



ORIGINAL RESEARCH PAPER

Obstetrics and Gynaecology

A STUDY ON PLACENTA ACCRETA - RISK FACTORS AND FETO MATERNAL OUTCOME IN A TERTIARY INSTITUTION IN KERALA

KEY WORDS: CS – Caesarean section.

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ABSTRACT

Placenta accreta is a fatal obstetric condition and the incidence is increasing due to increasing CS rate. A prospective study was conducted from 1/01/2014 to 1/08/2018 in obstetrics and gynaecology department of Govt, Medical college Kozhikode, Kerala . Aim: To find out the incidence , risk factors and feto maternal outcome in placenta accreta. OUTCOME: There were 71,647 deliveries during the study period .Incidence of placenta accrete was 1 in 895. Risk factors were Previous 1 CS (52%) and Previous 2 CS (43.7%) and primary CS 1 (4.3%). USG and MRI were used to diagnose placenta accreta. .Classical CS with hysterectomy was done in 50 (62.5%)cases and LSCS with hysterectomy in 30(37.5%) cases. 10 patients (12.5%) had bladder injury. Mean blood transfusion was of 5.4 pints. There was no maternal mortality.

INTRODUCTION

Morbidly adherent placenta is all or part of the placenta is adherent to uterine wall because of myometrial invasion by chorionic villi. It may be due to the primary deficiency or secondary damage to decidua basalis and Nitabuch's layer or due to upregulation of VEGF and angiopoietin-2 and downregulation of VEGF-Receptor and TIE-2. There are three grades according to depth of myometrial invasion. Placenta accreta (80%),Placenta increta (15%) and placenta percreta (5%). All three grades can cause PPH. It is a potentially life-threatening obstetric condition which requires a multidisciplinary approach to management. The incidence of placenta accreta has increased from 1 in 2,510 in 1980's to 1 in 731 births in 2015(15). It is most likely due to the increasing caesarean delivery rate. Diagnosis of placenta previa should be done before delivery. This can allow multidisciplinary planning in an attempt to minimize potential maternal or neonatal morbidity and mortality. Grayscale ultrasonography is sensitive enough and specific enough for the diagnosis of placenta accrete. Sensitivity is 100% and specificity is 72% if myometrial thickness is <5mm and placental lakes are seen(16) Magnetic resonance imaging may be helpful in suspected invasion.

The recommended management of suspected placenta accrete is planned preterm caesarean hysterectomy with the placenta left in situ.

Attempts at removal of the placenta are associated with significant haemorrhagic morbidity. There should be a multidisciplinary team approach and attention to the haemodynamic status. Although a planned delivery is the goal, a contingency plan for an emergency delivery should be developed for each patient Clinically, placenta accreta becomes problematic during delivery when the placenta does not completely separate from the uterus and is followed by massive obstetric haemorrhage , leading to disseminated intravascular coagulopathy; the need for hysterectomy; surgical injury to the ureters, bladder, bowel, or neurovascular structures; adult respiratory distress syndrome; acute transfusion reaction; electrolyte imbalance; and renal failure. The average blood loss at delivery in women with placenta accreta is 3,000–5,000 mL (2). As many as 90% of patients with placenta accreta require blood transfusion, and 40% require more than 10 units of packed red blood cells. Maternal mortality with placenta accreta has been reported to be as high as 7% (3). Maternal death may occur despite optimal planning, transfusion management, and surgical care. From a cohort of 39,244 women who underwent caesarean delivery, researchers identified 186 that had a caesarean hysterectomy performed (4). The most common indication was placenta accreta (38%).

INCIDENCE

The incidence of placenta accreta has increased and seems to parallel the increasing caesarean delivery rate. Researchers have reported the incidence of placenta accreta as 1 in 533 pregnancies for the period of 1982–2002 (5).This contrasts sharply with previous reports, which ranged from 1 in 4,027 pregnancies in the 1970s, increasing to 1 in 2,510 pregnancies in the 1980s (6, 7).

RISK FACTORS

Women at greatest risk of placenta accreta are those who have myometrial damage caused by a previous caesarean delivery with either anterior or posterior placenta previa overlying the uterine scar. The authors of one study found that in the presence of a placenta previa, the risk of placenta accreta was 3%, 11%, 40%, 61%, and 67% for the first, second, third, fourth, and fifth or greater repeat caesarean deliveries, respectively (8). Placenta previa without previous uterine surgery is associated with a 1–5% risk of placenta accreta. Besides advanced maternal age and multiparity, reported risk factors include any condition resulting in myometrial tissue damage followed by a secondary collagen repair, such as previous myomectomy, endometrial defects due to vigorous curettage resulting in Asherman syndrome (9), submucous leiomyomas, thermal ablation (10), and uterine artery embolization (11).

DIAGNOSIS

The diagnosis is usually established by ultrasonography and occasionally supplemented by magnetic resonance imaging (MRI).

ULTRASONOGRAPHY

Transvaginal and transabdominal ultrasonography are complementary diagnostic techniques and should be used as needed. TVS is safe for patients with placenta previa and allows a more complete examination of the lower uterine segment. A normal placental attachment site is characterized by a hypo echoic boundary between the placenta and the bladder. The ultrasonographic features suggestive of placenta accreta include irregularly shaped placental lacunae (vascular spaces) within the placenta, thinning of the myometrium overlying the placenta, loss of the retroplacental "clear space," protrusion of the placenta into the bladder, increased vascularity of the uterine serosa–bladder interface, and turbulent blood flow through the lacunae on Doppler ultrasonography (12, 13). The presence and increasing number of lacunae within the placenta at 15–20 weeks of gestation have been shown to be the most predictive ultrasonographic signs of placenta accreta, with a sensitivity of 79% and a positive predictive value of 92% (14). These lacunae may result in the placenta having a "moth-eaten" or "Swiss cheese" appearance. Overall, grayscale ultrasonography is sufficient to diagnose placenta accreta, with a sensitivity of 77–87%, specificity of 96–98%, a positive predictive value of 65–93%, and a negative predictive value of 98 (13, 14). The use of power Doppler, colour Doppler, or three-dimensional imaging does not significantly improve the diagnostic sensitivity compared with that achieved by grayscale ultrasonography alone .

MRI

Magnetic resonance imaging is more costly than ultrasonography and requires both experience and expertise in the evaluation of abnormal placental invasion. MRI is considered an adjunctive modality and adds little to the diagnostic accuracy of ultrasonography. However, when there are ambiguous ultrasound findings or a suspicion of a posterior placenta accreta, with or without placenta previa, ultrasonography may be insufficient.

AIM OF THE STUDY

To find out the prevalence of placenta accreta , risk factors and the fetomaternal outcome.

A prospective study was conducted at the Institute of maternal and child health, Govt medical college, Kozhikode, Kerala for 4years and 8months from January 1st 2014 to august 31st 2018.

OUTCOME

Table 1. Prevalence of placenta accreta

Total no of deliveries	71,647
Total no of caesareans	26518(37.01%)
Primary CS	13,892(19.3%)
Repeat CS	12,626(17.64%)
Placenta praevia	598 (0.83%)
Placenta accreta	80(11%)

The prevalence of Placenta praevia was 598 (8.3/1000 deliveries) and Placenta accrete was 80 (1.1/1000 deliveries). The incidence in Canada was 1 in 695 deliveries in 2009 to 2010 (Meharbadi A Liu etal , Contribution of placenta accrete to PPH Obstet Gynaecol2015;125:814)

Risk factors were Previous 1 CS (52%) and Previous 2 CS (43.7%) and previous 3 CS was 2.5%). Only one case was a primary CS

Table 2. Risk factors

Risk factor	No	%
Previous 1 CS	42	52.5%
Previous 2 CS	35	43.7%
Previous 3 CS	2	2.5%
Primary CS	1	1.25%

Mean age of the patients was 29 years and mean gestational age at which surgery was done was 34 weeks. ACOG (2017c) recommends & justifies elective caesarean without fetal lung maturity testing after 34 completed weeks of gestation.

Table 3 Variables and their mean

	Maternal age(years)	gravidity	Parity	Gestational age at delivery(wks)
Mean	29.9	3.1	1.6	34.6
Range	20 - 45	1 -8	3	15 - 39

The main diagnostic modality was ultrasound. All patients had an ultrasound done. Placenta accreta was confirmed in 34(42.5%) and Placenta praevia without accreta in 46(57.5%). MRI was done in 54 (67.5%) and accreta was diagnosed in 47 (87%) with MRI. Both MRI and usg could not diagnose accreta in 7(12.9%) cases 51% of the patients were asymptomatic and was admitted with an ultrasound or MRI diagnosis. 30% presented with antepartum haemorrhage.

Table 4 Mode of presentation

Presentation	N= 80
USG and MRI (asymptomatic)	51(63.5%)
APH	24(30%)
Shock	2(2.5%)
Hemoperitoneum	1(1.25%)
PROM	1(1.25%)
Preterm labour	1(1.25%)

67.5% of the patients had an elective surgery and 61.2% had classical caesarean hysterectomy.

Table 5. Type of surgery

Type of surgery	Classical CS with obstetric hysterectomy	LSCS with obstetric hystectomy	Total
Emergency	19(23.75%)	7(8.74%)	26(32.5%)
Elective	30(37.5%)	24(30%)	54(67.5%)
Total	49(61.2%)	31(38.7%)	

Histopathology of the specimen after hysterectomy showed that 75% had placenta accrete, 8.75% had increta and 16.5% had percreta.

Table 6. Histopathology

Histopathology	No of patients
Placenta acreta	60(75%)
Placenta increta	7(8.75%)
Placenta percreta	13(16.5%)

Main complications were bladder injury, postpartum haemorrhage and relaparotomy and urinary fistula.

Table 7. Complications

Bladder injury	10(12.5%)
PPH and relaparotomy	2(2.5%)
Urinary fistula	1(1.25%)

Almost all patients required massive blood transfusion with a mean of 5.4 units. The mean red cell use was 10± 9 units and median 6.5 units according to Stotler etal Transfusion (2011;51:2627)

Table 8. Blood transfusion

No. of units of blood transfused	No. of patients
>20	2(2.5%)
10 - 20	7(8.75%)
5 - 10	22 (27.5%)
<5	49 (61.25%)
Mean	5.4

Table 9. Neonatal outcome

Baby wt in Kg	Total	Alive	FSB	NND
>2.5	46(57.5%)	45(97.8%)	1(2.1%)	0
<2.5	34(42.5%)	31(91.1%)	2(5.8%)	1(2.9%)

Perinatal mortality was 52.63/1000live births There was no maternal mortality in the present study.

Majority of the patients had a hospital stay of 7 – 14 days and the mean duration of the hospital stay was 10.5 days

Table 10. Duration of the hospital stay

No. of days	N=80
>14 days	16(20%)
7 – 14 days	62 (77.5%)
< 7 days	2 (2.5%)
Mean	10.5

DISCUSSION

Diagnosis of placenta accreta before delivery allows multidisciplinary planning to minimize potential maternal or neonatal morbidity and mortality. Although a planned delivery is the goal, a plan for an emergency delivery and massive blood transfusion should be developed for each patient. Caesarean hysterectomy at 34 completed weeks based on imaging findings is the most reasonable and safest approach. Uterine conservation may be attempted only in very rare situations with extensive counselling regarding risks.

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