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Original Research Paper

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ANALYSIS OF PLACENTA PREVIA AND MORBIDLY ADHERENT PLACENTA SPECTRUM SECTIONS AND THEIR FETO-MATERNAL OUTCOMES USING ROBSON CLASSIFICATION

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ABSTRACT **Background:** Placenta previa and placenta accreta syndrome is a high-risk obstetric problem with high rates of feto-maternal mortality and morbidity. This study is aimed at determining the feto maternal outcomes of mother who underwent cesarean section for PAS/ placenta previa and their feto-maternal outcomes. The use of the patented Ashok Anand Stitch in these cases have been analyzed. **Method:** this is a prospective study conducted in a tertiary care center for a period from April 2023 to March 2024. **Results:** The total number of deliveries in the present study were 1769 deliveries out of which 730 were cesarean section, of which total placenta previa and MAP were 56. The maximum number of placenta previa and morbidly adherent placenta were seen in the previous 1 LSCS (32). Maximum babies were baby with mother. The study shows the maximum NICU admission for low birth weight. **Conclusions:** The study shows that this tertiary care center had lesser numbers of cesarean hysterectomies as compared to the others due to the use of ARA stitch. The need for blood and blood products decreased as well due to the same.

KEYWORDS : Placenta previa, morbidly adherent placenta, fetal and maternal complications, ARA Stitch

INTRODUCTION

Cesarean section is a surgically indicated procedure that can save lives of both the mother and baby. However there has been a increase in the LSCS rates globally as well as in India. In India, the rise in caesarean deliveries has been particularly pronounced, increasing from 3% in 1992-93 to 17% in 2015-16, and further climbing to 21.5% by 2019-212. This trend is documented in the findings of the National Family Health Survey – 5 (NFHS-5)3, which analysed the prevalence of caesarean sections among women.

In 2015, WHO proposed the use of the Robson classification (also known as the 10- group classification) as a global standard for assessing, monitoring and comparing caesarean section rates both within healthcare facilities and between them. The system classifies all women into one of 10 categories that are mutually exclusive and, as a set, totally comprehensive. The categories are based on 5 basic obstetric characteristics that are routinely collected in all maternities (parity, number of foetuses, previous caesarean section, onset of labour, gestational age, and foetal presentation).

Table 1: The Robson 10 system classification

Group	Obstetric population
1	Nulliparous women with a single cephalic pregnancy, ≥37 weeks gestation in spontaneous labour
2	Nulliparous women with a single cephalic pregnancy, ≥37 weeks gestation who had labour induced or were delivered by CS before labour
2a	Labour induced
2b	Pre-labour CS
3	Multiparous women without a previous CS, with a single cephalic pregnancy, ≥37 weeks gestation in spontaneous labour
4	Multiparous women without a previous CS, with a single cephalic pregnancy, ≥37 weeks gestation who had labour induced or were delivered by CS before labour
4a	Labour induced
4b	Pre-labour CS
5	All multiparous women with at least one previous CS, with a single cephalic pregnancy, ≥37 weeks gestation
5.1	With one previous CS
5.2	With two or more previous CSs
6	All nulliparous women with a single breech pregnancy
7	All multiparous women with a single breech pregnancy including women with previous CS(s)
8	All women with multiple pregnancies including women with previous CS(s)
9	All women with a single pregnancy with a transverse or oblique lie, including women with previous CS(s)
10	All women with a single cephalic pregnancy < 37 weeks gestation, including women with previous CS(s)

Abnormal trophoblast infiltration beyond the fibrinoid Nitabuch layer all or part of the placenta attaches abnormally to the myometrium Accreta: Chorionic villi attach to the myometrium, rather than being restricted within the decidua basalis. (82%). Increta: chorionic villi invade into the myometrium. (12%) . Percreta: chorionic villi invade through the myometrium, penetrates beyond the myometrium (6%). The most common management of placenta previa is lower segment ceserean delivery and proceeding to obstetric hysterectomy.

Aa Stitch: Ashok Anand's stitch[2] is a simple, less invasive, cost effective, time saving and rapidly effective method to control lower uterine segment blood loss in such cases. This technique has been successfully applied to several cases of placenta previa, with no apparent complications till date, no requirement of blood transfusion for operative blood loss and no obstetric hysterectomies.

The Ashok Anand Stitch[2] completely obliterates these collaterals and end arteries prior to the placental separation, thereby devascularizing the lower segment. This stitch hence, controls the lower segment bleeding in cases of placenta previa and morbidly adherent placenta previa during caesarean section, which usually leads to severe antepartum and postpartum haemorrhage, thereby leading to haemorrhagic shock. Blood loss is managed by replacing the volume by blood and blood product. Amount of blood loss also depends on the type of placenta previa. When the stitch is taken little medially, there will occur a swelling, due to bleeding in the dead space, thus proving the basis of the stitch on table. Sometimes, the stitch may have to be repeated when it gets loosened after placenta is removed.

METHODS:

The study is a prospective observational study conducted in a tertiary care center in Mumbai after obtaining ethics committee approval.

Inclusion Criteria: all women who delivered via ceserean section with placenta previa and morbidly adherent placenta on ultrasonography.

Exclusion Criteria:

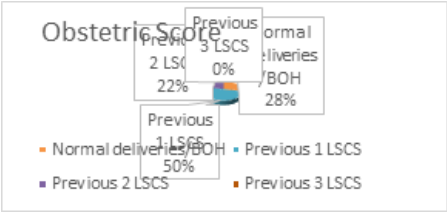
- Birth weight < 500 grams
- Participants not consenting for study.
- No data will be collected on females undergoing medical termination of pregnancy beyond 24 weeks.

OBSERVATIONS AND RESULTS:

The total number of placenta previa/ morbidly adherent placenta in the present study is 56 (7.67%). 50% is contributed by previous 1 LSCS followed by normal deliveries and bad obstetric history (28%) and previous 2 LSCS (22%). No cases were reported in previous 3 LSCS.

Table: Previous LSCS in placenta previa and Morbidly adherent Placenta categorized according to Robson 10 system classification.

		Grp 1	Grp 2	Grp 3	Grp 4	Grp 5	Grp 6	Grp 7	Grp 8	Grp 9	Grp 10	Total
Obstetric history	Normal deliveries/BOH	-	7	3	3							13
	Previous 1 LSCS	-				21		1			10	32
	Previous 2 LSCS	-				5					6	11
	Previous 3 LSCS	-				0						0
			7	3	3	26		1			16	56



ANC patients presenting with bleeding per vaginum categorized as per Robsons 10 system classification:

75% of the patients in the study presented with bleeding per vaginum and the rest 15% presented with no bleeding and with pain in abdomen and scar tenderness.

		Grp 1	Grp 2	Grp 3	Grp 4	Grp 5	Grp 6	Grp 7	Grp 8	Grp 9	Grp 10	Total
Antenatal bleeding	**Yes**	-	**5**	**2**		**24**		**1**			**10**	**42**
	No	-	**2**	**1**	**3**	**2**					**6**	**14**

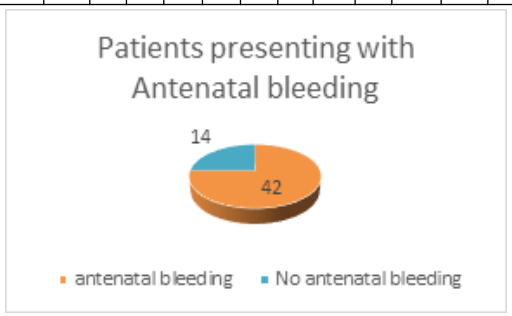


Figure: Patients presenting with antenatal bleeding

Maternal outcomes with placenta previa/ morbidly adherent placenta:

Out of the 56 cases of placenta previa and morbidly adherent placenta previa, 58.9% of the cases had ARA Stitch[2] taken to avoid blood loss and avoid obstetric hysterectomy. The blood loss after taking ARA stitch[2] has been between 1500 to 2000 ml. the need for obstetric hysterectomy occurs in only 1.9% of the cases as compared to the patients. A special emphasis is made on saving the uterus by the patented Ashok Anand Stitch in cases of morbidly adherent placenta. The stitch is the brain child of Dr. Ashok Anand[2] who invented it on an operating table in the year 2007 and patented the same in 2013. The stitch shows to have lesser complications and lesser need of blood, blood products and need of cesarean hysterectomies. The AA stitch[2] completely obliterates these collaterals and end arteries prior to the placental separation, thereby de vascularizing the lower segment. This stitch hence controls the lower segment bleeding in previas and morbidly adherent placenta previas. Future fertility is not affected, it is a simple, non-time consuming and can be taken by any obstetrician and the results being instantaneous.

Table: Maternal outcomes with placenta previa/ morbidly adherent placenta.

		Grp 1	Grp 2	Grp 3	Grp 4	Grp 5	Grp 6	Grp 7	Grp 8	Grp 9	Grp 10	Total
ARA Stitch	With ARA Stitch	-	1	0	2	20		0			10	33
	Without ARA Stitch	-	6	3	1	4		1			0	15
Obstetric hysterectomy	With ARA Stitch	-	0	0	0	2					1	3
	Without ARA stitch	-	1			5					3	9
CCU/MICU Admission		-	2			8					5	15
Maternal mortality		-										0

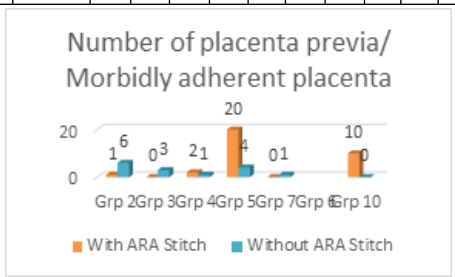


Fig: The number of placenta previa / morbidly adherent placenta previa in the present study

Outcome as obstetric hysterectomy with and without ARA stitch:

The study shows that the use of Ashok Anand stitch[2] in the patients of morbidly adherent placenta reduced the need of obstetric hysterectomy. 5% underwent hysterectomy post ARA stitch and 11.11% underwent obstetric hysterectomy without taking ARA stitch in the present study.

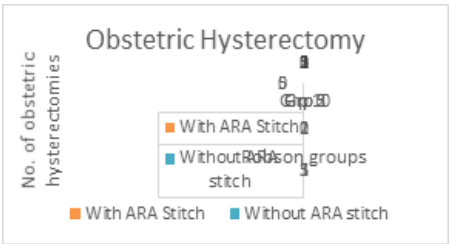


Fig: Outcome as obstetric hysterectomy with and without ARA stitch.

DISCUSSION:

The study shows that the use of ARA stitch ahs reduced the maternal morbidity, the need for cesarean hysterectomies, need for blood and blood products and the need for CCU admissions. The Robson classification system indeed categorizes the indications of cesarean sections and the audits keep the rising trends of cesarean sections in check. The more number of cesarean sections in primigravida

increases the risk of the placenta previa and morbidly adherent placenta in subsequent pregnancies and hence the classification helps obstetricians and the public health care system, to audit their induction practices and to provide optimum care to the mothers.

The present study shows no maternal mortality. The other studies show the maternal mortalities in these cases due to PPH (post-partum hemorrhage). The neonatal outcomes in the current study had maximum babies with mother and the maximum cause of NICU admission being low birth weight.

The study shows that there is a need for early diagnosis and early referral to the tertiary care center for better management and prevent maternal morbidity and mortality.

CONCLUSION:

The Robson classification is classification used to analyse the indications of caesarean section and a mode to reduce the unnecessary caesarean section that are being carried out. Ashok Anand stitch has been used in many educational institutes across India since 2007. There have been no reported complications due to the stitch till date. No additional uterotonics to be administered during surgery or post operative care. Till date, only 5 patients have required obstetric hysterectomy. The beauty of the stitch lies in its SIMPLICITY!! Based on the logical course of the anatomy of blood vessels. Technically easy, fast & inexpensive. The results are right in front of you. Requires no special instrumentation or facility besides a straight needle or long curved needle which is preferred. Does not affect future fertility.

REFERENCES:

1. Dr Sheela V Mane, D. S. (2010). Placenta previa, types and etiology. In D. B. Dr Sheela V Mane, FOGSI FOCUS (pp. 3-4). CBS.
2. Dr. Ashok Anand, D. P. (2023). The Ashok Anand Stitch: A Saviour In Morbidly Adherent Central Placenta Previa. international journal of scientific research, 10 - 12.
3. Anand AR, Gupta D, Prasad A. Reducing intraoperative lower segment blood loss in placenta previa with Ashok Anand stitch. International Journal of Reproduction, Contraception, Obstetrics and Gynecology [Internet]. 2016 [cited 2024 Oct 4];2(2):135–40. Available from: https://www.ijrcog.org/index.php/ijrcog/article/view/197
4. F Gary Cunningham, K. J. (2023). Hemorrhagic Placental Disorders. In Williams Obsterics, Edition 26 (p. 1943 to 1990). Tata Mcgraw Hill .
5. M. Kollmann, J. G. (2024, january). P25.07: Placenta previa: incidence, risk factors and outcome. ultrasound in obstetrics and gynaecology, 332 - 333.
6. Oppenheimer, L. W. (2009). A new classification of placenta previa: Measuring progress in obstetrics. American journal of obstetrics and gynaecology, 227 - 229.
7. Mavrides EAS, Chandraharan E, Collins P, Green L, Hunt BJ, Riris S, Thomson AJ. On behalf of the Royal College of Obstetricians and Gynaecologists Prevention and management of postpartum haemorrhage. BJOG Int J Obstet Gynaecol. 2016;124:e106–e49.
8. Anderson-Bagga FM, Sze A. Placenta Previa. [Updated 2022 Jun 21]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK539818/
9. Silver RM. Abnormal Placentation: Placenta Previa, Vasa Previa, and Placenta Accreta. Obstet Gynecol. 2015 Sep;126(3):654-668. doi: 10.1097/AOG.0000000000001005. PMID: 26244528.
10. Wu X, Guo F, Ying T, Shen GF. Correlation of placenta previa type with cesarean section blood loss and predictors of hysterectomy. Chin Med J (Engl). 2021 Jan 27;134(4):501- 502. doi: 10.1097/CM9.0000000000001210. PMID: 33617187; PMCID: PMC7909324.
[11] Aiello, M. A., and Leuzzi, F. (2010), "Waste Tyrerubberized concrete: Properties at fresh and hardened state." Journal of Waste Management, ELSEVIER, 30,1696-1704.
[12] Batayneh, M. K., Marie, I., and Asi, I. (2008),"Promoting the use of crumb rubber concrete indeveloping countries." Journal of Waste Management,ELSEVIER, 28, 2171-2176.
[13] Egyptian Code Committee 203, (2003), "Experimentalguide for testing of concrete materials." Part 3 of theEgyptian code of practice for the design andconstruction of reinforced concrete structures.
[14] Eldin, N. N., and Senouci, A. B. (1993), "Rubber-Tyreparticles as concrete aggregate."Journal of Material inCivil Engineering, ASCE, 5(4), 478-496.