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CESAREAN SECTION AND PLACENTA PREVIA- CAUSATION OR JUST ASSOCIATION

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Abstract

Background: Placenta previa is a severe obstetrical complication defined by a low localized placenta wich can cover the internal cervical os leading to serious consequences both for mother and fetus. This condition has significantly higher incidence in women with a cicatriceal uterus.

Material and method: A retrospective cohort study was performed in two university hospitals between 2005 and 2015. Both intact and cicatriceal uterus cases were included. Risk of appearence of placenta previa was estimated by logistic regression.

Results : Of 42301 birth, 194 cases of placenta previa were analyzed. Incidence of placenta praevia was 0.45%. Medium rate of C-section deliveries was 21.66 %. Increased incidence of placenta previa was observed in women between 31- 40 years, high gestation and parity, 28.16% of all cases were primiparas. Over 55% of cases were finished before 37th week of gestation. 18.03% represented a major emergency. In 8 patients hemostatic hysterectomy was performed in the postpartum period: 4 of them had cicatriceal uterus and 4 of them had intact uterus. Relative risk (RR) of a hemostatic emergency hysterectomy was 9.5 in our study.

Conclusion: Detected incidence of placenta previa is similar to the data found in medical literature. Significantly increased risk for haemostatic postpartum hysterectomy was detected in patients with cicatriceal uterus and placenta previa. Rigorous selection of caesarian section indication is recommended to decrease the incidence of a possible cicatriceal uterus and placenta previa association. Also early diagnosis of low lying placenta on the anterior uterine wall in patients with cicatriceal uterus and prevention of postpartum bleeding due to abnormal placental insertion are recommended.

Rezumat: Secţiunea cezariană şi placenta praevia: cauzalitate sau doar coincidenţă

Introducere: Placenta previa este o patologie obstetricală severă care se defineşte prin localizarea marginii inferioare a placentei la o distanţă mai mică de 2 cm de la orificiul cervical intern, respectiv dacă acoperă acest orificiu parţial sau în totalitate. Incidenţa placentei previa este semnificativ mai mare la femeile cu uter cicatriceal.

Material şi metodă: Am efectuat o analiză retrospectivă a unei cohorte de paciente cu diagnostic confirmat la naştere de placenta previa în două spitale universitare între 2005 şi 2015. Am inclus atât pacientele cu uter intact cât şi cele cu uter cicatriceal. Am estimat riscul relativ al apariţiei placentei previa în cele 2 grupe de paciente.

Rezultate: În perioada analizată au avut loc 42301 naşteri iar incidenţa cazurilor de placentă previa a fost de 0,45%, adică un total de 194 de cazuri. Rata media de operaţie cezariană a a fost 21,66%. S-a detectat o incidenţă ridicată a placentei previa la femei între 31-40 ani, la cele cu multiple sarcini respectiv multiple naşteri în antecedente. În 28.16% dintre cazurile analizate pacientele au fost primipare. Peste 55% dintre cazuri au fost finalizate înainte de 37 saptamani de gestaţie. 18,03 % dintre cazuri au reprezentat urgenţă obstetricală majoră. La 8 paciente s-a efectuat histerectomie de necesitate în perioada postpartum: 4 au avut placentă previa si 4 au avut placentă previa asociată cu uter cicatriceal. Inserţia patologică a placentei a fost asociată cu placentă previa: placenta acreta 1 caz, placenta increta 1 caz, respectiv cu placentă previa pe uter cicatriceal : placenta percereta 1 caz. Riscul relativ pentru necesitatea unei histerectomii totale de hemostază a fost de 9,5.

Concluzii: Incidenţa placentei previa detectată pe lotul nostru este similară cu cea din literatura. S-a detectat creşterea semnificativă al riscului unei histerectomii de necesitate în cazul pacientelor cu placentă previa pe uter cicatriceal. Se recomandă selectarea riguroasă ale indicaţiilor operaţiilor cezariene în vederea scăderii asocierii dintre placenta previa şi uterul cicatriceal. De asemenea se recomandă identificarea prezenţei unei placente jos inserate la pacientele cu uter cicatriceal şi apoi prevenia sângerărilor postpartum cauzate de inserţia patologică a placentei.

Cuvinte cheie: Secţiune cezariană, placentă praevia, histerectomie

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KEY WORDS:cesaean section, placenta praevia, histerectomy

Introduction

Placenta previa is a rare but severe obstetrical complication defined by a low localized placenta with inferior margin closer than 2 cm from the internal cervical orifice or by covering it partially or totally. The most frequent complication of placenta previa is vaginal bleeding which usually appears at the end of second trimester and can have severe consequences for both mother and fetus, like intrauterine growth restriction, perinatal and postnatal hemorrhage, preterm delivery leading to increased risk of perinatal mortality and morbidity [1].

The etiology of placenta previa is not clearly defined. Several clinical and epidemiological studies reported increase of incidence at advanced maternal age, high parity and deliveries, male fetus, smokers and illegal drug users [2,3] respectively in case of presence of uterine wall cicatrice caused by previous surgical interventions like caesarean section or myomectomy. Risk of placenta previa is 1.5 to 6 times higher in a presence of uterine cicatrice compared to non-cicatriceal uterus [4].

The only treatment of placenta previa is elective caesarean section delivery. In absence of major vaginal bleeding the pregnancy should be leaded as long as possible,but in cases of life threatening hemorrhages emergency caesarean section must be performed. Postpartum complications are also due to excessive bleeding caused by uterine hypotonia or abnormal placental invasion and can lead to loss of the uterus by emergency hysterectomy.

Objective

Because placenta praevia is a serious obstetrical complication with high morbidity and mortality of mother and newborn, and because the rise of caesarean section rate in Romania we decided to analyze the incidence of placenta praevia in patients with cicatriceal uterus post caesarean section.

Material and method

We performed a retrospective cohort study in two university hospitals using data of patients with positive diagnosis of placenta praevia confirmed in the moment of delivery between 01.01.2006-31.07.2016.

Patients data were collected using caesarean section operation registers and patient files : date and time of patients admission to the hospital, date and time of C-section, age, general obstetrical information (number of anterior pregnancies and deliveries, gestational age at the moment of C-section), indication for C-section, description of the intervention containing information of possible case particularities and intraoperative complications (pathological placental insertion, excessive bleeding, uterine hypotonia, intraoperative lesions, necessity of hysterectomy), data about newborn (weight, Apgar score). Two group of patients were made: a study group (patients with placenta previa associated to cicatriceal uterus) and a control group (patients with placenta previa without uterine cicatrice).

The null hypothesis of the study was that the incidence of placenta previa is higher in patients with cicatriceal uterus (study group) than in patients without uterine cicatrice.

Using logistic regression the risk of appearance of placenta previa was estimated in both groups.

Results

In the two study groups between 01.01.2005-31.07.2015 the total number of birth was 42301. Medium rate of C-section deliveries was 21.66 %. The incidence of placenta previa was 0.45% with a total number of 194 cases . Increased incidence was observed in women between 31-40 years (Figure 1). All of them were finished by a caesarean section delivery. Among these, 28.16 % of patients were primiparas (Figure 2).

For secundigesta patients (n=44)(Figure 3) in 9 cases was present a scar on the uterus and 2 of these 9 were finished by an emergency hysterectomy. In patients with 4 or more pregnancies in their personal history 88 had cicatriceal uterus (40.00%) (Figure 3) and 3 of them underwent a hysterectomy. It is important to mention the fact that our database did not offer information about those

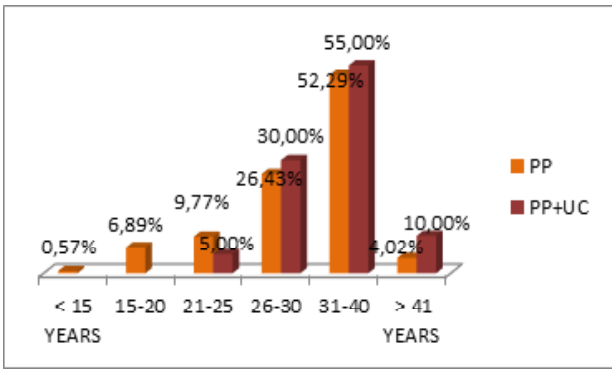

Figure 1. Incidence of placenta praevia by maternal age.

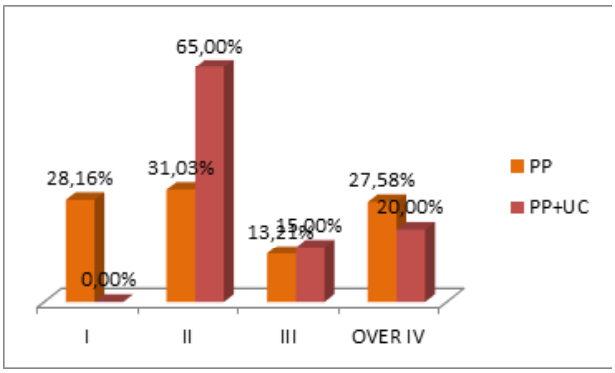

Figure 2. Incidence of placenta praevia by parity.

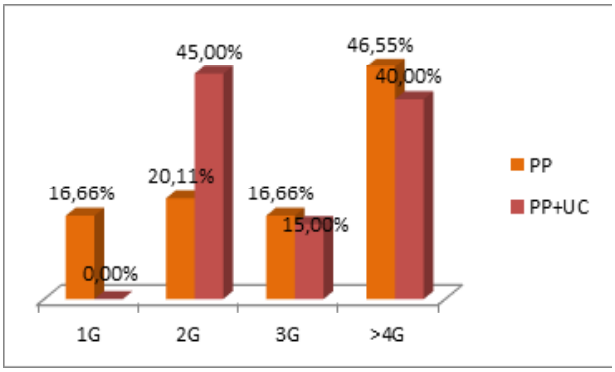

Figure 3. Incidence of placenta praevia by gestation.

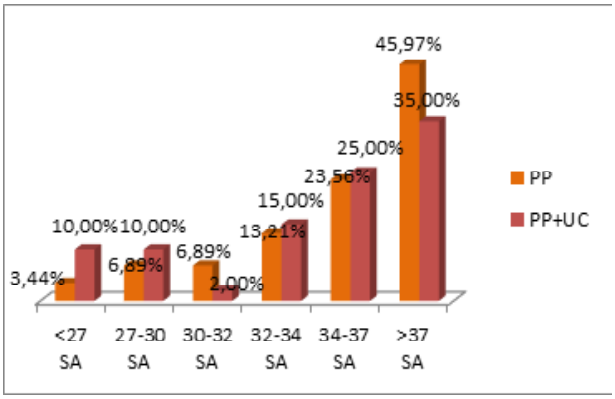

Figure 4. Incidence of placenta praevia by gestational age at delivery.

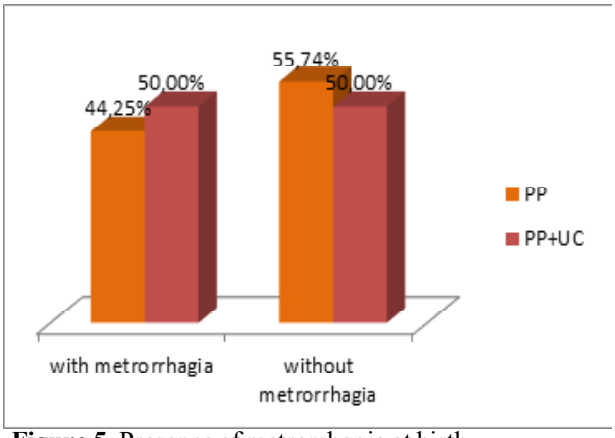

Figure 5. Presence of metrorrhagia at birth.

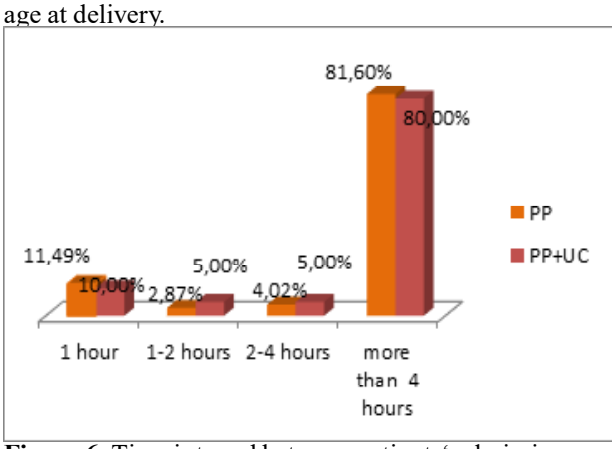

Figure 6. Time interval between patients' admission and surgery

previous pregnancies which were finished before 24 weeks of gestation.

In secundipara patients (66 cases) a higher rate of placenta previa was observed (Figure 2), 13 of them had uterine scar and 4 underwent a hysterectomy. In case of high multiparity (4 or more deliveries) another increase of incidence was observed: 52 cases (27.58% with placenta previa and 20.00% with placent previa and associated uterine cicatrice)(Figure 2.), 4 of them had cicatriceal uterus and 2 of them had post-partum emergency hysterectomy.

In 55.68 % of all cases a preterm delivery was noted. (Figure 4.)

In 54.63% of all cases metrorrhagia occured as a complication before the moment of C-section in both groups (Figure 5).

In 18.03% of all cases C-section was performed in less than one hour these representing major emergencies , in five cases also histerectomy was performed (Figure 6).

From all analyzed cases in 8 patients hemostatic hysterectomy was performed in the postpartum period: 4 of them had cicatriceal uterus (20%) and 4 of them had intact uterus (2.29%). From those 4 cases with placenta praevia and intact uterus in 2 cases abnormal insertion of placenta was associated (placenta accreta 1 case, placenta increta

1 case), respectively from 4 patients with placenta praevia and cicatriceal uterus in 1 case abnormal insertion was present (placenta percreta).

The calculated relative risk (RR) of a hemostatic emergency hysterectomy was 9.5 in our study.

The NNH (number needed to harm) is 50, meaning that patients with placenta previa with cicatriceal uterus in comparison to patients with placenta previa with intact uterus at every 50th woman postpartum haemostatic hysterectomy may be necessary.

Discussion

The frequency of caesarean section delivery is getting higher all over the world. By the latest international reports the rate of caesarean sections in Romania is 36.6%, which shows a 5 times increase of this rate in the last 25 years. [5] Increased risk of placenta previa after a C-section delivery is reported in medical literature (0.38%, RR 1.5, 95%). [6] Women with advanced age, high gestation and parity, who smoke or are using illegal drugs also have increased risk for a pregnancy complicated by placenta previa. [3,7] Similarly higher risk was demonstrated in the presence of an uterine wall scar post-surgery. [6,8]

Medical literature data shows that in Europe the estimated risk is 3.6 per 1000 pregnancies [9] with a relative risk between 2.4 and 3.8 depending of the study design.[8] Our study demonstrated an incidence of 0.45% for placenta previa.

According to our results in the analyzed group of patients the highest incidence of placenta previa appeared at female between 31-40 years (52.29% without uterine scar and 55% with uterine scar, respectivelly). Significant increase of risk was demonstrated in advanced maternal age (Figure1) similarly to data from medical literature [7,10,11,4]

Related to the number of gestation and parity our results show similar incidence as described in the literature. [7, 12]

In our study we found a higher incidence of preterm birth 54.63% compared with 40 % found in the medical literature with no significant difference between two groups. [13]

Bleeding at presentation was equally present in both groups. Our results shows a 20% incidence of emergency C-section as a result of severe bleeding.

The incidence of hysterectomy in our study was 2.29% for group with placenta previa with no scar, and 20% for group with placenta previa associated with uterine cicatrice, much lower than other studies in the literature. [11]

Conclusions

Detected incidence of placenta previa is similar to the data found in medical literature.

If primipara patients are excluded the probability is increased. Our study design didn't allow us to demonstrate the increase of the risk of placenta previa at patients with multiple uterine scars due to cesarean sections.

We detected a significant increased risk for haemostatic postpartum hysterectomy in patients with cicatriceal uterus and placenta previa.

Rigorous selection of caesarian section indication is recommended to decrease the incidence of cicatriceal uterus and association of placenta previa.

We recommend early diagnosis of low lying placenta on the anterior uterine wall in patients with cicatricieal uterus and prevention of postpartum bleeding due to abnormal placental insertion at the level of a uterine cicatrice.

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