

## Placenta praevia and low-lying placenta: is placental edge thickness a reliable predictor of perinatal outcomes?

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### Objective

Previous studies have suggested that placental edge thickness (ET) is a predictor of adverse outcomes for patients diagnosed with low-lying placenta (LLP) and placenta previa (PP). Thick placentas have significantly higher rates of Antepartum hemorrhage (APH) and emergency cesareans before 36 weeks gestational age (GA), as well as lower birth weight and NICU admissions. We aimed to validate this hypothesis and evaluate whether routine 3rd trimester assessment of ET would improve perinatal decision-making and delivery planning by predicting maternal and neonatal outcomes for patients with LLP or PP.

### Methods

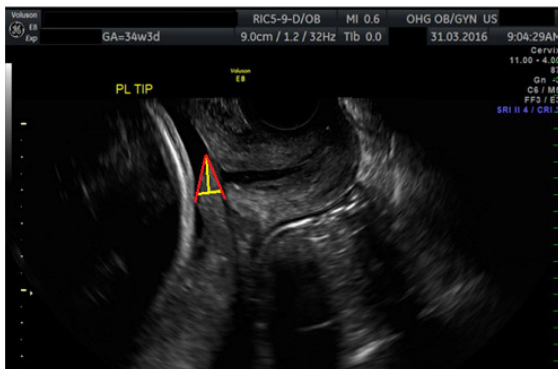
Retrospective observational study with 39 patients diagnosed with PP and LLP in 3rd trimester. Only 12 cases remained diagnosed as LLP or PP at delivery. Transvaginal scan images were assessed for ET and classified into thin (<1cm or 45°) or thick (>1cm or 45°) placentas according to the edge thickness or angle. APH and GA at delivery were the primary outcomes; birth weight, APGAR scores, arterial blood cord pH, NICU admission, need for emergency cesarean, estimated blood loss, need for transfusion, and need for hysterectomy were secondary outcomes evaluated for both groups.

### Results

Patients were classified as thin (N=17) or thick (N=22) placenta. Primary or secondary outcomes were not statistically different between groups. 29. 4% patients had APH on thin placenta group compared to 22. 7% of patients in thick placenta group ( $p=0.72$ ). The mean GA at delivery between thin and thick groups was 38. 1 $\pm$ 2. 2weeks and 38. 9 $\pm$ 2. 2 weeks respectively. The mean birth weight was 3087. 2  $\pm$  725. 5g for the thin and 3338. 4  $\pm$  692. 8g for the thick group. 40. 91% of babies delivered on the thick group were admitted to NICU while 23. 53% of babies delivered on the thin group were admitted. However, this difference did not reach statistical significance ( $p=0.31$ ). No patients in our sample had a blood transfusion or hysterectomy.

### Conclusion

LLP and PP outcomes were not predicted by ET in our small cohort. Prospective randomized studies in a larger population are needed to assess this correlation.



**Figure 1.** Measurement of placental edge thickness in placenta praevia is performed within 1cm from the placental tip (yellow lines); the angle (red lines) is measured between the basal and chorionic plate.

	Thin (n=17)	Thick (n=22)	p
Mean BW	3087.2 $\pm$ 725.5g	3338.4 $\pm$ 692.8g	n/a
NICU admission	23.53% (n=4)	40.91% (n=9)	0.31
Apgar 1'	7.97	7.5	n/a
Apgar 5'	8.8	8.6	n/a
Arterial cord blood pH	7.2	7.2	n/a

**Figure 3.** Neonatal outcomes per ET group.

	Thin (n=17)	Thick (n=22)	<i>p</i>
APH	29.4% (n=5)	22.7% (n=5)	0.72
GA at delivery (w)	38.1	38.9	n/a
EBL (< 800ml)	14 (82.4%)	16 (72.7%)	0.70
EBL (≥ 800ml)	3 (17.7%)	6 (27.3%)	n/a
Emergency c/s	3 (17.6%)	4 (18.2%)	0.90
Planned c/s	7 (41.2%)	7 (31.8%)	n/a

**Figure 2.** Maternal outcomes per ET group.