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RESEARCH ARTICLE

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Frequency of Morbidly Adherent Placenta in Previous Scarred Uterus

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ABSTRACT

Objective: To determine the frequency of morbidly adherent placenta in previous scarred uterus in tertiary care hospital.

Methods

Study Design: Cross sectional Study

Setting: Department of Obstetrics & Gynaecology- Unit- III , Liaquat University Hospital Hyderabad.

Sample Size: By using prevalence of placenta increta P= 13% margin of error(d)= 6% the calculated sample size is 121 patients with the help of WHO software for sample size calculation taking 95% confidence interval.

Sample Technique: Non- probability consecutive sampling.

Inclusion Criteria

1. Patient of age between 20-40 years irrespective of gestation age or parity.
2. Patient with previous cesarean section.
3. Patient with previous myomectomy on the basis of history.
4. Patient with previous hysterotomy on the basis of history.

Exclusion Criteria

1. All patient undergoing vaginal deliveries
2. Primigravida with placenta previa

Subject and Methods: A total of 121 patients with previous caesarean section, myomectomy and hysterectomy on the basis of history were included in this study. The outcome was assessed by observing morbidly adherent placenta during cesarean section , by antenatal record of patient's ultrasound for fetal wellbeing and doppler ultrasound. All information was kept in pre-designed proforma and was analyzed through SPSS version 21. Frequency and percentage computed for qualitative variable like previous uterine surgery, morbidity adherence placenta, placenta increta, placenta accreta & placenta percreta. Mean ±SD was calculated for qualitative variable i.e age, gestational age, gravida, and para. The stratification was done on age, gestational age, gravida, para and previous uterine surgery to see the effect of these modifiers on outcome using Chi-square test . P≤0.05 was considered as significant.

Results: The average age of the patients was 30.26±4.66 years. Frequency of morbidly adherent placenta (MAP) in previous scarred uterus was observed in 9.09% (11/121) women. Out of 11 MAP cases 6(54.55%) had accreta, 3(27.27%) percreta and 2(18.18%) had increta.

Conclusion: Antenatal care needs to be improved and morbid adherence of placenta should be diagnosed at the earliest possible time. Caesarean section should be minimized to reduce the risk morbidly adherent placenta.

ARTICLE HISTORY

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KEYWORDS

Morbidly Adherent Placenta, Placenta Accreta, Placenta Increta, Placenta Percreta

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Introduction

Morbidly adherent placenta (MAP) or abnormally invasive placenta (AIP) is a potential life-threatening emergency that might lead to significant morbidity and mortality [1]. It occurs in 1.32-3.27/1000 pregnancies and the incidence has been rising particularly with the increasing trend of caesarean sections [2]. AIP is the first trimester rare and more challenging due to difficulty in diagnosis [3]. Pathophysiology for this abnormal placental development involves deficient deciduas with absence of the fibrinoid layer limiting penetration of trophoblastic villi beyond decidua into the myometrium [4].

Depending on varying degrees of attachment of anchoring placental into the uterus the morbidly adherent placenta is divided in three types, in placenta accreta there is invasion of decidua basalis and superficial penetration into the myometrium, placenta increta there is deep penetration into the myometrium. Placenta percreta invades the myometrium upto the serosa and may even involve adjacent organs like urinary bladder, pelvic peritoneum and bowel. Various case reports of uterine rupture due to placenta accrete are available [5]. Predisposing factors for placenta accrete are previous uterine damage due to prior uterine surgery leading to scarred uterus as caesarean section, myomectomy, uterine perforation and placenta previa. Women with placenta previa have high chances of MAP if placenta is anterior and they have previously been delivered by caesarean section, there is a close relationship between morbidly adherent placenta and caesarean section which shows an increased incidence with increasing number of prior caesarean section.

Diagnostic modalities include grayscale ultrasound colour Doppler and three dimensional power Doppler imaging to identify low resistance flow, lacunar flow pattern and absence or thinning of bladder myometrial interface [6]. Studies found ultrasound and MRI to have comparable detection rates though MRI is superior in detecting depth of infiltration [7]. Main MRI features are uterine bulge, heterogenous signal intensity within placenta and dark intra-placental bands on T2 weights imaging. Role of radiology extends beyond diagnosis. Interventional radiology has a significant role in the prophylaxis and management of severe obstetric haemorrhage. Planned management by multidisciplinary team of experienced consultant obstetrician, senior anesthesiologist and haematologist, yield better outcome for these patients [8].

Methodology

Study Design: Cross sectional Study

Duration: One year: 01-02-2018 to 31-01-2019.

Setting: Department of Obstetrics & Gynaecology- Unit- III, Liaquat University Hospital Hyderabad.

Sample Size: By using prevalence of placenta increta P= 13% margin of error(d)= 6% the calculated sample size is 121 patients with the help of WHO software for sample size calculation taking 95% confidence interval.

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Exclusion Criteria

3. All patient undergoing vaginal deliveries
4. Primigravida with placenta previa

Results

Table 1: Frequency of type morbidly adherent placenta in previous scarred uterus by gravida n=121

Type of MAP	Gravida		Chi-Square	P-Value
	2-4 n=77	>4 n=77		
Accreta	3(3.9%)	3(6.8%)	0.507	0.476
Increta	1(1.3%)	1(2.3%)	0.163	0.686
Percreta	2(2.6%)	1(2.3%)	0.012	0.912

Table 2: Frequency of type morbidly adherent placenta in previous scarred uterus by gestational age n=121

Type of MAP	Gestational Age		Chi-Square	P-Value
	≥36 n=90	>36 n=31		
Accreta	6 (6.7%)	0 (0%)	2.17	0.140
Increta	2 (2.2%)	0 (0%)	0.700	0.403
Percreta	3 (3.3%)	0 (0%)	1.06	0.303

Table 3: Frequency of type morbidly adherent placenta in previous scarred uterus by Maternal age n=121

Age Groups (Years)	Maternal Age		Total	P-Value
	≥36 n=90	>36 n=31		
≤25	2 (7.7%)	24 (92.3%)	26	0.234
26-30	1 (2.5%)	39 (97.5%)	40	
31-35	6 (15%)	34 (85%)	40	
36-40	2 (13.3%)	13 (86.7%)	15	

Table 4: Frequency of type morbidly adherent placenta in previous scarred uterus by Parity n=121

Parity	Morbidly Adherent Placenta		Total	P-Value
	Yes	No		
Primiparous	1 (3.2%)	30 (96.8%)	31	0.188
Multiparous	10 (11.1%)	80 (88.9%)	90	

Table 5: Frequency of type morbidly adherent placenta n=121

Type of MAP	Age Groups (Years)				Chi-Square	P-Value
	≤25 n=26	26-30 n=40	31-35 n=40	36-40 n=15		
Accreta	1 (3.8%)	0	4 (10%)	1 (6.7%)	4.40	0.221
Increta	0	0	2 (5%)	0	4.12	0.249
Percreta	1 (3.8%)	1 (2.5%)	0	1 (6.7%)	2.01	0.511

Table 6: Descriptive statistics morbidly adherent placenta n=121

Variable	Mean	Std. Deviation	95% Confidence Interval for Mean	
			Lower Bound	Upper Bound
Age (Years)	30.26	4.66	29.42	31.10
Gestational Age (Weeks)	35.45	2.26	35.05	35.86
Gravidity	4.07	1.58	3.79	4.36
Parity	2.17	0.88	2.01	2.33

Discussion

MAP is the devastating pregnancy complication [9]. In the placenta percreta the bladder is most frequently involved extra uterine organ. Placenta percreta that invades the urinary bladder is associated with a substantial morbidity and mortality of up to 10% [10]. Morbidly adherent placenta usually occurs in subsequent pregnancies, explaining the older age group and higher gravidity of the patients [11,12]. The important risk factors are previous caesarean section delivery, placenta previa, multiparity and advanced maternal age [13]. 22% of the woman have concomitant placenta previa [14,15]. The frequency of morbidly adherent placenta was observed 9.09% in previous scarred uterus. It is similar results, which was reported in study. In 100 cases of previously scared uterus were taken in which MAP frequency was 6% [16]. A study reported recently an abnormal invasive placenta as a result of uterine scarring in a patient with Asherman 's syndrome [17]. The awareness of the possible development of MAP is important in pregnants.

In the study of 11 MAP had 54.55% accreta, 27.27% percreta and 18.18% increta. Placenta previa was diagnosed 63% of the patients. Placenta accreta was found in 40%, 37% was placenta increta and 23% was placenta percreta [18-20].

In this study total of 23 cases were identify of morbidly adherent placenta. The frequency of morbidly adherent placenta was 1 in 273.56 pregnancies (0.36%) and 1 in 118.82 caesarean section (0.84%). Placenta accreta was diagnosed 69.6% that was majority of the patients, others 13% cases were placenta increta and 17.4% was placenta percreta [21]. The maternal mortality reported for the MAP 7 to 10% worldwide [22]. The morbidity of maternal was reported 40% and 93% of mortality was in women with morbidly adherent placenta [23]. In the risk of substantial morbidity (including coagulopathy, severe haemorrhage, infection, sepsis, ureteral injury, need for blood transfusion / hysterectomy) and mortality, uterus-preserving treatment may have a role in carefully selected patients who desire future fertility [24]. Several adjuvant techniques have been proposed alongside surgery. The methotrexate treatment and/or placement of preoperative internal iliac artery balloon catheters for occlusion and /or arterial embolization to reduce intraoperative blood loss and transfusion requirements [25]. There is sufficient literature for the lacking efficacy of methotrexate, Dasari et al [26].

The successful treatment with methotrexate is reported in primiparous who was diagnosed in the postpartum period and had no other comorbidities. Conservative treatment is successful and gradually it's result of resorption the placenta or delayed delivery of the placenta [27]. This is challenge the management of patient's complication with MAP. Patients are more likely to develop massive PPH, and need for intra operative invasive intervention (balloon tamponade, uterine artery ligation/ embolisation & hysterectomy) as compared with those a normal adherent placenta [28].

Conclusion

Morbid adherent placenta should be diagnosed at the earliest possible time in antenatal period. Frequency of morbidly adherent placenta (MAP) in previous scarred uterus was observed in 9.09% women. In the study 54.55% had accreta, 27.27% percreta and 18.18% had increta. Caesarean section scar remained the main risk factor for morbidly adherent placenta.

Measures should be taken to minimize the caesarean section rate, especially in order to prevent the subsequent morbidity consequent to a morbidly adherent placenta in particular, massive postpartum haemorrhage and hysterectomy.

Authors Contribution

NR,conceived, designed & data collection of manuscript

FS,did statistical analysis & editing and manuscript writing

SF, did review and final approval of manuscript

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