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Original Research Paper

Assessment of incidence of scar dehiscence in previous cesarean section patients coming to MGM Medical College and hospital, Aurangabad

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ABSTRACT:

Introduction:

- Uterine dehiscence is considered an incomplete division of the three layers: the perimetrium, myometrium, and endometrium. In contrast to uterine rupture where there is a complete division of all three layers [1]. The defect is considered a dehiscence as long as the serosa layer of the uterus stays intact.
- Whereas thinning of Lower Uterine Segment is a subjective visual finding, especially at the scar site.
- Uterine scar dehiscence is a common complication of cesarean delivery, which increases the risk of uterine rupture [2]. Complications of uterine dehiscence and scar rupture atprevious scar site are influenced by fetal position, the location of the defect, and the location of the placenta.
- Early complications of LSCS include hematoma, infection, wound dehiscence, and thrombus formation. Long-term complications include placenta accreta, peritoneal adhesions, infertility, and myometrial thinning with uterine rupture.
- Thus, in this study, we will assess the incidence of scar dehiscence and scar rupture in previous cesarean deliveries.

Material and methodology:

- Type of Study: Retrospective study
- Study Area: Department of Obstetrics and Gynaecology, MGM Medical College and Hospital, Aurangabad
- Study Period: October 2022 to March 2023
- Sample Size: 300

Inclusion Criteria:

A. Women who have given consent to participate
B. Previous cesearean patients

Exclusion Criteria: None

Results:

Incidence of scar dehiscence and rupture was more in patients with more than one cesarean section
Prediction of scar dehiscence and scar rupture can be made based on clinical findings.

Keywords: scar dehiscence, scar rupture, thinning of Lower Uterine Segment (LUS), previous caesarean, VBAC

INTRODUCTION :

- Uterine dehiscence can be defined as an incomplete uterine scar separation with intact serosa.
- Uterine scar rupture is complete separation of all the three layers.
- Whereas thinning of Lower Uterine Segment is a subjective finding.
- Incidence of uterine dehiscence or rupture depends on various factors (Multifactorial)

Risk factors include:

Inter-delivery interval
Number of previous caesarean sections
Multiple gestation
If patient is in labour or not.

- Some of the clinical features which are indicative of the scar dehiscence and rupture include- maternal tachycardia, per abdominal scar tenderness, foetal distress.

Complications of uterine scar dehiscence include:

1)Maternal- uterine rupture , need of blood transfusion, uterine infection

2)Foetal- Foetal distress, IUFD

AIM AND OBJECTIVES:

- **AIM-** To assess the incidence of scar dehiscence and scar rupture in previous caesarean patients coming to MGM Medical College & Hospital, Aurangabad.

OBJECTIVES:

1. To know the incidence of repeat caesarean section in MGM.
2. To study the correlation between clinical findings & Intraoperative findings.
3. To estimate the incidence of scar dehiscence and scar rupture in previous caesarean patients.

MATERIALS AND METHODOLOGY:

- **Type of study:** Retrospective study
- **Study area:** Department of OBGY, MGM Aurangabad
- **Study Period:** October 2022 to December 2023
- **Sample size:** 300
- **Inclusion criteria:** Previous cesarean section patients.
- **Exclusion criteria**: Patients not giving consent to participate.

STUDY PROCEDURE:

- With ethical committee approval and participant's consent, 300 patients with history of previous LSCS were included in the study over a period of 6 months (October 2022 To March 2023).
- A proforma was used to collect data.

It included parameters such as:

1. Previous LSCS how many years back
2. Current Gestational Age of patient at which LSCS to be done
3. Maternal pulse
4. Per abdominal scar tenderness

- Then, after the patient underwent caesarean sections, Intraoperative findings were noted (either Scar dehiscence or Scar Rupture or thinning of the lower uterine segment).
- Further, correlation of preoperative clinical features (like maternal pulse, per abdominal scar tenderness) and intraoperative findings was done.

RESULTS:

Table 1 : Distribution of study subjects according to Intraoperative Findings (N=300)

Intra-operative Findings	No.	Percent
Thinned out LUS	70	23.3%
Scar Dehiscence	22	7.3%
Scar Rupture	1	0.3%
Remaining	207	69.1%

Table 2 : Distribution of study subjects according to Duration of previous LSCS and Intraoperative Findings (N=300)

Duration (years)	No.	Scar dehiscence	Thinning of LUS	Scar Rupture	Remaining
<=3	88 (29.3%)	6 (6.8%)	18(20.5%)	1 (1.1%)	63(71.6%)
>3	212(70.7%)	16(7.5%)	52(24.5%)	-	144(68%)
		0.825	0.448	0.120	

Duration of Previous LSCS is significantly associated with Thinning of the Lower Uterine segment, but is not significantly associated with Scar Dehiscence or Scar Rupture.

Table 3: Distribution of study subjects according to Gestational Age and Intraoperative Findings (N=300)

Gestational Age	No.	Scar Dehiscence	Thinned Out LUS	Scar Rupture	Remaining
Preterm	36(12%)	6 (16.6%)	2 (5.6%)	-	28 (77.8%)
Term	264 (88%)	16 (6.1%)	68 (25.8%)	1 (0.4%)	179 (67.8%)
P Value		0.022*	0.007*	0.711	

Preterm delivery is a risk factor for Scar dehiscence and Thinning of LUS, but not significantly associated with Scar Rupture

Table 4: Distribution of study subjects according to Scar Tenderness and Intraoperative Findings (N=300)

Scar Tenderness	No.	Scar Dehiscence	Thinned Out LUS	Scar Rupture	Normal
Yes	60(20%)	4 (6.7%)	26 (43.3%)	-	30 (50.0%)
No	240(80%)	18 (7.5%)	44 (18.3%)	1 (0.4%)	177 (73.8%)
P Value		0.825	<0.001*	0.616	

Scar tenderness is not a Reliable factor suggestive of Scar Dehiscence and Scar Rupture as it may be masked by Labor Pain. Scar tenderness is elicitated in thinned out scar patient as it may be due to stretching of the peritoneum.

Table 5: Distribution of study subjects according to Maternal Tachycardia and Intraoperative Findings (N=300)

Maternal Tachycardia	No.	Scar Dehiscence	Thinned Out LUS	Scar Rupture	Normal
Yes	64(21.3%)	8 (12.5%)	24 (37.5%)	-	32 (50.0%)
No	236(78.7%)	14 (5.9%)	46 (19.5%)	1 (0.4%)	175 (74.2%)
P Value		0.074	0.003*	0.602	

Thinning of the LUS may present as Maternal Tachycardia due to pain of stretching of the peritoneum. Maternal Tachycardia is not a reliable factor suggestive of Scar Dehiscence and Scar Rupture.

Table 6: Distribution of study subjects according to Both Maternal Tachycardia and Scar Tenderness and Intraoperative Findings (N=300)

Both Maternal tachycardia and Scar Tenderness	No.	Scar Dehiscence	Thinned Out LUS	Scar Rupture	Normal
Yes	32 (11.9%)	2 (6.3%)	14 (43.8%)	-	16 (50%)
No	268(83.7%)	20 (7.5%)	56 (20.9%)	1 (0.4%)	191 (71.2%)
P Value		0.804	0.004*	0.729	

Both Scar tenderness and Maternal Tachycardia significantly suggest Thinning of LUS, but not suggestive of Scar Dehiscence or Scar Rupture.

DISCUSSION:

- In this study, about 300 patients with previous Cesarean section were enrolled over a period of 6 months (October 2022 to December 2024).
- This study comprises of assessment of scar dehiscence in previous Cesarean section patients in immediate preoperative period for Clinical symptoms (such as maternal tachycardia, scar tenderness) and intraoperative findings (Thinning of LUS, Scar Dehiscence, Scar Rupture).
- This study is comparable to stud by Mohamad K. Ramadan to know the incidence and risk factors of Uterine Scar Dehiscence identified at Cesarean Section. It had incidence of 4.6% of Uterine Scar Dehiscence. Factors significantly associated with Uterine Scar Dehiscence were preterm delivery or >= 2 previous two cesarean section and interdelivery interval of <= 2 years.
- Scar Dehiscence and Scar Rupture are different entity with the first one including incomplete give away of Uterine layers and Scar Ruptue meaning complete give away.
- Thinning of LUS is a subjective finding, moreover.
- These difference between scar dehiscence and scar rupture can be differentiated as in one of the studies by Maciej Zietek about Morphological estimation of incomplete Uterine Scar Dehiscence or Ruptue by Immunohistochemical studies.
- This study concluded that maternal tachycardia, scar tenderness and both are not significantly associated with intraoperative scar dehiscence or rupture; but are significantly associated with Thinning of LUS. This result is comparabale with study of M.Guiliano, about "signs, Symptoms and Complications of Complete and Partial Uterine Ruptures during Pregnancy and delivery."
- This study also concluded that increased incidence of primary cesarean section increases the incidence of repeat Cesarean section.
- The strenghths of this study includes adequate sample size and the fact that population investigated attended the same tertiary care hospital. The larger sample size allowed evaluation of association of a previous Uterine scar dehiscence with several clinically important outcomes.
- The present study also has some weaknesses that should be considered; mostly owing to its retrospective design. Also not all risk factors were included in this study such as incidence in patients with history of scar dehiscence in previous cesarean section and also subjective terms like thinning of LUS were also included in this study.

CONCLUSION:

- Increased Incidence of primary cesarean section increases incidence of repeat cesarean section.
- Maternal Tachycardia or Per Abdominal scar tenderness was not significantly associated with Scar dehiscence.
- Maternal Tachycardia or Per Abdominal scar tenderness was not significantly associated with Scar Rupture.
- Maternal tachycardia and per abdominal scar tenderness was SIGNIFICANTLY associated with thinning of scar.
- Preterm delivery is a risk factor for scar dehiscence.

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