ISP-2-3 Intrauterine tamponade using Bakri balloon catheter during cesarean section for placenta previa

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[Objective] Since 2009, our institute has been applying Bakri balloon for intrauterine balloon tamponade as a first choice to reduce undesired invasive management for postpartum bleeding. The aim of this study was to analyze the efficacy of intrauterine tamponade using Bakri balloon catheter during cesarean section for abnormal placentation. [Materials and Methods] Retrospective review of the medical records of patients who had undergone elective cesarean section for placenta previa, between July 2009 and July 2012 was performed. The surgery and insertion for the Bakri balloon catheter were performed by a single qualified operator (JYK). Bakri balloon was applied when a bleeding over 500ml and tachycardia were noted during the surgery. [Results] A total of 71 patients (low-lying 17, previa partialis and marginalis 11, previa totalis 42) underwent cesarean section for placenta previa, during the study period. Thirty eight patients (54%) required intrauterine balloon tamponade during cesarean section due to postpartum bleeding from the low uterine segment, of which 78.9% of cases was placenta previa totalis. And immediate hysterectomy was performed in 3 patients (42%) due to profuse bleeding. Of those who received the Bakri balloon uterine tamponade, 21.0% (18/38) required additional treatment such as bilateral uterine artery embolization (7/38) or hysterectomy (3/38) to achieve complete bleeding control. No mortality or balloon related complication was encountered. Balloon was more intended to bleeding control to placenta previa totalis and massive uterine bleeding. [Conclusion] Intrauterine tamponade using Bakri Balloon Catheter was efficient in managing postpartum bleeding following Cesarean Section for placenta previa. Patient should monitored continuously for signs of increased bleeding, uterine cramping, or deteriorating condition. Signs of deteriorating or non-improving conditions should indicate more aggressive management of patient postpartum bleeding.

ISP-2-4 Decreasing full-term neonatal birth weight over the past two decades in a single institute in Japan

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[Objective] To investigate whether full-term neonatal birth weight is decreasing or not. [Methods] Subjects were selected from the registration database of full-term singletons from a single local practitioner at two time points, 1991 (n = 750) and 2011 (n = 442). Maternal age, parity, and smoking habits were recorded. Baseline characteristics included pre-pregnancy body weight (BW), body mass index (BMI), BW before parturition, and weight gain during pregnancy. Neonatal birth weight and height were recorded. Variables correlated with neonatal size were investigated. [Results] Both male and female birth weight decreased (male: 3.248 ± 409 (n = 373) to 3.149 ± 430 g (n = 230) (P < 0.001), female: 3.148 ± 378 (n = 377) to 3.063 ± 343 g (n = 212) (P < 0.001)). Gestational age was shorter (40.1 ± 1.1 to 39.6 ± 1.1 weeks, P < 0.001). Pre-pregnancy maternal BMI did not change (20.7 ± 2.6, n = 750 to 20.5 ± 2.7, n = 442). Weight gain during pregnancy decreased (11.3 ± 3.8 to 10.8 ± 3.4 kg, P < 0.05) and was correlated with birth weight (P < 0.001). On multiple regression analysis, birth weight was inversely correlated with birth year, but was positively correlated with pre-pregnancy BMI and gestational age. [Conclusion] In addition to maternal slenderness, increasing lower weight gain during pregnancy and medical intervention by physicians may in part contribute to the decrease in full-term birth weight over the past two decades.

ISP-2-5 Why fetal heart rate monitoring cannot detect fetal brain hemorrhage.—Multi-fractal structural changes during fetal brain hemorrhage—

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[Objective] Fetal brain hemorrhage is an important cause of perinatal and neonatal mortality and morbidity. Continues heart rate monitoring does not show typical patterns during fetal brain damage, and this has been a major topic of discussion. We studied fetal heart rate changes during brain hemorrhage using an ischemia–reperfusion model of fetal mice. [Methods] Under anesthesia, episodic clipping and release of both uterine and ovarian arteries of pregnant mice at 17.5 days, fed normal feed (N group; n = 5) or fed junk food (J group; n = 5), was performed. In each group, the fetal heart rate recorded by fetal electrocardiograph was calculated and analyzed. [Results] All 5 fetal cases in the J group, had noticeable brain hemorrhage, which none in the N group, exhibited the condition. During heart rate analysis, for their multifractal structure (MFS), regulation of the heart rate, was noticed in the N group, while the STV part of MFS was broken in the J group. The LTV parts were the same in both groups. [Conclusion] It is well known that the LTV part of fetal heart variability from Doppler fetal monitoring systems are accurate, but not the STV part. This is the reason why brain hemorrhage cannot be detected with ordinary fetal monitoring systems. Fetal ECG will be expected to surpass this limitation.