Original Article

Frequency of Morbidly Adherent Placenta in Previous Scar

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ABSTRACT

OBJECTIVE: To assess the frequency of different types of morbidly adherent placenta in woman presenting history of previous scar.

METHODOLOGY: This descriptive cross-sectional study was conducted from December 2016 to June 2017 at Department of Obstetrics & Gynaecology, Indus Medical College Hospital Tando Muhammad Khan & Liaquat University of Medical & Health Sciences Jamshoro. A total of 205 patients with age women between 15 to 49 years, with having pregnancy of 04 to 36 weeks, alive singleton fetus, history of previous surgery like Caesarean Section, myomectomy, hysterotomy and associated placenta praevia were included. Patients with history of pelvic inflammatory disease (PID), dilatation and curettage (D&C) and intrauterine contraceptive device (IUCD) insertion, placenta abruption and primigravida were excluded. Mean±SD, frequencies & percentages were calculated. Chi-square test was used as a test of significance with a P value ≤0.05.

RESULTS: Around 45.4% (n=93) women had scar due to previous caesarean section. Morbidly adherent placenta was found positive among 9.76% (n=20) women. Frequency of Placenta accreta vera was 1.5% (n = 3), Placenta increta was 6.76% (n = 14) and Placenta percreta was 1.5% (n=3). Stratified analysis found that risk of Morbidly adherent placenta (MAP) elevated with the increasing age, second trimester, high parity, having previous caesarean section & shorter the duration of scar.

CONCLUSION: Morbidly adherent placenta is not a very uncommon condition. Its frequency is ten times more among women who had previous history of scar. Hence, the previous scared uterus and shorter duration increased further risk for all three types of morbidly adherent placenta.

KEY WORDS: Morbidly adherent placenta, Previous Scar.

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INTRODUCTION

Morbidly adherent placenta (MAP) is defined as the abnormal adherence of placenta either fully or partially to the uterine wall. Normally the placenta is adherent to decidua basalis layer of the endometrium[1]. In patients with abnormal placentation; the placenta is firmly bound to the defective deciduae basalis layer or myometrium. It is a life-threatening complication of pregnancy which is directly associated with high morbidly and mortality rate because of potential severe haemorrhage at the time of delivery[2]. MAP associated with significant maternal morbidity (7%-10% cases)[3], i-e; massive postpartum haemorrhage (PPH), disseminated intravascular coagulation (DIC), hysterectomy, bladder and ureteric trauma, acute respiratory distress syndrome (ARDS) and acute tubular necrosis[4].

Incidence of all forms of adherent placenta has increased over the last two decades which is most likely as a result of increasing caesarean section (A 10 -fold rise has been reported during the past 50 years) [5]. The incidence rate of MAP varies between 1/210 to 1/2500 births[6]. In a local study the incidence of MAP turned out to be 1.83/1000 deliveries[7]. Two most significant risk factors of MAP include; placenta praevia (83%) and previous caesarean section (83%) [4], while other important risk factors are myomectomy and D&C (16.6%)[8].

MAP is classified according to the degree of adherence and by the amount of placental involvement into 3 types. Of these; the frequency of placenta accreta is 75%, placenta increta 17% & that of placenta percereta is reported as 7%[9]. Patients usually present with abdominal pain, shock and haemorrhage. Morbidly adherent placenta is an obstetrics emergency, which causes increased risk of perinatal and maternal morbidity[9].

If the antenatal check-up is made properly, the adherence of placenta can have diagnosed at the earliest possible time[10,11]. The color Doppler Ultrasound has very high sensitivity and specificity in identifying MAP[12]. The conservative treatment options include methotrexate and if placenta is not possible to remove from uterine wall then second option is cesarean hysterectomy[13] which can lead to sever maternal consequences like haemorrhage, D&C, hysterectomy, urinary bladder and ureteric trauma[8].

The rate of caesarean section, myomectomy & hysterectomy are increasing in Pakistan like most other countries. Their long term maternal complications are rarely studied. One such severe complication is MAP. If women having MAP are early identified during antenatal period much of morbidity can be avoided with proper management. Though some studies are conducted to assess the magnitude of burden of MAP but upon through search no any study was found in local rural population. This provides a justification for this study. The frequency of MAP is found high then this study will recommend screening of all pregnant women through Doppler Ultrasound. This will help to decreases the maternal morbidity and mortality. Rationale of this study was that morbidly adherent placenta is a significant obstetric challenge and also a leading cause of PPH that indicates the gravid hysterectomy which place the pivotal role to asses the frequency of different types of morbidly adherent placenta in woman presenting history of previous scar at tertiary care hospital.

METHODOLOGY

This descriptive cross-sectional study was conducted from December 2016 to June 2017 at Gynaecology & Obstetric, Indus Medical College Hospital Tando Muhammad Khan & Liaquat University of Medical & Health Sciences Jamshoro. The Sample size of 438 women was calculated by using sample size Calculator taking confidence level of 95% and anticipated proportion 7%[9], absolute precision required 3.5, and sample size turned out to 205 pregnant ladies with history of previous scar.

Women of reproductive age (15-49 years), Parity ≥1 to 3, having pregnancy between 4 weeks to 36 weeks, as detected by Ultrasound and last menstrual period (LMP), alive singleton fetus and women having history of previous surgery like C/ Section, myomectomy, hystertomy and associated placenta praevia were included through non-probability consecutive sampling.

All primigravida, Placenta abruption (defined as: Separation of the placenta from its attachment to the uterus wall before delivery having history of bleeding per vagina and confirmed through Ultrasound), History of PID, D&C and or IUCD insertion and unwillingness by the patient or the husband were excluded from the study. Pregnant patients presented to the obstetrical out patient department for antenatal visit were enrolled after taking valid written consent. Investigation as Doppler ultrasound was done. Study variables were taken on pre-designed proforma by the investigator. Indication for scar (previous surgery like Caesarean section, myomectomy, hystertomy), duration of scar was also noted. The detection of morbidly adherent placenta & type of MAP (placenta accreta vera, placenta increta, placenta percereta) was done by Doppler Ultra Sound and noted in proforma. The data was entered and analyzed on SPSS Version 21. Descriptive analysis was performed by calculating mean & standard deviation (Mean±SD), categorical variables analysis was done with application of chi-square taking the P value ≤ 0.05 as significant. The permission for data collection was taken from the ethical review committee of the institution.

RESULTS

The current study was undertaken on 205 pregnant women who had the history of having previous scar to assess the frequency of morbidly adherent placenta (MAP). The duration of scar was noted in this study that women presenting with shorter history of scar i-e; up to 2 years were 22.4% (n = 46), those who had 3-5 years scar were 34.1% (n = 70), further having durations of 6-10 years were 37.6% (n = 77) while the longest duration of having scar was >11 years among 5.9% (n = 12) patients (**Table I**). Primary outcome variable of the study was detections of morbidly adherent placenta among patient presenting with previous scar which was found positive among 9.76% (n = 20) women (**Table II**). Further it was also noted that frequency of Placenta accreta vera was 1.5% (n = 3), Placenta increta was 6.82% (n=14) and Placenta percereta was 1.5% (n=3) (**Figure I**). Caesarean section as a reason of scar in uterus was most common and statistically significant reason associated with all three types of morbidly adherent placenta (Placenta accereta veram, Placenta incereta & Placenta percereta), (P values = 0.037, 0.667, 0.001 & 0.012 respectively; **Table III**). Shorter duration of up to 2 years was more commonly associated with all three types of morbidly adherent placenta (Placenta accereta veram, Placenta incereta & Placenta percereta) and the risk of MAP decreased with long duration of scars. However; the findings lacked statistical significance. (P values = 0.178, 0.221, 0.401 & 0.132 respectively; **Table IV**)

TABLE I:
DISTRIBUTION OF DURATION OF SCAR (YEARS)

Duration of scar (yrs)	Frequency	Percent
Up to 2	46	22.4
3-5	70	34.1
6-10	77	37.6
>11	12	5.9
Total	205	100
Duration of scar Mean (± SD) 5.04 ± 2.92		

FIGURE I: FREQUENCY OF MORBIDLY ADHERENT PLACENTA AMONG PATIENT PRESENTING WITH PREVIOUS SCAR (n=205)

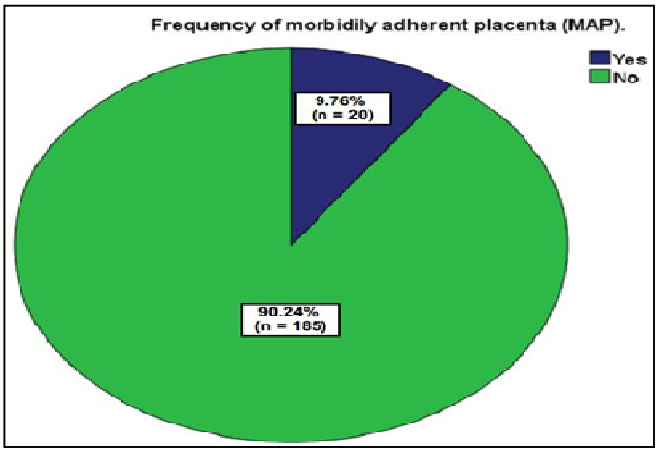

TABLE II:

Type of MAP	Frequency	Percent
Placenta accreta vera	3	1.5
Placenta increta	14	6.86
Placenta percereta	3	1.5
Total	**20**	**9.76**

DISCUSSION

Morbidly adherent placenta is said to be placenta previa, which is attachment of placental tissue fully or partially to the lower uterine segment instead of its normal site i-e; decidua basilis, and these cases are not frequently reported in Pakistan (prevalence less than 1%). Morbidly adherent placenta (MAP) is

TABLE III: STRATIFICATION OF TYPES OF MAP WITH REGARDS TO REASON OF SCAR (n = 205)

Type of MAP		Reason for scar			Total	P value
		C/Section	Myomectomy	Hysterotomy		
Placenta accreta vera	Number	2	0	1	3	0.037
	Percent	66.70%	0.00%	33.30%	100.00%	
Placenta increta	Number	6	3	5	14	0.667
	Percent	42.90%	21.40%	35.70%	100.00%	
Placenta percereta	Number	2	1	0	3	0.001
	Percent	66.70%	33.30%	0.00%	100.00%	
NIL	Number	83	62	40	185	0.012
	Percent	44.90%	33.50%	21.60%	100.00%	
	Number	93	66	46	205	
Total	Percent	45.40%	32.20%	22.40%	100.00%	

TABLE IV: STRATIFICATION OF TYPES OF MAP WITH REGARDS TO DURATION OF SCAR (n = 205)

Type of MAP		Duration of scar (Years)				Total	P value
		Upto 2	03-May	06-Oct	>11		
Placenta accreta vera	Number	1	1	1	0	3	0.178
	Percent	33.30%	33.30%	33.30%	0.00%	100.00%	
Placenta increta	Number	7	3	4	0	14	0.221
	Percent	50.00%	21.40%	28.60%	0.00%	100.00%	
Placenta percereta	Number	1	1	0	1	3	0.401
	Percent	33.30%	33.30%	0.00%	33.30%	100.00%	
NIL	Number	37	65	72	11	185	0.132
	Percent	20.00%	35.10%	38.90%	5.90%	100.00%	
Total	Number	46	70	77	12	205	
	Percent	22.40%	34.10%	37.60%	5.90%	100.00%	

associated with much higher rates of maternal morbidity and mortality as a result of hemorrhage or complication of cesarean delivery[8,9]. Studies have documented that there is a definite increase in incidence of MAP all over the world which is thought to be as a result of increased number of caesarean sections[4-8,11-15]. This was pointed out in the current study that nearly half of all women i-e; 45.4% (n = 93) had presented with scar, which was due to previous caesarean section. Among these women all three types of MAP were more frequent than those women who had scar from Myomectomy or hystertomy. Other reasons in the current study were having myomectomy in 32.2% (n=66) and hysterotomy in 22.4% (n=46) women. According to Usta IM 2005[16] & Nisenblat V 2006[17], there is a risk of 14 % in women of placenta previa with previous caesarean section and that risk is also increasing with the number of previous caesareans sections, History of curettage and grand multi-parity are also quoted in literature as other important risk factors[12,18]. It is interesting to denote that, the shorter the duration of up to 2 years of scar was associated with the higher frequency of MAP (all three types). It was statistically not significant (P values = 0.178, 0.221 & 0.401 respectively). This finding is not mentioned by the other studies except the current study. The only possible justification of this may that in fresher scars the granulation tissue and scar itself may be a feasible or attractive site for MAP while the older scars may have changed physiologically so much that it would not favor the development of MAP and can be further examined. According to literature, the earliest gestation at which placenta accreta had been diagnosed by ultrasound was 9 weeks in a case of scar pregnancy[18-20]. Vijayasree M 2018[21] in the study, revealed sonography was only 33-percent sensitive for detecting placenta accrete. The surgical approach consists of immediate cesarean hysterectomy, avoiding placental removal during operation[22,23]. Otherwise surgical management is associated with significant risk of catastrophic bleeding from abundant neovascularization and rich collaterals beyond the efficacy of hemostasis available using current techniques[24]. There are also indications that some authors have recognized the need for early diagnosis and this would enable early counseling and intervention, preventing complications or loss of the uterus while the management of high risk patients is a particular concern[25-27]. Thus, early preoperative diagnosis in the suspected women is the key to save the women's life, adherent placenta should be suspected even in the second trimester in women with known high risk factors who are undergoing medical termination of pregnancy or suction evacuation.

CONCLUSION

Morbidly adherent placenta is not a very uncommon condition. Its frequency is ten times more among women who had previous history of scar. Hence, the previous scared uterus and shorter duration increased further risk for all three types of morbidly adherent placenta.

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