

PREDICTIVE FACTORS OF PLACENTAL ADHESION ANOMALIES : ABOUT 24 OBSERVATIONS OF PLACENTA ACCRETA FROM CHU IBN ROCHD OF CASABLANCA

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Abstract :-

Placenta accreta is responsible for a significant increase in maternal morbidity and mortality at delivery, due to the risk of massive postpartum haemorrhage leading to maternal death. The identification of key risk factors for placental adhesion defects is an important step in the diagnostic process prior to obstetric ultrasound or abdominal-pelvic Magnetic Resonance Imaging. In this study, we will investigate the main risk factors found in pregnant women with placenta accreta.

Methods : We conducted a retrospective, single-centre, descriptive study of on the files of patients followed for suspected placenta accreta at the Centre University Hospital IBN ROCHD Casablanca (Morocco) from March 2016 to October 2019. The diagnosis of placental adhesion anomalies was made intraoperatively from the moment when complete or partial manual delivery was impossible consecutive to the absence of a cleavage plane between part or all of the placenta and the uterus. Study variables included demographic, clinical and radiological characteristics

Results : The mean age of the study population was 36.06 ± 3.48 years. Of 35 patients with risk factors for placenta accreta, 24 had placenta accreta and 11 had placenta previa. The risk factors found in this series were previous caesarean section and placenta previa with adjusted odds ratios of 10.29; CI95% [3.23-41.79] and 3.72 CI95% [1.61-8.58] respectively.

Conclusion : Placental adhesion defects, although rare, are becoming increasingly common in the last decade, following the increase in the caesarean section rate. Better management requires research into the main risk factors and the performance of medical imaging examinations.

Keywords :- Predictive -factors -placental- adhesion- anomalies.

I. INTRODUCTION

Placental adhesion defects are defined as abnormal invasion of chorionic villi into the uterine wall [1]. Chorionic villi can invade the myometrium to varying degrees of depth, from the most superficial (placenta accreta) to the most profound (placenta increta). In some cases, chorionic villi may even cross the serosa or invade neighbouring organs, defining placenta percreta, the most dangerous situation [1,2].

Pathologically, placental adhesion defects are characterised by an absence of the decidua between the placenta and the myometrium, which may involve part or all of the myometrium [3].

The general term placenta accreta is classically used to describe placental adhesion defects, regardless of the degree of invasion of chorionic villi into the myometrium [4].

The aetiology of placenta accreta is poorly understood; however, an abnormality of the basement membrane secondary to the occurrence of an endometrial lesion could be the cause of placental invasion into the myometrium [5].

The incidence of placenta accreta, which is increasing, seems to be correlated with the rate of caesarean sections and has increased tenfold in 50 years. Miller et al report 1/2 510 births complicated by placenta accreta between 1985 and 1994 out of 155 670 deliveries. In another study covering the period 1982-2002, Wu et al. found an even higher incidence in their institution of 1 in 533 pregnancies.

Once placenta accreta occurs, it can be life-threatening for both mother and fetus. Massive haemorrhage at the time of delivery is an immediate clinical consequence of placenta accreta and is thus the most common indication for intra- or post-partum hysterectomy [6].

The risk of maternal mortality from placenta accreta is as high as 7%. Given the dangers associated with this condition, accurate prenatal diagnosis is essential [6].

The aim of our study is to evaluate the risk factors of patients who have favoured the occurrence of placenta accreta at the CHU IBN ROCHD of CASABLANCA.

II. Materials and Methods

The present study is retrospective, mono-centric and descriptive having focused on the records of patients followed for suspected placenta accreta at the CHU IBN ROCHD of Casablanca (Morocco) during a period of 56 months, from March 2016 to October 2019.

The high-risk population in our study is composed of any pregnant woman referred for abdomino-pelvic MRI prescribed for suspected placenta accreta, based on clinical and ultrasound elements during the study period. A total of 35 patient records were included in our study.

The diagnosis of placenta accreta was based on clinical criteria found intraoperatively when complete or partial manual delivery was impossible due to the absence of a cleavage plane between part or all of the placenta and uterus [3].

Student's t-test and analysis of variance (ANOVA) were used to compare means.

The probability (p<0.05) was considered the threshold for statistical significance or (level of significance).

Statistical analyses for the present study were performed using SPSS version 22 software.

Our study was carried out in compliance with the confidentiality and standards of medical ethics after having received the authorisation of the head of the Radiology Department of the Ibn Rochd Hospital in Casablanca.

III. Results

III.1 General characteristics of the study population

During the period from March 2016 to October 2019, 35 patients presented with suspected placenta accreta, of which 24 cases of placenta accreta, i.e. 68.5%, were found in this study, compared with 11 cases, i.e. 31.4%, with non-accreta placenta (placenta previa), the general characteristics of which are given in Table 1.

Table I : General characteristics of the study population

Variables 24 (68, 57%)	Placenta accreta 11 (31, 43 %)	Unaccreta placenta
Average age (standard deviation)	36,3±3,51	35,4±3,50
Gestity	3,3±0,64	3,4 ±0,93
Parity	2,2±0,55	1,9±0,94
Previous caesarean section	24	11
Low inserted placenta	19 (63,3%)	11 (36,7%)
Treatment		
Removal	8	11
Hysterectomy	16	0

It is a common condition around the age of 35 years and occurs in patients with a history of caesarean section and in 2/3 of cases with placenta previa; the sanction seems to be a hysterectomy.

III.2 Incidence and type of placenta accreta

During the period of this study, 24 cases of placenta accreta were reported out of 26,454 births at the Ibn Rochd University Hospital, i.e. 1 case in 1000 births. According to the degree of invasion of chorionic villi within the myometrium, placenta accreta Vera was the form found in more than half of the cases while the percreta form was rare (Figure 1).

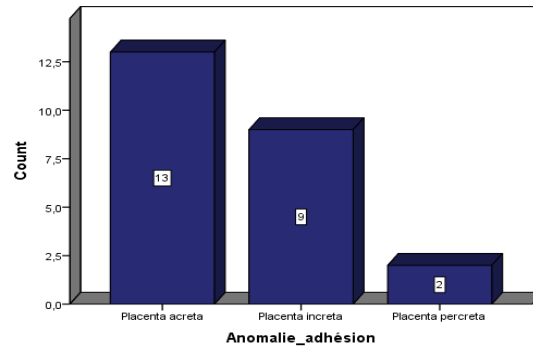


Figure 1: Distribution of placenta accreta according to the degree of invasion of the invasion of chorionic villi.

III.3 Risk factors associated with placenta accreta

Table II: Factors associated with placenta accreta in uni and multivariate analyses

Variables	Univariate analysis			Multivariate analysis		
	OR Crude	IC _{95%}	p	OR adjusted	IC _{95%}	p
Placenta praevia						
<i>presence and/or absence</i>	8,8	[3,33-23,37]	<0,01	10,29	[3,23-41,79]	<0,01*
History of caesarean section						
<i>presence and/or absence</i>	4,9	[2,40-10,11]	<0,01	3,72	[1,61-8,58]	0,02*
History of curettage						
<i>presence and/or absence</i>	0,4	[0,25-7,66]	0,56	4577180313	[0,0-]	>0,99
Myomectomy						
<i>presence and/or absence</i>	7,72	[0,00-]	>0,99	2,610	[0,00-]	0,99

In logistic regression, the presence of placenta previa and a history of caesarean section were predictors of placenta accreta.

IV. Discussion

Recent population-based studies have shown that placenta accreta remains undiagnosed before delivery in half to two thirds of cases [8].

Maternal mortality and morbidity are reduced when placenta accreta is diagnosed antenatally in women with risk factors for placental adhesion defects. If not recognised prior to delivery, abnormal placentation can lead to catastrophic perinatal haemorrhage and accounts for between one third and one half of emergency peripartum hysterectomies [8-11].

Thus the identification of predictive factors is an important step in the diagnosis of placenta accreta which will subsequently require the use of medical imaging techniques including ultrasound or abdominal-pelvic MRI.

A total of 26,454 births were registered at the maternity ward of CHU Ibn Rochd during the period of this study. Among these births, the number of cases of placental adhesion anomaly was 24, i.e. almost 1 case of placenta accreta per 1000 births.

Our results are consistent with the literature and with those of Miller D et al, Courbière B et al who also found an incidence of 1 case per 1000 births [12,13].

Placenta previa being a major risk factor in the etiopathogenesis of placenta accreta; Wu S et al in their study entitled "Abnormal placentation: a 20-year analysis" described a 50-fold increased risk of placenta accreta in case of placenta previa [15].

In our series, placenta previa was found in 19 (79.16%) out of 24 pregnant women with placenta accreta. These results are close to those of Maurea S et al and Miller D et al, who found it in all the pregnancies with placenta accreta included in their study and in 89% of the pregnancies respectively [7,12].

Miller D et al, showed that placenta accreta occurred in 55 out of 590 (9.3%) women with placenta previa compared to 7 out of 155,080 (1/22,154) without placenta previa [12].

Our series shows that among the risk factors associated with placenta accreta in uni and multivariate analysis, placenta previa was a major factor involved in the occurrence of placental adhesion defect in the pregnant women in this study in the sense that a pregnant woman with placenta previa had a 10-fold risk of developing placenta accreta (adjusted Odds Ratio: 10.29; CI95% [3.23-41.79])

These results are consistent with the literature which states that a pregnant woman with placenta previa has an increased risk of developing placenta accreta. Thus, whatever the age of a pregnant woman with a low inserted placenta beyond 24 weeks of amenorrhoea, signs of placental adhesion anomalies must be carefully sought on ultrasound, which is an examination that allows this pathology to be diagnosed antenatally, either suprapubic or endovaginally.

The search for the diagnosis of placental adhesion anomaly will allow, once the diagnosis has been made, to avoid massive peripartum haemorrhages and also a multidisciplinary approach in the case of placenta accreta with damage to neighbouring organs.

In this study, previous caesarean section was a major risk factor in the occurrence of placental adhesion defect with an adjusted Od ratio of 3,72 CI95% [1.61-8.58]). It was found in all pregnant women with placenta accreta with extremes of one and four caesarean sections, a mean number of caesarean sections of 2.08±0.41.

In 2007, Kayem G et al in Port Royal, France [16]; in their study of 55 cases on Historical comparison of two types of management of placenta accreta: radical versus conservative; they found a history of caesarean section in 50% of cases.

In 2003, Courbière B et al in Marseille, France [17], in their study entitled conservative treatment of placenta accreta, found at least one previous caesarean section in 53.84% of cases.

Thus our results are in agreement with the results of Kayem G and Courbière B as well as with the data in the literature.

Many studies have shown that the association of placenta previa and scarred uterus is a major risk of placenta accreta [18].

In our series, 19 of 24 patients (79.16%) had placenta previa associated with a scar uterus following a previous caesarean section.

Miller DA et al showed that the incidence of placenta accreta increased from 24% when placenta previa was associated with a uni-scar uterus to 67% for a quadricatric uterus [12].

In 2007, Oppenheimer L et al in Ottawa, Canada [18]; showed in their study on the Diagnosis and Management of Placenta previa that the risk of placenta accreta in the presence of a placenta previa in a woman who has had a previous caesarean section is 25% for women who have had one previous caesarean section and more than 40% for those who have had two.

In 1992 Finberg H and Williams J in Phoenix, Arizona, USA [19] in their study Placenta accreta: Prospective ultrasound diagnosis in patients with placenta previa and previous caesarean section; showed an increased risk of placenta accreta of 67% in patients with placenta previa and previous caesarean section.

Thus our results are consistent with those of Miller et al, Lawrence et al and Finberg H and Williams J.

In other studies placenta accreta has been found in patients without a history of caesarean section or placenta previa but with a risk factor of endometrial damage, a risk factor that should not be overlooked. In our series all patients had at least one risk factor. These proportions are equivalent to those found in the study by Kayem G et al who also found at least one risk factor in 95 [16].

Conclusion

By way of conclusion, we say that placental adhesion defects, although rare, are becoming more and more frequent in the last ten years, following the increase in the rate of caesarean sections. They are related to the main risk factors such as placenta previa and uterine scars including a history of caesarean section.

Thus, in a pregnant woman with a low-lying placenta inserted beyond 24 weeks of amenorrhoea and a history of uterine scarring, in particular a caesarean section, curettage or myomectomy, signs of placental adhesion anomalies must be carefully sought on ultrasound, either suprapubic or endovaginal, and on abdominal-pelvic MRI.

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