD. Due to the non-invasiveness, low time requirement, excellent tolerance by the mother, and quite an easy learning curve, the use of peripartum ultrasound has its place in modern obstetrics.