Clinical differences between dangerous and non-hazardous placenta previa in the scar uterus.

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Abstract

Aim: To compare the clinical data of the sinister and non-hazardous placenta previa in the scar uterus.
Method: This study used 126 non-hazardous samples and 190 cases of sinister clinical data for surveying. The R software was used to analyze the data.
Results: The sinister placenta previa has a lower neonatal weight, less gestational age, and higher bleeding volume. There is no significant difference in age. And through correlation comparison, it is found that gestational age and fetal weight are positively correlated in sinister and non-hazardous patients. The volume of bleeding in sinister patients is positively correlated with the number of pregnancies, the number of gestation intervals, and age. The amount is positively correlated with the number of pregnancies and negatively correlated with fetal weight in the non-hazardous patients.
Conclusion: The study suggests that clinical care should be of greater concern for the age of pregnancy women and multiple pregnancies. The above findings can provide a basis for clinical research.

Introduction

Caesarean causes poor healing of the uterus, uterine scar tissue hyperplasia, myometrium becomes weak and gradually replaced by fibrous tissue, elasticity decreases, the placenta is easy to invade the muscle layer or even the serosa layer, leading to the occurrence of placenta previa [1]. According to the degree of danger, placenta previa is divided into Pernicious Placenta Previa (PPP) and non-pernicious placenta previa (nPPP). PPP refers to the previous history of cesarean section [2]. In recent years, the obstetrics industry will have a history of uterine surgery (including cesarean section, uterine plastic surgery, myomectomy, etc.), and the placenta previa is called PPP at the incision scar. nPPP means that the edge of the placenta previa does not reach or cover the original uterine scar tissue, or does not incorporate the placenta previa with a scar uterus. The sinister placenta previa is a common cause of postpartum hemorrhage, because the placenta is attached to the lower uterus, where the muscle fibers are thin and the contractile force is poor, and the scar uterus caused by the previous cesarean section leads to the proliferation of the lower uterine fibrous tissue. The placenta cannot be completely stripped, increasing the risk of bleeding. Eller et al. believe that more than 50% of patients with placenta implantation will have pre-production bleeding before 32 weeks, which is one of the reasons for emergency delivery [3]. Dangerous placenta

preposition is often accompanied by low birth weight and premature infants, low survival ability after birth, and high probability of suffocation and death. The treatment during the operation is very difficult, often causing fierce bleeding during cesarean delivery and placental dissection [4]. With the development of the technical level of obstetrics and gynecology, the application of uterine artery interventional embolization, internal balloon catheter and other methods to reduce the rate of hysterectomy. Our study compares the clinical data of the sinister and non-hazardous placenta previa in the scar uterus; it is found that the sinister placenta previa has a lower neonatal weight, less gestational age, and higher bleeding volume. There is no significant difference in age. And through correlation comparison, it is found that gestational age and fetal weight are positively correlated in sinister and non-hazardous patients. The volume of bleeding in sinister patients is positively correlated with the number of pregnancies, the number of gestation intervals, and age. The amount of bleeding is positively correlated with the number of pregnancies and negatively correlated with fetal weight in the non-hazardous patients.

Materials and Methods

This study used 126 non-hazardous samples and 190 cases of sinister clinical data for surveying. Scar uterus: a history of

cesarean section, exclusion of uterine fibroids and other surgical history caused by scar uterus. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki. Declaration and its later amendments or comparable ethical standards. The study had been approved by the Ethics Review Committee in the Jining Medical University. The data analysis was done by using R software.

Results

Comparing the data difference between Dangerous and non-hazardous scar uterus data. By comparing the birth weight, blood loss, pregnancy interval, number of pregnancies, operation time, placenta type, age of production, and gestational age, the birth weight and gestational age of the new born were significantly less than that of Non-hazardous samples. The number of production, the amount of bleeding, and the operation time were significantly higher than those of non-hazardous samples.

The correlation of dangerous and non-hazardous scar intrauterine data

In the dangerous and non-hazardous data samples, the correlation coefficient between neonatal weight and gestational age was (r=0.734, p-value<0.01), and it reveals that the neonatal weight has a strong positive correlation with gestational age. The amount of bleeding in the sinister samples was positively correlated with the number of pregnancy, age, and pregnancy interval (R=0.13, p<0.05; R=0.16, R<0.05, R=0.15, p<0.05). In the non-hazardous samples, the amount of bleeding was positively correlated with the number of pregnancies (R=0.26, p<0.05), but negatively correlated with neonatal weight (R=-0.15, p<0.05).

Discussion

The scar uterus is a high risk factor for the occurrence of sinister placenta previa, and cesarean section greatly increases the incidence of placenta previa and placenta implantation [1]. The placenta implantation rate and the large bleeding rate of the sinister placenta previa are high. Placenta previa and accreta coexist in many patients, leading to complex bleeding related to the degree of myometrial invasion [5]. Baba Y et al. study that residents with accreta, total previa, CS, and anterior placentation bled significantly more than their counterparts. Multivariate logistic regression analysis showed that accreta (odds ratio [OR] 12.6), previous CS (OR 4.7), total previa (OR 4.1), and anterior placentation (OR 3.5) were independent risk factors of massive haemorrhage [6,7]. Dashe JS found that the diagnosis of placenta previa has shifted from clinical examination of the dilated cervix to sonographic assessment of the closed internal. If the cervix is closed, the distinction between a placental edge at the cervical margin and one partially covering the os is neither reliable nor clinically important [8]. Rosenberg research shows that older pregnant women, the history of cesarean section and multiple uterine

surgeries are independent risk factors for placenta previa [9]. Previous studies have shown that the occurrence of placenta previa is closely related to endometrial damage and lesions caused by various causes such as multiple abortions, repeated uterine operation, cesarean section, and assisted reproductive technology [9]. In addition, studies have shown that placental size and morphological abnormalities caused by para-placenta, multiple pregnancies are also related to the occurrence of placenta previa [10]. This article compares the clinical data of the sinister and non-hazardous placenta previa in the scar uterus (Table 1). It is found that the sinister placenta previa has a lower neonatal weight, less gestational age, higher bleeding volume. It revealed that there is a significant difference in the above data (Figure 1). Correlation analysis showed that gestational age and fetal weight were positively correlated in both sinister and non-hazardous patients (Figure 2).
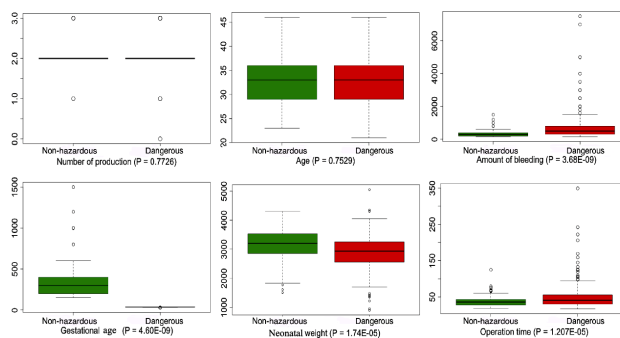
Figure 1. *The comparison map generated by the boxplot function is used to compare the non-hazardous and dangerous sample data. Non-hazardous and dangerous sample data have significant differences in numerical distribution. These box plots display the distribution of data based on the five number summaries: minimum, first quartile, median, third quartile, and maximum. In the simplest box plot the central rectangle spans the First quartile to the third quartile. A segment inside the rectangle shows the median and "whiskers" above and below the box show the locations of the minimum and maximum.*
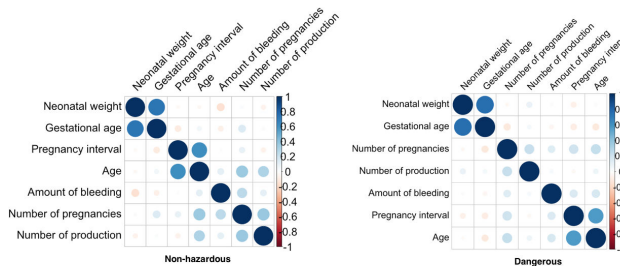
Figure 2. *The corr-plot function of the R's corr-plot package was used to analyze the correlation of neonatal weight, gestational age, pregnancy interval, age, number of pregnancies, number of production and amount of bleeding in the non-hazardous and dangerous sample data. Positive correlations are displayed in blue and negative correlations in red color. Color intensity and the size of the circle are proportional to the correlation coefficients. The correlation coefficient is between -1 and 1.*

Table 1. *Evaluation of patient's parameters by the two groups.*

Variables	Mean ± SD	
	Dangerous	**Non-hazardous**
The number of production	2.06 ± 0.35	2.06 ± 0.28
Age	32.87 ± 4.77	33.05 ± 4.83
Amount of bleeding	828.57 ± 1071.96	335.32 ± 203.57
Gestational age	36.38 ± 2.31	37.73 ± 1.64
Neonatal weight	2869.26 ± 627.82	3166.51 ± 564.7
Operation time	52.89 ± 40.9	38.38 ± 14.67
The number of pregnancy	3.43 ± 1.21	3.35 ± 1.25

Conclusion

The amount of bleeding in sinister patients was positively correlated with the number of pregnancies, the number of gestational intervals, and age. In non-dangerous patients, the amount of bleeding volume is positively correlated with the number of pregnancies and negatively correlated with fetal weight. The study suggests that clinical care should be of greater concern for the age of pregnancy women and multiple pregnancies. The above findings can provide a basis for clinical research.

Acknowledgments

Disclosure

The authors declare no conflicts of interest.

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