

Persistence of a second trimester low-positioned placenta

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Objective

A placenta located in the lower uterine segment (LUS), being either a placenta praevia or low-lying placenta, is associated with an increased risk of maternal complications due to excessive bleeding in the third trimester of pregnancy. However, the majority of low placentas in the second trimester will become high in the third trimester, making follow-up costly and unnecessary in most cases. We aimed to define the optimal cut-off value for the distance between the placenta and the internal os (internal os distance, IOD) in the second trimester that would identify all placenta praevia and low-lying placentas that persist into the third trimester, resulting in the fewest number of unnecessary follow-up ultrasounds. We determined this cut-off value for both anterior and posterior placentas.

Methods

During a prospective cohort study between January 2014 and January 2019, the IOD was measured transvaginally between 18 and 24 weeks' gestation. All women with an IOD of <20 mm were scheduled to return for a repeat ultrasound after 28 weeks. The rate of placenta praevia and low-lying placentas was calculated for both anterior and posterior positions. Optimal cut-off values for the IOD in the second trimester with sensitivity of 1 and corresponding false positive rate were determined.

Results

In the second trimester 1109 patients were eligible for inclusion. 167 (15%) women were excluded therefore data from 942 women was used for analysis. In second trimester, placenta location was more frequently posterior compared to anterior (583/942 (62%) vs 359/942 (38%) ; $p < 0.01$). In the third trimester 46/942 (5%) placentas remained in the LUS. Placenta praevia occurred more frequently than low-lying placentas (35/210 (17%) placenta praevia vs 11/732 (1.5%) low-lying placentas; RR 11.1 (95% CI 5.7-21.5) $p < 0.01$). Posteriorly located placentas persisted more frequently than those located anteriorly (36/583 (6.2%) posterior vs 10/359 (2.8%) anterior; RR 0.45 (95% CI 0.23-0.90) $p = 0.019$). Using cut-off values of 5 mm overlapping and 15 mm away from the internal os for placentas located anteriorly and posteriorly respectively, we were able to identify all low-lying placentas in the third trimester, with a false positive rates of 53 and 459, respectively.

Conclusion

Using our recommended IOD cut-off values of 5 mm overlapping the internal os for anteriorly located placentas and 15 mm away from the internal os for posteriorly located, will decrease the number of unnecessary follow-up ultrasound scans without missing any high-risk women.