Application Effect of Multi-Disciplinary Team in Patients with Dangerous Placenta Previa with Placenta Implantation

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Abstract: Objective: To explore the clinical effect of multi-disciplinary team in patients with dangerous placenta previa with placenta implantation. Methods: The object of this study were 20 patients with dangerous placenta previa with placenta implantation treated in our hospital from August 2019 to April 2021. The cases were randomly divided into two groups by the coin method. 10 patients in the control group were given routine treatment and nursing intervention, and 10 patients in the experimental group were given multi-disciplinary team treatment. The differences of operation and hospitalization time between the two groups were evaluated and compared. Results: Compared with the control group, the experimental group had significantly less intraoperative bleeding and blood transfusion, shorter operation time and hospital stay. There was significant difference between the two groups ($P < 0.05$). Conclusion: Multi-disciplinary team can significantly shorten the operation time of patients with dangerous placenta previa with placenta implantation, control and reduce intraoperative bleeding and blood transfusion, and ensure good pregnancy outcome and maternal and infant life safety.

1. Introduction

The so-called dangerous placenta previa mainly refers to a kind of placenta previa attached to the scar of uterus in this pregnancy after the patient has received cesarean section in the past, with or without placenta implantation. In recent years, with the increasing incidence of dangerous placenta previa, the possibility of placenta implantation has increased significantly. One of the important causes of intrapartum and postpartum hemorrhage is placenta previa combined with placental implantation and placental adhesion, which will pose a serious threat to the life safety of mothers and infants [1]. Multi-disciplinary team (MDT) is a new medical mode. By changing the traditional empirical and individual medical mode to the modern mode of group cooperation and decision-making, it promotes the interdisciplinary development and significantly improves the professional level by the quality control system. In this paper, 20 patients with dangerous placenta previa with placenta implantation treated in our hospital from August 2019 to April 2021 were selected. The study is reported as follows.

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2. Data and Methods

2.1 General Data

The object of this study were 20 patients with dangerous placenta previa with placenta implantation treated in our hospital from August 2019 to April 2021. The age of 10 patients in the control group was 20-35 years old, and the calculated average age was (26.2 ± 4.5) years old. The age of 10 patients in the experimental group was 21-34 years, and the calculated average age was (26.4 ± 4.6) years. There was no difference in clinical data between the two groups ($P > 0.05$).

2.2 Methods

Routine treatment and nursing intervention were carried out in the control group. All examinations were done well and the operation methods were formulated before operation. The preoperative preparations were improved, and blood and skin were prepared. Anesthesia and operation were carried out according to the doctor's instructions. If there was bleeding during operation, blood arrest and blood transfusion should be carried out in time. If it was still not effectively controlled, bilateral uterine artery embolization and hemostasis need to be carried out through DSA. Relevant preparations for total hysterectomy also need to be made. Targeted and personalized antibacterial treatment was carried out after operation.

The multi-disciplinary team treatment was carried out in the experimental group. Before operation, full analysis and discussion was made. The medical department organized obstetrical department to discuss with the medical staff of other departments (operating room, anesthesia department, ICU, laboratory department and parturient room), and set up a special first-aid team. The medical department was responsible for overall supervision and deployment, commanding and coordinating relevant personnel, contacting blood stations and strengthening communication. The Transfusion Department was responsible for blood preparation and delivery, dispensing blood products, and providing blood products as soon as possible. The examination department prepared for the intraoperative examination of blood routine examination, blood coagulation, etc. The anesthesia department was responsible for anesthesia, closely observing and monitoring vital signs, and doing a good job in fluid management to ensure that the operation can be carried out smoothly. The operation should be carried out jointly by obstetrical department and interventional department. The two departments should race against the clock and connect seamlessly to shorten the operation time as far as possible. After confirming the successful delivery of the fetus, the midwife in the parturient room should clean the respiratory tract, deal with the umbilical cord and provide a warm environment for the newborn. The itinerant nurses and anesthesiologists in the operating room should work together to maintain the stable vital signs of the newborn. ICU was responsible for postoperative treatment and nursing. As for preparations, ECG monitor, oxygen device, anesthesia machine, anesthetics, materials for uterine artery embolization and disposable intervention package were prepared in advance. In addition, materials for hysterectomy and rescue drugs were also prepared. Obstetric nurses were responsible for preparing skin, assisting patients in changing surgical clothes, escorting pregnant women to DSA and making handover. DSA nurses should strengthen patients' psychological intervention, use ECG monitoring, oxygen inhalation, indwelling catheter, strictly follow the doctor's advice, create venous access, and ensure adequate fluid replacement during operation. The supine position inclined 15 °to the left was selected during the operation. The interventional doctor was responsible for disinfection, towel laying and local anesthesia. The femoral arteries on both sides were punctured by Seldinger method, and the 7F vascular sheath was inserted. The peripheral balloon dilation catheter was introduced through the 7F vascular sheath to reach Common ILIAC artery. After the anesthesiologist completed the anesthesia,

the obstetrician completed the towel laying with the assistance of Anesthesia nurse, guided pregnant women to straighten their lower limbs and observed whether the arterial sheath was firm. The balloon catheter should avoid slippage, displacement and bend. The obstetrician was responsible for cesarean section. After the fetus was delivered, the stripped placenta should be suspended. The interventional doctor injected the contrast medium into the balloon dilation catheter to temporarily block the uterine blood supply. The nurse of the interventional department was responsible for recording the pressurization time. The relaxation was performed once every 30min. The Interventional physician withdrew the balloon dilation catheter and inserted the uterine artery catheter after the placenta was stripped or the operation has been completed. The uterine artery catheter was inserted at the opening of bilateral uterine artery, and the uterine artery was embolized with gelatin sponge strip, and the bilateral uterine artery was angiographed again, and then the uterine artery catheter was pulled out. The interventional department pulled out the vascular sheath, compressed the puncture point for 20 minutes, and performed "8" shape compression bandage. After operation, if the patients' condition was confirmed stable, they were transferred to ICU for ECG monitoring and oxygen inhalation. Intravenous infusion and anti-infection should follow the doctor's advice, so as to closely observe the uterine contraction and vaginal bleeding. The patients were required to brake both lower limbs for 8 hours, so as to observe the hematoma and bleeding at the puncture point of femoral artery, evaluate the lower limb pain, dorsal artery pulsation of foot and subcutaneous temperature, and prevent complications. It was necessary to actively carry out Treatment of lower extremity elastic socks and postpartum VTE to prevent venous thrombosis of lower limbs.

2.3 Observation Indicators

The whole process time, intraoperative blood loss and blood transfusion of the two groups were recorded, and the postoperative hospital stay was counted.

2.4 Statistical Methods

This study used SPSS24.0 statistical software to analyze all the data obtained, and used ($\bar{x} \pm s$) to represent the measurement data. The t-test was used during the inter-group evaluation. The data were significantly different and had statistical significance, which was represented by $P < 0.05$.

3. Results

Compared with the control group, the experimental group had shorter operation time and hospital stay, less intraoperative bleeding and blood transfusion. The data between the two groups were statistically significant ($P < 0.05$). See the table below for details.

Table 1 Comparison of Operation Time and Hospital Stay Were between the Two Groups ($\bar{x} \pm s$)

Group	Intraoperative Bleeding(mL)	Operation Time(min)	Blood Volume(mL)	Hospital Stay(d)
Control Group(n=10)	2580.01±319.36	145.08±25.46	762.84±296.64	11.61±2.06
Experimental Group(n=10)	1470.02±694.04	79.12±20.11	1807.62±474.33	5.21±1.29
t	4.5944	6.4290	5.9056	8.3267
P	0.0002	0.0000	0.0000	0.0000

4. Conclusion

Dangerous placenta previa combined with placental implantation is common in clinical obstetrics, greatly increasing the risk of intraoperative bleeding and endangering the life safety of patients [2]. The multi-disciplinary team grasps the main risks and difficulties in the operation process through comprehensive preoperative evaluation and full discussion, and then formulates a scientific, high-quality and reasonable diagnosis and treatment scheme based on this. The clinical departments and medical technology departments can maintain cooperation and give full play to the important value of each department [3]. The implementation of uterine artery embolization is more conducive to win the rescue time seamlessly, reduce the intraoperative blood loss and blood transfusion, reduce the severity of the disease, shorten the postoperative hospital stay and reduce the family economic pressure [4]. In addition, the good cooperation of each department can ensure the medical resources in the rescue work, help the doctors to comprehensively and accurately grasp the situation of patients in time, implement special treatment measures, and improve the treatment effect and quality of life [5-6].

It was found that the experimental group had less intraoperative bleeding and blood transfusion, shorter operation time and hospital stay than the control group ($P < 0.05$). It can be shown that the multi-disciplinary team can significantly shorten the operation time of patients with dangerous placenta previa with placenta implantation, control and reduce intraoperative bleeding and blood transfusion, and ensure good pregnancy outcome and maternal and infant life safety.

References

[1] Wang Yanli. Value of Multi-Disciplinary Team in Cesarean Section with Dangerous Placenta Previa and Placental Implantation [J]. Chinese Journal of Interventional Radiology, vol.6, no.3, pp.195-198, 2018.

[2] Li Feng, Huang Wei, Yang Kongwu, et al. Multi-Disciplinary Team of Dangerous Placenta Previa with Placental Implantation under the Condition of Non-Hybrid Operating Room [J]. Journal of Practical Radiology, vol.36, no.5, pp.800-803, 2020.

[3] Luo Jianying, Liu Jumei, Yan Yu, et al. Analysis of 14 Cases of Obstetric Dangerous Placenta Previa Treated by Multi-Disciplinary Team [J]. Chinese Medical Science, vol.10, no.18, pp.108-111, 2020.

[4] Lu Xiaohong, Zheng Gaoming. Application Value of Multi-Disciplinary Team in the Treatment of Dangerous Placenta Previa [J]. Chinese Journal of Health Medicine, vol.20, no.6, pp.471-473, 2018.

[5] Zhu Yue, Sun Yingchun, Ma He, et al. Clinical Study on Multi-Disciplinary Team (MDT) of Dangerous Placenta Previa [J]. Chinese Journal of Obstetrics and Gynecology, vol.20, no.3, pp.245-246, 2019.

[6] Yu Wangjun. Effect of Multi-Disciplinary Team on Pregnancy Outcome of Patients with Dangerous Placenta Previa [J]. Shenzhen Journal of Integrated Traditional Chinese and Western Medicine, vol.30, no.5, pp.26-28, 2020.