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FREQUENCY OF ADHERENT PLACENTA AFTER UTERINE SURGERIES

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Abstract

A placenta that adheres abnormally to the uterine wall, either partially or completely, is known as an adherent placenta. Because of the significant morbidity and mortality linked to this disease and the possibility of a massive haemorrhage after birth, it is a potentially fatal pregnancy complication.

Objective: To determine the frequency of adherent placenta in pregnant women with history of uterine surgeries.

Place and Duration: This Cross-Sectional study was held in the department of obstetrics and gynecology of Nishtar Hospital Multan from 1st April 2016 to 30th September 2016.

Methods: A total of 170 pregnant females with singleton gravida with gestational age 28-36 weeks with history of ≥ 1 D&C or ≥ 1 C-Section or ≥ 1 Hysterotomy or ≥ 1 open abdominal myomectomy > 6 months passed and parity ≥ 1 were selected for the study. Patients with history of diabetes mellitus, hypertension and Hyperlipidemia were excluded. Color Doppler Ultrasound examination for exact placental localization and adherence of placenta was done to all patients. Ultrasound examination was done under the supervision of consultant gynecologist having 3 years post fellowship experience. Data was noted for adherence of placenta and recorded on especially designed proforma.

Results: This study age range was from 25-40 years with 32.911± 3.01 years of mean age, 32.305 ± 2.22 weeks was the mean gestational age, 74.100± 13.87 Kg was the mean weight, mean height was1.701± 0.10 meters, mean BMI was 27.378 ± 1.78 Kg/m2 and mean previous uterine surgeries was 1.747± 0.62. Majority of patients were of age group 31-40 years (81.2%). As far as type of previous uterine surgeries, 79.4% had C-section, 12.9% D&C and 7.6% had myomectomy. Adherent Placenta was seen in 5.9% patients.

Conclusion: My study has concluded that, no incidence of adherent placenta in women with a prior myomectomy. However, the rates of adherent placenta are high in females with prior cesarean section.

Keywords: Uterine surgeries, Adherent placenta, Frequency

INTRODUCTION

A placenta that adheres abnormally to the uterine wall, either completely or partially, is known as an adherent placenta. Given the significant morbidity and mortality linked to this disease and the possibility of a massive haemorrhage after birth, it is a potentially fatal pregnancy complication. Its incidence is 1:2500 deliveries, according to the American College of Obstetricians and Gynaecologists[1-2]. The three forms of morbidly adherent placenta—placenta percreta, increta and accreta are based on the degree of chorionic villi penetration and differ in the degree of attachment of the placental chorionic villi to the uterine myometrium[3-4]. Deciduas basalis is invaded in placenta accreta, but placenta percreta is the most extreme and uncommon type, piercing deep through the myometrium to the serosal surface and maybe even involving other organs such as the colon, pelvic peritoneum, and urine bladder[5-6].

The lack of a fibrinoid layer in the deciduas, which prevents trophoblastic villi from penetrating beyond deciduas into the myometrium, is a contributing factor in the pathophysiology of this aberrant placental development[7-8]. It causes disruption with the regular process of myometrial contraction and placental detachment to stop bleeding, as well as the absenteeism of the physiological plane of cleavage for placental separation following delivery[9]. The condition of morbidly adherent placenta in conjunction with placenta praevia and prior caesarean section delivery is becoming more clinically significant due to the global increase in caesarean section rates. Because it is believed that the myomectomy scar is functionally equal to the scar from a classical caesarean deliveries and women who previously had myomectomies also followed this pattern.[10]

Gyamfi-Bannerman C and his fellows has reported in a study that occurrence of adherent placenta was 1.98% in patients after uterine surgeries[11]. Richa A has reported in another study that frequency of adherent placenta was 70% in patients after uterine surgeries. In practice there is a lack of data on adherent placenta frequency in females with a prior uterine surgery[12]. One study showed high incidence10 and other show low incidence9 of adherent placenta. Therefore, there is a great need to find frequency of adherent placenta in our local population. Moreover, no such study is conducted in our local population. Therefore, this study aims to determine the adherent placenta frequency in patients after uterine surgeries in our local population.

METHODS

This Cross-Sectional study was held in the obstetrics and gynecology department of Nishtar Hospital Multan from 1st April 2016 to 30th September 2016. Sample size was calculated by 95% CI and 7% of marginal error, considering expected fraction of adherent placenta i.e. 70%,10 in pregnant women with history of uterine surgeries was 170 cases. Non-probability consecutive sampling technique was used for patient's selection.

INCLUSION CRITERIA:

- Pregnant women age 25-40 years
- Singleton pregnancy with gestational age 28-36 weeks on ultrasound
- H/o ≥ 1 D&C or ≥ 1 C-Section or ≥ 1 Hysterotomy or ≥ 1 open abdominal myomectomy > 6 months passed
- Parity ≥ 1

EXCLUSION CRITERIA:

- H/o Hypertension
- H/o Diabetes
- H/o Hyperlipidemia

The research department and ethics committee approved the inclusion of 170 patients who met the inclusion criteria from Nishtar Hospital Multan's outpatient department. Patients' baseline demographic data, including height, age, weight, and prior uterine operations, was collected. Every patient gave their informed consent, guaranteeing their privacy and confirming that there was no

risk to them by participating in this study. Color Doppler Ultrasound examination for exact placental localization and adherence of placenta was done to all patients.
Ultrasound examination was done under the supervision of consultant gynecologist having 3 years post fellowship experience. Data was noted for adherence of placenta and recorded on specific proforma. Data was analyzed with SPSS 22.0.
The percentage and frequency were evaluated for qualitative variables like age groups and adherent placenta. Frequency was calculated for parity, gravida and type of uterine surgeries. Mean ±SD was presented for quantitative variables like age, number of previous uterine surgeries, gestational age, weight, height and BMI.
Stratification was done with regard to age, parity, gravida, number and type of previous uterine surgeries and BMI to see the effect of these variables on adherent placenta. The chi-square test was applied for Post stratification results, $p \leq 0.05$ was considered statistically significant.

RESULTS

This study age range was from 25-40 years with 32.911± 3.01 years of mean age, 32.305 ± 2.22 weeks was the mean gestational age, 74.100± 13.87 Kg was the mean weight, mean height was1.701± 0.10 meters, mean BMI was 27.378 ± 1.78 Kg/m2 and mean previous uterine surgeries was 1.747± 0.62 as shown in Table-I.

Table- I: Mean± SD of patients conferring to gestational age, height, age, weight, BMI and previous uterine surgeries, n=170

Demographics		**Mean ±SD**
1	Age (years)	32.911± 3.01
2	Gestational age (weeks)	32.305 ± 2.22
3	Weight (Kg)	74.100± 13.87
4	Height (m)	1.701± 0.10
5	BMI (Kg/m^2)	25.966 ± 6.28
6	Previous Uterine Surgeries	1.747± 0.62

Majority of patients were of age group 31-40 years (81.2%) as shown in Table-II.

Table- II: frequency and percentage of patients conferring to age groups, n=170

Age Groups	**Patients**	**%age**
25-30	32	18.8%
31-40	138	81.2%
Total	170	100%

Frequency and percentage of gravida and parity is shown in Table-III

Table- III: frequency and percentage of patients conferring to parity, n=170

Parity	**Patients**	**%age**
1-3	88	51.8%
>3	82	48.2%
Total	170	100%
Gravida	**Patients**	**%age**
2-4	88	51.8%
>4	82	48.2%
Total	170	100%

As far as type of previous uterine surgeries, 79.4% had C-section, 12.9% D&C and 7.6% had myomectomy as shown in Table-IV.

Table- IV: frequency and percentage of patients conferring to type of previous uterine surgeries and frequency and percentage of patients conferring to Adherent Placenta, n=170

Type of Surgeries	**Patients**	**%age**
C-Section	135	79.4%
D & C	22	12.9%
Myomectomy	13	7.6%
Total	170	100%
Adherent Placenta	**Patients**	**%age**
Yes	10	5.9
No	160	94.1
Total	170	100%

Adherent Placenta was seen in 5.9% patients as shown in Table-IV. Stratification of Adherent Placenta with respect to age, parity, gravida, BMI and number of previous uterine surgeries are shown in Table- V, VI, VII, respectively.

Table-V: Stratification of Adherent Placenta with respect to age, Gravida and parity

		Adherent Placenta		**p-value**
Age Groups (Years)		**Yes**	**No**	
1	25-30	2(6.3%)	30(93.8%)	0.922
2	31-40	8(5.8%)	130(94.2%)	
Total		10(5.9%)	160(94.1%)	
		Adherent Placenta		**p-value**
Parity		**Yes**	**No**	
1-3		4(4.5%)	84(95.5%)	0.443
>3		6(7.3%)	76(92.7%)	
Total		10(5.9%)	160(94.1%)	
		Adherent Placenta		**p-value**
Gravida		**Yes**	**No**	
2-4		2(3.2%)	61(96.8%)	0.250
>4		8(7.5%)	99(92.5%)	
Total		10(5.9%)	160(94.1%)	

Table-VI: Stratification of Adherent Placenta with respect to BMI

		Adherent Placenta		**p-value**
BMI		**Yes**	**No**	
1	≤25	5(5.1%)	93(94.9%)	0.614
2	>25	5(6.9%)	67(93.1%)	
Total		10(5.9%)	160(94.1%)	

Table-VII: Stratification of Adherent Placenta with respect to number of previous uterine surgeries

		Adherent Placenta		**p-value**
Number of previous uterine surgeries		**Yes**	**No**	
1	1-2	0(0%)	153(100%)	0.000
2	>2	10(58.8%)	7(41.2%)	
Total		10(5.9%)	160(94.1%)	

Discussion

In this study, a high cesarean section rate at first Hysterotomy was associated with a statistically significant increase in the incidence of placenta accreta. These results are shocking considering the increase in cesarean sections13. There is ongoing discussion about reducing the rate of cesarean sections. Particularly for women wishing to have three or more children, it is important to provide patients with comprehensive advice on the risks and benefits of both a primary cesarean section and a subsequent trial of labor 14 . To avoid offering financial incentives for repeat cesarean sections, one author also suggests equalizing compensation amounts for successful VBACs with those for elective cesarean sections. A recent Cochrane study13 assessed the effectiveness and safety of non-clinical strategies to reduce unnecessary cesarean sections. Although evidence of effectiveness is still lacking, strategies such as implementing guidelines that include mandatory second opinions, mandatory public review at faculty meetings, provider-led efforts such as implementing guidelines with the support of local opinion leaders and mothers' organizations, targeted prenatal education available, programs patient support and decision-making. computer support and intensive group therapy are promising.14 In my study, 5.9% of pregnant women who underwent Hysterotomy experienced placental adhesion. In one study, Gyamfi-Bannerman C et al found that the placenta was adherent in 1.98% of patients undergoing Hysterotomy.15

According to another study by Rich A., placental adhesion was found in 70% of patients undergoing Hysterotomy.

Although placental adhesion is generally considered a disease with a clinically clear, distinct presentation and prognosis, a confusing diagnostic gray area prevents a full understanding of the disease17–18. Everyone agrees that placenta adhesion is defined as obstructed placental delivery, severe bleeding, and placental or uterine histological evidence of the presence of basilar muscle fibers19–20. However, there is still considerable debate about the appropriate classification of both the incidental pathological diagnosis of adherent placenta without routine clinical indications and the clinically serious cases diagnosed solely on the basis of clinical findings (i.e. simply clinically diagnosed) 21 - 22. This applies in particular to data regarding significant operator heterogeneity in the pathological identification of placenta samples23.

Although published estimates of the rate of placental adherence vary significantly, it is generally accepted that the rate is increasing24. This is due to variability between populations as well as differences in the diagnostic criteria used, namely the clinical features and histology of hysterectomy and placental samples25. A consistent set of criteria for the diagnosis of adherent placentas would help us better understand how they present and allow for better comparisons between studies, both in pathological diagnosis and in general. One limitation of the study was the small sample size. In the future, it would be beneficial to expand the larger project to non-public care centers and cover a wider population.

CONCLUSION

My study has concluded that, no incidence of adherent placenta in women with a prior myomectomy. However, the rates of adherent placenta are high in women with prior cesarean section.

REFERENCES

1. Eller AG, Bennett MA, Sharshiner M, Masheter C, Soisson AP, Dodson M, et al. Maternal morbidity in cases of placenta accrete managed by a multidisciplinary care team compared with standard obstetric care. Obstet Gynecol. 2011;117:331-7.
2. Demirci O, Tugrul AS, Yilmaz E, Tosun O, Demirci E, Eren YS. Emergency peripartum hysterectomy in a tertiary obstetric center: nine years evaluation. Obstet Gynaecol Res. 2011;37(8):1054-60.
3. ACOG committee opinion. Placenta accreta. Number 266, January 2002. American College of Obstetricians and Gynecologists. Int J Gynaecol Obstet. 2002;77:77-8.

4. Chen CH, Wang PH, Lin JY, Chiu YH, Wu HM, Liu WM. Uterine rupture secondary to placenta percreta in a near-term pregnant woman with a history of hysterectomy. J Obstet Gynaecol Res. 2011;37:71-4.
5. Aguilar-Hernandez OF, Renan-Riveroy-Coronado C, Sanchez- Garcia JF, Bolio-Bolio MA. Uterine rupture of placenta accreta. Ginecol Obstet Mex. 2010;78:250-3.
6. Royal College of Obstetricians and Gynaecologists. Placenta praevia, placenta praevia accreta and vasa praevia: diagnosis and management (Green-top Guideline No. 27) [Internet]. RCOG; [cited 2015 Feb 26]. Available from:https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg27/.
7. Spong CY, Mercer BM, D'Alton M, Kilpatrick S, Blackwell S, Saade G. Timing of indicated late preterm and early-term birth. Obstet Gynecol. 2011;118:323–33.
8. Landon MB, Lynch CD. Optimal timing and mode of delivery after cesarean with previous classical incision or myomectomy: a review of the data. Semin Perinatol. 2011;35:257–61.
9. Gyamfi-Bannerman C, Gilbert S, Landon MB, Spong CY, Rouse DJ, Varner MW. Risk of uterine rupture and placenta accreta with prior uterine surgery outside of the lower segment. Obstet Gynecol. 2012 Dec;120(6):1332–37.
10. Richa A, Amita S, Bala VN, Ponam Y, Abha S, Kiran M. Morbidly adherent placenta: a critical review. J Obstet Gynecol India. 2012 Jan-Feb;62(1):57–61.
11. Burton GJ, Fowden AL. The placenta: a multifaceted, transient organ. Philos Trans R Soc Lond B Biol Sci. 2015;370(1663):20140066.
12. Daltveit AK, Tollånes MC, Pihlstrøm H, Irgens LM. Cesarean delivery and subsequent pregnancies. Obstetrics and gynecology. 2008;111(6).
13. Barber EL, Lundsberg LS, Belanger K, et al. Indications contributing to the increasing cesarean delivery rate. Obstetrics and gynecology. 2011;118(1).
14. ACOG Committee opinion. Number 266, January 2002 : placenta accreta. Obstetrics and gynecology. 2002;99(1).
15. Read JA, Cotton DB, Miller FC. Placenta accreta: changing clinical aspects and outcome. Obstetrics and gynecology. 1980;56(1).
16. Fox H, Sebire N. Pathology of the Placenta. 3rd ed. Elsevier Limited; 2007:1-16, 80- 84.
17. Nguyen D, Nguyen C, Yacobozzi M, Bsat F, Rakita D. Imaging of the placenta with pathologic correlation. Seminars in ultrasound, CT, and MR. 2012;33(1).
18. Hutton L, Yang SS, Bernstein J. Placenta accreta. A 26-year clinicopathologic review (1956-1981). New York state journal of medicine. 1983;83(6).
19. Irving F, Hertig A. A Study of Placenta Accreta. Surg. Gynec. Obstet. 1937;64:178.
20. Jacques SM, Qureshi F, Trent VS, Ramirez NC. Placenta accreta: mild cases diagnosed by placental examination. International journal of gynecological pathology : official journal of the International Society of Gynecological Pathologists. 1996;15(1).
21. Oyelese Y, Smulian JC. Placenta previa, placenta accreta, and vasa previa. Obstetrics and gynecology. 2006;107(4).
22. Khong TY. The pathology of placenta accreta, a worldwide epidemic. J Clin Pathol 2008;61:1243-1246.
23. Tantbirojn P, Crum CP, Parast MM. Pathophysiology of placenta creta: the role of decidua and extravillous trophoblast. Placenta. 2008;29(7).
24. Strickland S, Richards WG. Invasion of the trophoblasts. Cell. 1992;71(3).
25. Wehrum MJ, Buhimschi IA, Salafia C, et al. Accreta complicating complete placenta previa is characterized by reduced systemic levels of vascular endothelial growth factor and by epithelial-to-mesenchymal transition of the invasive trophoblast. Am J Obstet Gynecol 2011;204(5).