STUDY ON FREQUENCY OF PLACENTA PREVIA AND MORBIDLY ADHERENT PLACENTA IN PATIENTS WITH PREVIOUS CESAREAN SECTIONS

ABSTRACT

Objective: To determine the incidence of different positions of placenta previa and morbidly adherent placenta in women who had previous multiple cesarean section reporting at Department of Gynecology and Obstetrics, Isra University Hospital.
Patients and Method: This cross sectional was done at department of Gyne/Obs and department of Radiology ISRA University Hospital Hyderabad during one year.
An informed consent was taken from pregnant women during antenatal diagnosed to have placenta previa or morbidly adherent placenta on ultrasound with history of previous C-section. The clinical / abdominal examination was done and proformas were filled, the location of placenta previa and morbid adherence was confirmed during C-section and observations were recorded for results. Data was collected via study proforma and analysis of data was done by using SPSS version 26.
Results: The mean of the patients was 29.31±5.17years. Most of the study participating women 87(87%) gave the history of Cesarean sections during previous deliveries, while only 13(13%) women had history of NVDs (normal vaginal deliveries) and Cesarean sections both. Out of all 33% patients observed with placenta previa and morbidly adherent placenta in women who had previous multiple cesarean section, particularly the previa I to IV 22.0%, placenta accreta 4%, placenta percreta 4% and least common type was placenta increta 3%. Incidence of the placenta previa and morbidly adherent placenta in women who had previous multiple cesarean section was statistically insignificant according number of c-sections (p-0.39).

Conclusion: As per study conclusion the placenta previa and morbidly adherent placenta was observed to be the highly frequent among women who had previous multiple cesarean section. There was no effect observed of the number of caesarean sections performed, implying that one previous caesarean may have caused placenta previa and morbidly adherent placenta.

Key words: cesarean section, placenta previa, placenta accreta, placenta increta, placenta percreta.

INTRODUCTION

Cesarean section (CS) is a surgical procedure, in which incision is made in anterior abdominal wall and uterus to deliver the fetus.[1] This surgical procedure is a life-saving technique especially in certain conditions during pregnancy or during labour which stop the progression of the normal vaginal delivery of the fetus. As being a major surgical procedure, it has its own short- and long-term effects on mother and on future pregnancies.[2] Marked variation in the prevalence of Cesarean section is observed in

various regions of the world, current figures show that 18.6% of births are through Cesarean sections ranging between 6%-27.2% in developing and developed countries.[3] A rise in Cesarean Section rates leads to rising concerns, research and debates in healthcare communities, scientists and policy makers round the globe.[4] During the year 2000, 221 caesarean sections were done per 1000 live births in European Union; by 2011, that number had increased to 268/1000 live births.[5]. The rate of Cesarean Section deliveries was reported to be 23.94% among Bangladesh [6]. The rate of Cesarean section deliveries in India are reported to range between 24% to 41% depending on public and private sector deliveries.[7] This rising Cesarean section rate brought the uterine scar prevalent in the obstetric population. As for as its rate in Pakistan is concerned 6.28% was in year 1991 while it was reported 15.8% during 2012-2013.[8] This increasing number of cesarean sections kept on increasing the rate of repeat Cesarean section in previously operated patients reaching about 50%. The evidence supports that there is increased risk of complications with multiple cesarean sections which include adhesions uterine rupture, hemorrhage, bladder injury, placenta previa, accreta, increta, percreta leading to hysterectomy. Placenta Previa which is defined as obstetrical conditions in which the placental tissue lies in the lower segment close to or covering the internal Os of cervix uteri, its prevalence was reported to be 12%-38% in pregnancies with previous cesarean section in Pakistan.[9] Placenta Previa can further be divided into minor and major on the basis of covering the internal os. The obstetric complication of placenta previa occurs mostly in 2nd and 3rd trimesters of pregnancy resulting into morbidity as well as mortality in mothers and fetus. Each cesarean section increases the risk of placenta Previa by 1.5-5 times reaching to 10%. About 3-9/1000 pregnancies are responsible for uterine bleeding as a major cause resulting into significant perinatal outcomes in the latter stages of gestation so potentially may end in life threatening emergencies requiring a management with multidisciplinary approach. [10.11] Women who have damaged myometrium by previous cesarean sections, D&C and any other scar in uterus are at a greater risk for placenta Previa. The early diagnostic value of placenta Previa well before the delivery is important so that, multidisciplinary approach can be planned to minimize the potential harm to the mothers and neonates. [12,13] The development of a morbidly adherent placenta is a significant pregnancy problem that can result in extensive and potentially fatal intrapartum and postpartum bleeding. It has become the most common reason for emergency hysterectomy. Morbidity and mortality have been observed in up to 60% of women having morbidly adherent placentas, with mortality in up to 7%.[14] The strongest cause of accreta is placenta previa, when multiple prior caesarian sections are associated [14]. However, the risk associated with these factors has not been quantified on a population of females with previous caesarian sections visiting our institutional hospital. This study was done to estimate the frequency of Placenta Previa and morbidly adherent placenta in cases of previous cesarean sections reporting at the Department of Gynecology and Obstetrics, Isra University Hospital.

MATERIAL AND METHODS

This study cross-sectional study was done at department of Gynecology /Obstetric and department of Radiology ISRA University Hospital Hyderabad during one year. All pregnant women (>28 weeks of gestation and Singleton pregnancy) with history previous caesarian sections, age 18 years to 40 years were included. All the pregnant patients with normally situated placenta, twin pregnancy and who were not agreeing to participate in the study were excluded. *A*fter taking informed consent from pregnant women or attendants who fulfill the inclusion criteria and admitted in Obstetric unit of Isra University Hospital Hyderabad were recruited. Detailed medical history was taken regarding age, parity, duration of gestation and complaints suggestive of Placenta previa, history was asked regarding Cesarean sections and abdominal examination was conducted. Routine laboratory investigations were ordered along with Ultrasonography. All the information was collected via study proforma. Data was analyzed on SPSS 26 version.

RESULT

The mean of the patients was 29.31±5.17years. Majority of the women were from the Hyderabad city 57(57.6%) while 43(42.4%) were from the rural areas of Sindh. women with 2 gravida were in majority 34 (34.3%). Most of the study participating women 87(87%) gave the history of Cesarean sections during previous deliveries, while only 13(13%) women had history of NVDs (normal vaginal deliveries) as shown in table.1

Out of all 33% patients observed with placenta previa and morbidly adherent placenta in women who had previous multiple cesarean section, particularly the previa I to IV 22.0%, placenta accreta 4%, placenta percreta 4% and least common type was placenta increta 3%. Fig:1

Incidence of the placenta previa and morbidly adherent placenta in women who had previous multiple cesarean section was statistically insignificant according number of c-sections (p-0.39). Table.2

Table.1 Demographic characteristics of the patients n=100

Variables		**Frequency (%)**
Age (mean+SD)		29.31±5.17years
Residential status	Urban	57(57.0%)
	Rural	43(43.0%)
Gravidity	Gravida 1	2(2.0%)
	2	34(34.0%)
	3	25(25.0%)
	4	21(21.0%)
	5	8(8.0%)
	6	6(6.0%)
	7	3(3.0%)
Types of previous deliveries	C-section	87(87.0%)
	NVD+ C-Section	13(13.0%)

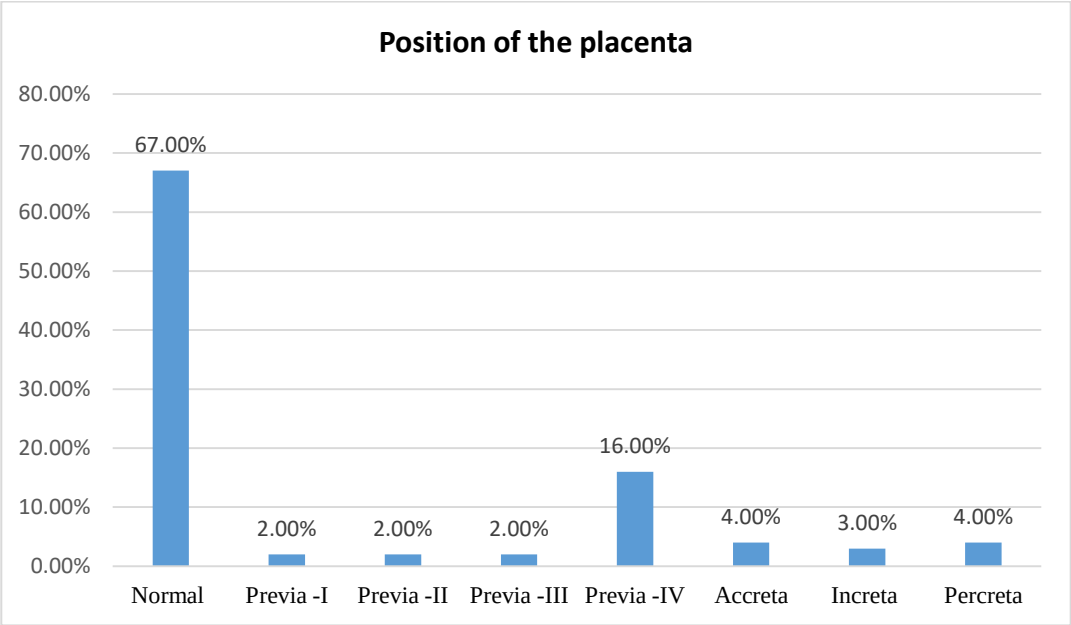

Fig:1 Position of the placenta n=100

Table.2 Placental position with respect to previous Cesarean Sections n=100

Position of the placenta	Previous C-Sections				Total	p-value
	1	2	3	4		
Normal	36	21	9	1	67	0.39
Previa I	2	0	0	0	2	
Previa II	1	1	0	0	2	
Previa III	1	1	0	0	2	
Previa IV	8	4	3	1	16	
Accreta	2	0	1	1	4	
Increta	1	0	1	1	3	
Percreta	0	2	2	0	4	
Total	51	29	16	4	100	

DISCUSSION

Increased maternal and newborn mortality and morbidity are linked to placenta previa and placenta accreta. The mean age reported by them was 20 years which is consistent to our study mean age 29.31±5.17 years.[15] Most of the study women belonged to urban area Hyderabad city 57.6% and that is consistent to Mumtaz et al[16] who also reported urban 71% dominancy on rural subjects 29%.[74] In this study females with 2 gravida were 34(34.3%) and that of gravida 3 were 25 (25.3%) and this is consistent with Nankali, A et al[15] reported the gravida 2-3 as76.5% (75 cases) while gravida 2-3Women. On other hand Parity 1 was reported 15.5%, parity 2-3 was declared 30.4%, parity 4-6 was 33.6%, parity 7 and more was 20.4% by Mumtaz et al[74] and that was not in accordance with our results.[16].

In this study placenta previa was found in 20.0% of females, with 10.1% had one previous caesarean, 6.1% had two previous caesarean sections, 3.0% had three previous caesarean sections, and 1.01% had four caesarean sections. Consistently Uzma S et al [17] reported that out of 33 cases of placenta previa, 9 cases had one previous caesarean section, 10 had 2 previous caesarean sections, 10 had three previous caesarean sections and 4 cases had four previous caesarean sections. Nankali, A et al [15] found Placenta Previa as 48% in their subjects and distributed it as complete Previa, patients with low previa as 32.7%, marginal previa as 13.3% while partial type of placenta previa as 6% where as we found previa II in 2 patients, previa III in 2 patients and previa grade IV in 16 patients that fall into inconsistent category. Furthermore, we found placenta accreta 4%, placenta percreta 4% and least common type was placenta increta 3% and association was non- significant of various cesarean sections quantity with position of placenta (p-0.39). On other hand Nankali, A et al[15] observed placental abnormality as Accreta in 10.2%, as Increta in 9.2% and as Percreta in 12.2%.

In this study the placenta previa I was 2.0%, previa II was 2.0%, previa III was 2.0% and previa IV was 16.1% that not in accordance with the published studies previously.[18,19] Majeed T et al reported in their study that the placenta previa major was in 77.19% (88 cases) while previa minor was in 22.80% (26 cases), Gravida 2-4 were in majority 67 (58.77%),3 previous cesarean sections were 29 (37.66%), age range 26-30 were most common 54 (47.36%) that is partially consistent and partially inconsistent to our results[20]. Gargari et al in their 7 year survey of 112868 deliveries found Placenta previa in 771 women at a prevalence 0.7% which is falling in contrast to our results.[21] Another work by Yazdani Tet al [22] on 122 pregnancies having previously undergone cesarean section surgeries reported 19 (15.5%) cases of placenta Previa was that consistent to our results and 23.3 % (14) patients were reported by Akram H et al to have placenta previa on their research on 60 females with history of cesarean section in past [23]. Study by Silver RM et al conducted in Israel reported a much higher incidence of placenta accreta in previously operated women for caesarean sections that is inconsistent to current results by us [18]. Kollmann et al reported from results he found in his study women that the aged 35 and above 2 parity are more prone P. previa [24]. There are much differences in the published data from various nations due to diverse nature of the factors that influence the condition. A Mozambique study also revealed a similar observation that cesarean sections are less observed in poor and rural area women and that is advantageous for them in terms of less frequent complications. Perez-Delboy A et al noted a rise in placental abnormalities with rise in cesarean sections that is also parallel to what we found.[25]

CONCLUSION: As per study conclusion the placenta previa and morbidly adherent placenta were observed to be the highly frequent among women who had previous multiple cesarean section. There was no effect observed of the number of caesarean sections performed, implying that one previous caesarean may have caused placenta previa and morbidly adherent placenta. Large-scale studies on the subject are recommended to prove the observations. By avoiding the cesarean section and promoting normal vaginal delivery, the chance of morbid adherent placenta can be decreased.

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

Consent

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

REFERENCES

1. Mengesha MB, Adhanu HH, Weldegeorges DA, Assefa NE, Werid WM, Weldemariam MG, Welay FT, Hidru HD, Gebru TT. Maternal and fetal outcomes of cesarean delivery and factors associated with its unfavorable management outcomes; in Ayder Specialized Comprehensive Hospital, Mekelle, Tigray, Ethiopia, 2017. BMC research notes. 2019 Dec;12(1):1-6.
2. Timor-Tritsch IE, Monteagudo A. Unforeseen consequences of the increasing rate of cesarean deliveries:early placenta accreta and cesarean scar pregnancy. A review. Am J Obstet Gynecol. 2012; 207(1):14–29.
3. Betrán AP, Ye J, Moller AB, Zhang J, Gülmezoglu AM, Torloni MR. The increasing trend in caesarean section rates: global, regional and national estimates: 1990-2014. PloS one. 2016;5;11(2):e0148343.
4. Vogel JP, Betran AP, Vindevoghel N, Souza JP, Torloni MR, Zhang J, et al. Use of the Robson classificationto assess caesarean section trends in 21 countries: a secondary analysis of two WHO multicountrysurveys.The Lancet Global health. 2015; 3(5):e260–70.
5. Mylonas I, Friese K. Indications for and risks of elective cesarean section. Deutsches Ärzteblatt International. 2015 Jul;112(29-30):489.
6. Hasan F, Alam M, Hossain M. Associated factors and their individual contributions to caesarean delivery among married women in Bangladesh: analysis of Bangladesh demographic and health survey data. BMC pregnancy and childbirth. 2019 Dec;19(1):1-9.
7. Shri Kant Singh, Deepanjali Vishwakarma, Santosh Kumar Sharma Prevalence and determinants of voluntary caesarean deliveries and socioeconomic inequalities in India: Evidence from National Family Health Survey (2015-16)Clinical Epidemiology and Global Health 8 (2020) 335–342
8. Mumtaz S, Bahk J, Khang YH. Rising trends and inequalities in cesarean section rates in Pakistan: Evidence from Pakistan Demographic and Health Surveys, 1990-2013. PloS one. 2017 Oct 17;12(10):e0186563.
9. Memon S, Kumari K, Yasmin H, Bhutta S. Is it possible to reduce rates of placenta praevia. Journal of the Pakistan Medical Association. 2010;60(7):566.

10. Suknikhom W, Tannirandorn Y. Previous uterine operation and placenta previa. J Med Assoc Thailand Chotmaihet thangphaet. 2011; 94(3):272-7.
11. Dandolu V, Graul AB, Lyons A, Matteo D. Obstetrical Hysterectomy, cesarean delivery and abnormal placentation. J Matern Fetal Neonatal Med. 2012;25(1):74-7
12. Yang X, Li Y, Li C, Zhang W. Current overview of pregnancy complications and live-birth outcome of assisted reproductive technology in mainland China. Fertility Sterility. 2014; 101(2):385-91.
13. Ikechebelu JI, Onwusulu DN. Placenta praevia: review of clinical presentation and management in a Nigerian teaching hospital. Nigerian J Med. 2007;16(1):61-4.
14. Garmi G, Salim R. Epidemiology, etiology, diagnosis, and management of placenta accreta. Obstetrics and gynecology international. 2012 Oct;2012.
15. Nankali A, Keshavarzi F, Shajari A, Daeichin S. Frequency of placenta previa and maternal morbidity associated with previous cesarean delivery. Open Journal of Obstetrics and Gynecology. 2014 Sep 29;4(14):903.
16. Mumtaz S, Bahk J, Khang YH. Rising trends and inequalities in cesarean section rates in Pakistan: Evidence from Pakistan Demographic and Health Surveys, 1990-2013. PloS one. 2017 Oct 17;12(10):e0186563.
17. Uzma S, Kiani BA, Khan FS. Frequency of placenta praevia with previous caesarean section. Ann Pak Inst Med Sci. 2015;11(4):202-5.
18. Silver RM, Landon MB, Rouse DJ, Leveno KJ, Spong CY, Thom EA, Moawad AH, Caritis SN, Harper M, Wapner RJ, Sorokin Y. Maternal morbidity associated with multiple repeat cesarean deliveries. Obstetrics & Gynecology. 2006;1;107(6):1226-32.
19. Nasreen, F. Incidence, Causes and Outcome of Placenta Previa. Journal of Postgraduate Medical Institute (Peshawar-Pakistan), 2011;17, 99-104
20. Majeed T, Waheed F, Mahmood Z, Saba K, Mahmood H, Bukhari MH. Frequency of placenta previa in previously scarred and non -scarred uterus. Pak J Med Sci 2015;31(2):360-363
21. Gargari SS, Seify Z, Haghighi L, Shariati MK, Mirzamoradi M. Risk factors and consequent outcomes of placenta previa: report from a referral center. Acta Medica Iranica. 2016 Dec 14:713-7.
22. Yazdani T, Islam A, Nadeem G, Hayat T, Mushtaq M.Frequency of Abnormal Placentation in Patients withPrevious Caesarean Section. J Rawalpindi Med Coll.2007;11(1):39-41.
23. Akram H, Bukhari. AA. Multiple caesarean sections- anassociation with increasing frequency of placenta Previa.Biomedica. 2009;25(1):28-31.
24. Kollmann M, Gaulhofer J, Lang U, Klaritsch P. Placenta praevia: incidence, risk factorsand outcome. The journal of maternal-fetal & neonatal medicine : the official journal ofthe European Association of Perinatal Medicine, the Federation of Asia and OceaniaPerinatal Societies, the International Society of Perinatal Obstet. 2016;29(9):1395-8.
25. Perez-Delboy A, Wright JD. Surgical management of placenta accreta: to leave or remove the placenta? Bjog 2014;121:163–169