

doi: 10.13241/j.cnki.pmb.2019.24.022

改变胎儿、胎盘相对位置对 ≤ 34 周母儿的影响*

涂业秀 邓新琼[△] 廖滔 覃晓慧 唐哲文

(广西科技大学附属妇产医院、儿童医院产科 广西 柳州 545001)

摘要 目的:探讨改变胎儿、胎盘相对位置对 ≤ 34 周母儿的影响。**方法:**选择2016年1月至2018年12月在我院进行分娩的孕妇300例及其新生儿,根据胎儿胎盘相对位置分为A组、B组与C组。A组脐带、脐带胎儿端、脐带胎盘端位于同一水平面,B组脐带胎儿端低于胎盘端15 cm,C组脐带胎儿端低于胎盘端30 cm,记录和比较各组母儿预后。**结果:**三组孕妇的第三产程时间对比差异无统计学意义($P>0.05$)。A组新生儿出生后第1 d、2 d与3 d的血清胆红素浓度都显著高于B组与C组($P<0.05$),预后显著差于B组与C组($P<0.05$),B组与C组以上指标对比差异无统计学意义($P>0.05$)。A组、B组、C组孕妇产后出血、感染、便秘、静脉血栓等并发症发生率分别为16.0%、5.0%和4.0%,A组显著高于B组与C组($P<0.05$)。**结论:**脐带胎儿端低于胎盘端可增加胎盘输血,降低新生儿胆红素水平,改善孕妇与新生儿的预后。

关键词:胎儿;胎盘;相对位置;胆红素;黄疸

中图分类号:R714.3 **文献标识码:**A **文章编号:**1673-6273(2019)24-4699-04

The Influence of Changing the Fetus and Placenta Relative Position on ≤ 34 Weeks Mother and Child*

TU Ye-xiu, DENG Xin-qiong[△], LIAO Tao, QIN Xiao-hui, TANG Zhe-wen

(Guangxi University of Science and Technology Affiliated Maternity Hospital, Children's Hospital, Department of Obstetrics, Liuzhou, Guangxi, 545001, China)

ABSTRACT Objective: To investigate the influence of changing the relative position of the fetus and placenta on ≤ 34 weeks of mother and child. **Methods:** From January 2016 to December 2018, 300 pregnant women and their newborns who were delivered in our hospital were divided into the group A, group B and group C according to the relative position of the fetal placenta. The group A umbilical cord, umbilical cord fetal end, umbilical cord placenta end were located in the same horizontal plane. The group B umbilical cord fetal end were lower than the placenta end 15 cm. The group C umbilical cord fetal end were lower than the placenta end 30 cm. The prognosis of the two groups were recorded and compared. **Results:** There was no significant difference in the third stage of labor between the three groups of pregnant women ($P>0.05$). The serum bilirubin concentrations in group A were significantly higher than those in group B and group C on the 1st, 2nd and 3rd day after birth ($P<0.05$), and the prognosis was significantly worse than that of the group B and the group C ($P<0.05$), there were no significant difference between the group B and the group C ($P>0.05$). The incidences of complications such as postpartum hemorrhage, infection, constipation and venous thrombosis in the group A, group B and group C were 16.0%, 5.0% and 4.0%, respectively, which was significantly higher in the group A than those of the group B and the group C ($P<0.05$). **Conclusion:** The fetal end of the umbilical cord which is lower than the placenta end can increase the placental blood transfusion, reduce the level of neonatal bilirubin, and improve the prognosis of pregnant women and newborns.

Key words: Fetus; Placenta; Relative position; Bilirubin; Jaundice

Chinese Library Classification(CLC): R714.3 **Document code:** A

Article ID: 1673-6273(2019)24-4699-04

前言

随着围产医学的发展及人们认识水平的提高,围产中母儿安全得到了广泛重视。研究表明足月妊娠胎盘循环血量占胎儿胎盘总循环量的40%左右,胎盘循环中胎儿红细胞高达60%并富含造血干细胞,故胎儿、胎盘位置对保障母儿预后健康具

有重要价值^[1-3]。改变胎儿、胎盘相对位置是积极处理第三产程的重要措施之一,已有研究显示脐带、脐带胎儿端、脐带胎盘端位于同一水平面是引起新生儿贫血的重要原因,可使得的新生儿血容量减少,同时由于造血干细胞的丢失,还可能引起多种血液系统疾病^[4-6]。而脐带、脐带胎儿端、脐带胎盘端不处于同一水平面不会对母体造成损害,还可以增加红细胞压积、预防新

* 基金项目:国家自然科学基金项目(81360365);广西壮族自治区卫生和计划生育委员会自筹经费科研课题(Z2016528)

作者简介:涂业秀(1975-),女,硕士研究生,副主任医师,研究方向:围产医学,电话:13078047709, E-mail: tuyexiu1975@163.com

[△] 通讯作者:邓新琼(1971-),女,本科,主任医师,研究方向:围产医学,电话:13977293161, E-mail: 499835904@qq.com

(收稿日期:2019-07-03 接受日期:2019-07-28)

生儿贫血、减少铁剂储备不足等,但是在临床上的应用还比较少见^[7-9]。本研究选择选择 ≤ 34 周单活胎孕产妇及新生儿为研究人群,将入选的孕产妇根据胎儿胎盘相对位置分为三组,探讨了改变胎儿、胎盘相对位置对 ≤ 34 周母儿的影响,现总结报道如下。

1 资料与方法

1.1 研究对象

选择2016年1月至2018年12月在我院进行分娩的孕产妇300例及其新生儿,纳入标准: ≤ 34 周单胎活产孕产妇及其新生

儿;年龄在20-35岁;顺产(包括会阴侧切),顺利完成分娩;临床资料完整;孕妇签署了知情同意书;非窒息儿。排除标准:新生儿发现有畸形并且畸形影响胆红素代谢如先天性肛门闭锁、先天性胆道闭锁等;胎盘娩出后经检查有异常如轮状胎盘、胎盘早剥;产后新生儿Apgar评分1 min <7 分者;新生儿随访过程中出现肺炎、新生儿溶血病等影响胆红素代谢的疾病;主动要求退出随访研究。根据胎儿胎盘相对位置分为A组、B组与C组,三组孕妇的年龄、孕次、产次、分娩孕周、新生儿Apgar评分等对比差异无统计学意义($P>0.05$)。见表1。

表1 三组一般资料对比

Table 1 Comparison of the general data among three groups

Groups	n	Age(Year)	Pregnancy time (times)	Production time (time)	Delivery gestational age(week)	Newborn Apgar score(score)
Group A	100	28.65 $\pm$ 2.11	1.87 $\pm$ 0.55	0.45 $\pm$ 0.11	32.42 $\pm$ 1.48	8.66 $\pm$ 1.30
Group B	100	28.47 $\pm$ 1.94	1.86 $\pm$ 0.43	0.49 $\pm$ 0.10	32.89 $\pm$ 2.10	8.78 $\pm$ 0.88
Group C	100	28.00 $\pm$ 2.71	1.88 $\pm$ 0.31	0.46 $\pm$ 0.09	32.33 $\pm$ 1.74	8.80 $\pm$ 1.22
F		0.566	0.032	0.133	0.294	0.311
P		0.544	0.989	0.923	0.788	0.872

1.2 处理方法

A组:脐带、脐带胎儿端、脐带胎盘端位于同一水平面;B组:脐带胎儿端低于胎盘端15 cm;C组:脐带胎儿端低于胎盘端30 cm。

准备物品:日本产的产床(DG-810 Belmont),可以升降,自动调节产妇臀部至接生托盘的距离,保暖毛巾,一次性手术衣,秒钟,聚血盆。

操作方法:助产士上台后在准备接生过程中,在胎儿娩出前,根据分组的不同,调节产床至接生托盘的高度(A组高度无需调节,B组调节高度为15 cm,C组高度为30 cm),毛巾预热,胎儿肩娩出后接生者台下助产士开始读秒、计时,接生者将新生儿放置于托盘(胎儿娩出后将一件一次性手术衣铺在托盘上,保证托盘干燥,不湿润),擦干全身,预热毛巾覆盖新生儿保暖,清理呼吸道,产妇臀部置入聚血盆记录出血量。

1.3 观察指标

(1)记录各组新生儿出生后第1 d、2 d与3 d的血胆红素

浓度,采用日本日立7600全自动生化分析仪进行测定。(2)记录各组孕妇的第三产程时间,其为胎儿娩出后至胎盘娩出的时间。(3)记录各组孕妇产后出血、感染、便秘、静脉血栓等并发症情况。(4)记录各组围生儿极低体重儿、窒息、黄疸等发生情况。

1.4 统计方法

应用SPSS17.0软件对数据进行统计学分析,各计量资料以均数 $\pm$ 标准差表示,计数数据以%表示,统计学方法采用重复测量资料的方差分析或卡方 χ^2 检验,以 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 各组新生儿出生后血清胆红素浓度对比

A组新生儿出生后第1 d、2 d与3 d的血清胆红素浓度都显著高于B组与C组($P<0.05$),B组与C组对比差异无统计学意义($P>0.05$)。见表2。

表2 三组不同时间点的血清胆红素浓度对比($\mu\text{mol/L}$,均数 $\pm$ 标准差)

Table 2 Comparison of the serum bilirubin concentrations among three groups at different time points($\mu\text{mol/L}$, $\bar{x} \pm s$)

Groups	n	After the birth for 1 d	After the birth for 2 d	After the birth for 3 d
Group A	100	110.84 $\pm$ 14.59**	168.20 $\pm$ 10.44**	197.98 $\pm$ 18.30**
Group B	100	100.87 $\pm$ 18.92	157.98 $\pm$ 12.41	178.76 $\pm$ 15.02
Group C	100	100.07 $\pm$ 20.17	158.09 $\pm$ 13.22	179.09 $\pm$ 15.77
F	-	7.824	8.001	11.472
P	-	0.007	0.006	0.000

Note: Compared with group B, * $P<0.05$; Compared with group C, ** $P<0.05$.

2.2 各组孕妇第三产程时间对比

A组第三产程时间为5.78 $\pm$ 0.55 min,B组为5.81 $\pm$ 0.62 min,C组为5.72 $\pm$ 0.77 min,组间对比差异无统计学意义($P>0.05$)。

2.3 各组孕妇产后并发症对比

A组、B组、C组孕妇产后出血、感染、便秘、静脉血栓等并发症发生率分别为16.0%、5.0%和4.0%,A组显著高于B组

与 C 组($P<0.05$)。见表 3。

表 3 三组产后并发症情况对比(例,%)

Table 3 Comparison of the postpartum complications among three groups(n, %)

Groups	n	Bleeding	Infectious	Constipation	Vein thrombosis	Total
Group A	100	3	4	6	3	16(4.0 %)
Group B	100	1	1	2	1	5(5.0 %)
Group C	100	0	1	2	1	4(4.0 %)
χ^2	-					11.607
P	-					0.003

2.4 各组新生儿预后对比

A 组新生儿的极低体重儿、窒息、黄疸的发生率显著高于 B

组与 C 组($P<0.05$), B 组与 C 组对比差异无统计学意义($P>0.05$), 见表 4。

表 4 三组新生儿预后对比(例,%)

Table 4 Comparison of the neonatal prognosis among three groups(n, %)

Groups	n	Very low body weight	Choking	Jaundice	Total
Group A	100	6	3	6	16(16.0 %)
Group B	100	3	1	2	6(6.0 %)
Group C	100	4	0	1	5(5.0 %)
χ^2					9.035
P					0.011

3 讨论

目前,临床对于孕妇早产分娩时胎儿、胎盘相对位置的选择尚无统一标准,以往采用多选择为同一水平位置,可使新生儿贫血及血液疾病等发生率显著增加^[10-12]。研究显示胎儿胎盘的相对水平位置可以增加胎盘输血量,使胎盘输血量增加^[13,14]。如果胎儿位置低于孕妇胎盘位置,胎儿将得到最大量的血供;而如果胎儿位置高于孕妇胎盘位置,新生儿不会接受来自胎盘的供血^[15-17]。本研究显示 A 组新生儿出生后第 1 d、2 d 与 3 d 的血清胆红素浓度都显著高于 B 组与 C,三组孕妇的第三产程时间对比差异无统计学意义,表明改变胎儿胎盘相对位置能降低新生儿的血胆红素浓度,且不会增加第三产程时间。

早产孕妇多伴随有各种产后并发症,其中产后出血、便秘与感染比较产检,病因包括产后子宫收缩乏力、胎盘胎膜残留、软产道裂伤、胎盘滞留、植入、凝血功能障碍等^[18-20]。特别是早产孕妇的早中期胎盘附着于近角部,子宫血供较前壁及后壁丰富,此时如果胎儿、胎盘位置在同一水平面,可能造成更大量的血窦开放^[21-23]。本研究显示 A 组、B 组、C 组孕妇产后出血、感染、便秘、静脉血栓等并发症发生率分别为 16.0 %、5.0 %和 4.0 %, A 组显著高于 B 组与 C 组。可能原因是将胎儿位于胎盘上下 30 cm 范围不影响胎盘输血,且能保障孕妇机体血液学循环稳定,从而可减少产后并发症的发生^[24-26]。

本研究显示 A 组新生儿的预后显著差于 B 组与 C 组, B 组与 C 组对比差异无统计学意义。从机制上分析,胎儿位置低于胎盘位置可延长胎盘输血的时间,增加胎盘输血量^[27,28]。还有学者也要求综合考虑尽早母婴皮肤接触,可将胎儿置于比胎盘低的位置,最好在胎儿可以接触到母亲皮肤的位置^[29,30]。本研究也有一定的不足,如观察时间点比较短,尚不能判定胎儿、胎盘

位置等增加胎盘输血的因素对新生儿的长期影响,将在后续研究中进行深入分析。

总之,脐带胎儿端低于胎盘端可增加胎盘输血,降低新生儿胆红素水平,改善孕妇与新生儿的预后。

参考文献(References)

- [1] Bonsignore A, Buffelli F, Ciliberti R, et al. Medico-legal considerations on "Lotus Birth" in the Italian legislative framework [J]. Ital J Pediatr, 2019, 45(1): 39-45
- [2] Boss RD, Lemmon ME, Arnold RM, et al. Communicating prognosis with parents of critically ill infants: direct observation of clinician behaviors [J]. Journal of Perinatology Official Journal of the California Perinatal Association, 2017, 37(11): 1224-1229
- [3] He H, Nuyt AM, Luo ZC, et al. Maternal Circulating Placental Growth Factor and Neonatal Metabolic Health Biomarkers in Small for Gestational Age Infants [J]. Frontiers in Endocrinology, 2018, 9 (4): e198207
- [4] Desoye G. The Human Placenta in Diabetes and Obesity: Friend or Foe? The 2017 Norbert Freinkel Award Lecture [J]. Diabetes Care, 2018, 41(7): 1362-1369
- [5] El Tahan M, Carrillo AP, Moore J, et al. Predictors of postoperative hospitalisation in women who underwent the Triple-P Procedure for abnormal invasion of the placenta[J]. J Obstet Gynaecol, 2018, 38(1): 71-73
- [6] Planutis A, Xue L, Trainor CD, et al. Neomorphic effects of the neonatal anemia (Nan-Eklf) mutation contribute to deficits throughout development[J]. Development, 2017, 144(3): 430-440
- [7] Hooper SB, Crossley KJ, Zahra VA, et al. Effect of body position and ventilation on umbilical artery and venous blood flows during delayed umbilical cord clamping in preterm lambs [J]. Arch Dis Child Fetal

- Neonatal Ed, 2017, 102(4): f312-f319
- [8] 赵采云,华绍芳.体质量 $\geq 2500\text{g}$ 小于胎龄儿相关危险因素及围产结局分析[J].天津医药, 2019, 47(3): 284-287
- [9] Beeravolu N, Mckee C, Alamri A, et al. Isolation and Characterization of Mesenchymal Stromal Cells from Human Umbilical Cord and Fetal Placenta [J]. Journal of Visualized Experiments Jove, 2017, 2017 (122)
- [10] Papanikolaou IG, Domali E, Daskalakis G, et al. Abnormal placenta-tion: Current evidence and review of the literature [J]. Eur J Obstet Gynecol Reprod Biol, 2018, 228: 98-105
- [11] Rathe M, MäLler M B, Greisen P W, et al. Successful management of transfusion-dependent congenital dyserythropoietic anemia type 1b with interferon alfa-2a [J]. Pediatric Blood & Cancer, 2018, 65(3): e26866
- [12] Brown, Jewel, Sinkey, et al. Maternal and Neonatal Morbidity Among Women With Sickle Cell Anemia and Sickle Cell Trait[J]. Obstetrics & Gynecology, 2017, 129(5): 184S
- [13] Morris G, Conner LM. Assessment of accuracy, fix success rate, and use of estimated horizontal position error (EHPE) to filter inaccurate data collected by a common commercially available GPS logger[J]. Plos One, 2017, 12(11): e0189020
- [14] Chang B, Yuan Z, Pu H, et al. Study of Gravity Effects on Titanium Laser Welding in the Vertical Position [J]. Materials, 2017, 10(9): e1031
- [15] Mehrjardi MZ, Shobeirian F. The role of the placenta in prenatally acquired Zika virus infection[J]. Virusdisease, 2017, 28(3): 1-3
- [16] Wang Q, Lash GE. Angiopoietin 2 in placenta-tion and tumor biology: The yin and yang of vascular biology[J]. Placenta, 2017, 56(5): 73-78
- [17] Macklin PS, Mcauliffe J, Pugh CW, et al. Hypoxia and HIF pathway in cancer and the placenta[J]. Placenta, 2017, 56(6): 8-13
- [18] Sandman CA, Curran MM, Davis EP, et al. Cortical Thinning and Neuropsychiatric Outcomes in Children Exposed to Prenatal Adversity: A Role for Placental CRH? [J]. Am J Psychiatry, 2018, 175 (5): 471-479
- [19] Heller HM, Ravelli A CJ, Bruning A HL, et al. Increased postpartum haemorrhage, the possible relation with serotonergic and other psychopharmacological drugs: a matched cohort study[J]. Bmc Pregnancy & Childbirth, 2017, 17(1): 166-177
- [20] Kawakita T, Reddy UM, Grantz KL, et al. Maternal outcomes associated with early preterm cesarean delivery [J]. American Journal of Obstetrics & Gynecology, 2017, 216(3): e1-e9
- [21] Tsuji M, Coq JO, Ogawa Y, et al. A Rat Model of Mild Intrauterine Hypoperfusion with Microcoil Stenosis[J]. J Vis Exp, 2018, (131)
- [22] Winger EE, Reed JL, Ji X. Early first trimester peripheral blood cell microRNA predicts risk of preterm delivery in pregnant women: Proof of concept[J]. Plos One, 2017, 12(7): e0180124
- [23] Crowther CA, Ashwood P, Mcphee AJ, et al. Vaginal progesterone pessaries for pregnant women with a previous preterm birth to prevent neonatal respiratory distress syndrome (the PROGRESS Study): A multicentre, randomised, placebo-controlled trial [J]. Plos Medicine, 2017, 14(9): e1002390
- [24] 焦云.晚断脐加有控性脐带牵拉管理在第三产程中的应用效果[J]. 国际护理学杂志, 2018, 37(9): 1217-1219
- [25] Zwiers C, Van KI, Oepkes D, et al. Intrauterine transfusion and non-invasive treatment options for hemolytic disease of the fetus and newborn-review on current management and outcome [J]. Expert Review of Hematology, 2017, 10(4): 337-344
- [26] Juiz NA, Solana ME, Acevedo GR, et al. Different genotypes of Trypanosoma cruzi produce distinctive placental environment genetic response in chronic experimental infection [J]. Plos Neglected Tropical Diseases, 2017, 11(3): e0005436
- [27] Erickson-Owens D, Mercer J. The Effects of Placental Transfusion on Placental Residual Blood Volume and 24 to 48-hour Hemoglobin and Serum Bilirubin in Term Newborns: A Randomized Controlled Trial [J]. Journal of Midwifery & Women's Health, 2017, 62(5): 41-43
- [28] Mercer JS, Ericksonowens DA, Collins J, et al. Effects of delayed cord clamping on residual placental blood volume, hemoglobin and bilirubin levels in term infants: a randomized controlled trial[J]. Journal of Perinatology, 2017, 37(3): 260-264
- [29] Werner H, Gasparetto TD, Daltro P, et al. Typical lesions in the fetal nervous system: correlations between fetal magnetic resonance imaging and obstetric ultrasonography findings[J]. Ultrasonography, 2018, 37(3): 261-274
- [30] 钟惠敏, 李霞, 王销颖, 等. 胎盘体积及胎盘血流灌注的变化与胎儿发育的关系[J]. 广东医学, 2018, 39(4): 559-561