

## UTERINE DEHISCENCE PREDICTION THROUGH UTERINE SEGMENT THICKNESS MEASUREMENT WITH TRANSABDOMINAL ULTRASOUND BEFORE THE START OF LABOUR IN POST CAESAREAN PREGNANCY

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### Abstract

**Background:** The study was an effort to evaluate transabdominal sonography for the defects diagnosis and abnormal thinning of the lower uterine region with scars at term. **Materials and Methods:** This was a hospital based prospective clinical study. Study was done in antenatal women attending outpatient department 37-40 weeks in the Obstetrics and Gynecology department, Andhra Medical College, a tertiary care hospital and subsequently delivered in the hospital. Total number cases studied were 100. Duration of study period was from August 2022 to January 2023. Lower uterine region was measured with ultrasound equipped 3.5 mHz a transducer and steel scale was used to gauge the lower uterine section at surgery. **Result:** The average lower uterine region's thickness was 4.60 mm in 100 cases of post caesarean pregnancy. The values for the lower uterine region thickness cut off were arrived after deducing 1.5, 2.5 times of standard deviation from the mean of lower uterine region thickness of women with scarred uterine. Since they were no cases at 2.5 SD, So 3.5mm is taken as cutoff value. This value is a better predictor of sensitivity and specificity in the present research. At <3.5 mm they were 4 cases of dehiscence and 3 cases of very much thinned out lower uterine segment. At >3.5 mm they were one case of dehiscence. **Conclusion:** If the lower uterine region's thickness is >3.5mm the likelihood of dehiscence during the subsequent trials of labour is very small. Hence, transvaginal delivery can be undertaken with more confidence.

## INTRODUCTION

TOLAC-Trial of labour following a c-section is a process in which a woman who has previously delivered a baby via cesarean section attempts to give birth vaginally in a subsequent pregnancy, inspite of the outcome. This approach can offer women who seek a vaginal birth the opportunity to try to achieve this goal, instead of undergoing another cesarean section.<sup>[1-3]</sup>

Dramatic advances in perinatal care have led to a worldwide rise in frequency of caesarean birth in the past two decades.<sup>[4-6]</sup>

Approximately 54% of these are repeat caesarean deliveries. This is the indication most responsible for the recent increment in the caesarean births.<sup>[7,8]</sup>

The uterine rupture frequency during labor has been estimated at between 0.3 - 3.8% and that of uterine dehiscence in between 0.6%-4%.

Lower uterine region evaluation after caesarean delivery has been done by several methods earlier.<sup>[9]</sup> An attempt has been made during present study to evaluate transabdominal sonography for the diagnosis of defects and abnormal thinning of the lower uterine region with scars at term.<sup>[10]</sup>

## MATERIALS AND METHODS

This was a prospective study which was conducted from August 2022 to January 2023 at tertiary care center, Andhra Medical College, Visakhapatnam. 100 cases of post caesarean pregnancy were taken in order to study and the lower uterine thickness segment was measured and it was correlated with uterine dehiscence. 100 cases of unscarred pregnancy were studied for comparison of lower uterine region thickness with post caesarean pregnancy.



**Table 6: Evaluation of the lower uterine region thickness by ultrasonography in dehiscence and non-dehiscence.**

GROUP OF PATIENTS	MEAN(SD)	STAT.SIGNIFICANCE
DEHISCENCE n=5	3.42	P<0.008
NON DEHISCENCE n=79	4.59	

**Table 7: Evaluation of the lower uterine region thickness at surgery before the delivery of the baby with steel scale**

Group of patients	NO OF CASES	LUS THICKNESS MEAN(SD)	STAT.SIGNIFICANCE
Unscarred elective section	20	4.67	t= 2.32 p<0.001
Unscarred emergency	10	4.37	
Post cesarean elective	42	4.27	t= 2.44 P<0.001
Post caesarean emergency	34	3.34	

## DISCUSSION

Lower uterine region's average thickness was 4.60mm in 100 cases of post Caesarean pregnancy. Lower uterine region's average thickness in primary section was 4.77mm. In this study, there was no significance in thickness of LUS in post caesarean pregnancy that underwent elective caesarean and unscarred elective section. 3.5mm was a better predictor of sensitivity and specificity in present study. At <3.5mm there were 4 cases of dehiscence and 3 cases of very much thinned out LUS. Above 3.5 mm there was 1 case of dehiscence.<sup>[1]</sup>

The inter pregnancy interval for most of the cases was 18 months the mean thickness was 5 mm, only 2 of them were <18 month the mean thickness was 4.4 mm.<sup>[2]</sup>

There was no case of perinatal mortality or rupture in the present study group trial vaginal was monitored by partogram.

There is a less chance of dehiscence during subsequent trials of labor, if the thickness was >3.5 mm. According to Bujold E study Full LUS thickness of <2.3 mm is linked to a greater risk of complete uterine rupture.<sup>2</sup> The linear regression model analysis from Peter Uharček et al revealed that full LUS thickness of <2.5 mm was the only factor to be correlated with translucent lower uterine region (C3) (8.8 vs. 0 %; P = 0.02).<sup>3</sup> Hence, transvaginal delivery can be undertaken with more confidence.<sup>[3]</sup>

Throughout the entire gestation, L L Wang et al,<sup>[4]</sup> suggested paying special attention to the LUS condition. Ultrasonographic assessments of the LUS

thickness are highly linked with the intraoperative findings during caesarean birth, according to a practical open multicenter randomised experiment, P Rozenberg et al: Additionally, the likelihood of a LUS defect increases as the LUS becomes thinner on ultrasound. Conclusively, LUS ultrasound screening offers a very high negative predictive value for the likelihood of uterine abnormality. In order to decrease the rate of elective repeat caesarean deliveries and, in particular, to lower fetal and mother mortality and morbidity associated with a trial of labour following a prior caesarean delivery, this assessment in conjunction with a rule of discretion may be helpful.<sup>[5]</sup>

Shahla K Alalaf et al. Average thickness of a lower uterine region's of 2.3 mm and myometrial of 1.9 mm during the first stage of labor are associated with a high risk of uterine defects during a labor trial.<sup>[6]</sup>

## CONCLUSION

If the lower uterine region's thickness measured through validated ultrasound technique is >3.65 mm then there is less chance of uterine rupture. Hence, transvaginal delivery can be undertaken with more confidence.

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