

singleton pregnancy were identified. BMI was calculated based on pre-surgery weight and pre-pregnancy weight, and then used to identify 4 control patients (two matched for pre-surgery BMI, two matched for pre-pregnancy BMI) within 3 BMI points and 5 years of age. The primary outcomes were the rates of gestational diabetes or hypertensive disorders of pregnancy. Secondary outcomes included various neonatal outcomes: gestational age, birth weight, perinatal morbidity and mortality.

RESULTS: There was a significant decrease in rate of gestational diabetes (GDM) in bariatric surgery patients as compared to both control groups ($p < 0.01$). There was no significant difference in the rate of hypertensive disorders of pregnancy compared to both control groups. Rates of post-partum hemorrhage were lower after bariatric surgery (both $p < 0.05$). Additionally, neonates born to bariatric surgery patients were statistically smaller than those born to both BMI control groups ($p < 0.001$), with a significant reduction in macrosomia ($p < 0.01$), and an increase in SGA infants ($p < 0.05$). An increased rate of stillbirth in the bariatric surgery group was noted as well.

CONCLUSION: Bariatric surgery is associated with reduction in GDM in a subsequent pregnancy, as compared with both pre-surgery BMI and pre-pregnancy BMI matched controls, but perhaps at the expense of increased neonatal morbidity.

Table: Delivery Outcomes and Neonatal Outcomes of Pregnant Patients who have undergone Bariatric Surgery Compared to BMI-Matched Controls

Characteristics	Control Group A ^a (n=140)	<i>p</i> ^c	Cases ^b (n=70)	<i>p</i> ^d	Control Group B ^e (n=140)
Gestational age (wks)	39.1	0.34	39.0	0.03	39.2
Preeclampsia ¹	15 (10.7)	0.65	6 (8.6)	0.99	12 (8.6)
Gestational hypertension ¹	18 (14.3)	0.12	4 (6.6)	0.50	13 (9.7)
Total hypertension ¹	33 (21.5)	0.12	10 (14.3)	0.53	25 (17.9)
Gestational diabetes ²	21 (15.0)	<0.001	0 (0.0)	0.01	13 (9.3)
GDM or hypertension ³	51 (37.2)	0.001	10 (14.3)	0.03	38 (27.1)
Mean birth weight (g)	3463	<0.001	2951	<0.001	3351
Perinatal mortality	1 (0.7)	0.09	4 (5.7)	0.01	0 (0.0)

Data are n (%) unless otherwise specified.

¹Bariatric surgery patients with a subsequent pregnancy.

²Pregnant patients with a pre-pregnancy BMI matched to the BMI of the bariatric surgery patients before they surgery.

³Pregnant patients with a pre-pregnancy BMI matched to the BMI of the bariatric surgery patients before they became pregnant.

⁴Comparison of bariatric surgery patients to Control Group A.

⁵Comparison of bariatric surgery patients to Control Group B.

⁶Adjusted for history of preexisting chronic hypertension.

⁷Adjusted for history of preexisting diabetes.

⁸Adjusted for history of preexisting chronic hypertension and diabetes.

323 Preoperative intravascular balloon catheters and surgical outcomes in pregnancies complicated by placenta accreta—a management paradox

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OBJECTIVE: To examine the impact of preoperatively placed intravascular balloon catheters in pregnancies complicated by placenta accreta.

STUDY DESIGN: Retrospective study of pregnancies with pathology proven placenta accreta from 1990-2011.

RESULTS: A total of 117 cases with pathology-proven placenta accreta were reviewed. Fifty-nine subjects (50.4%) diagnosed prenatally with accreta had preoperative balloon catheters placed. Estimated blood loss was significantly lower in the group with preoperative balloon placement compared to those without balloons (2.2 L vs 2.8 L respectively, $p < 0.02$). Balloons were deployed intraoperatively in thirty of the fifty-nine subjects (51%). The decision to deploy the balloons was left to the operating surgeon, and in 29/30 cases anticipated or ongoing severe hemorrhage was the indication for deployment. Balloon deployment was associated with significantly greater blood loss (2.7L

vs. 1.7L, $P = 0.001$) and greater transfusion volumes (5.7u vs. 3.4u PRBCs respectively, $P = 0.02$). Two patients (3.3%) had balloon-related complications: one developed a femoral artery thrombus requiring thrombectomy and one developed a catheter site hematoma that was managed expectantly without further event.

CONCLUSION: Preoperative placement of balloon catheters was associated with overall reduced total blood loss. However, in cases where the balloons were deployed intraoperatively, blood loss and transfusion volumes were greater than in those without deployment. This paradox is likely the consequence of the balloons being deployed only in the setting of impending or actual catastrophic hemorrhage. Further studies with rigid protocol-driven use of balloon catheters are needed to address their true utility. To date, this study represents one of the largest series of cases with pathology-proven accreta in which preoperative intravascular balloon placement was routinely utilized.

324 Longitudinal study of sleep disordered breathing (SDB) in pregnancy

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OBJECTIVE: Evaluate SDB in the 2nd and 3rd trimesters (TM) using the validated Berlin Questionnaire (BQ) and assess maternal characteristics potentially predictive of SDB.

STUDY DESIGN: Healthy women with normal pregnancies, entering obstetric care Jan, 2010 - Jan, 2011 were recruited to undergo SDB risk assessment. The BQ has 3 sections: (1) snoring severity, (2) fatigue severity and (3) chronic hypertension or a BMI > 30 kg/m². High risk for SDB is present if at least 2 of 3 sections are scored abnormal. Assessments were made in the early 2nd and 3rd TMs. Potential predictors for SDB, included age, parity, race/ethnicity, neck circumference, BMI, weight gain, gestational diabetes, Mallampati tongue position score (0-4) and Friedman tonsil size score (1-4).

RESULTS: Of 499 consenting women the mean age was 23 y, 53% were multiparous, 81% were African American, and the mean BMI was 29 kg/m². Their initial evaluation was at a mean (SD) gestational age (GA) of 15.7 (4.3) wks, and 463 (93%) returned at a mean GA of 30.0 (1.0) wks. Initial neck circumference (mean=13.4), tonsil size score (mean=1.25) and Mallampati score (mean=2.57) did not change significantly between the 2nd and 3rd TMs. The overall prevalence of high risk for SDB in the 2nd TM was 34%, which increased to 40% in the 3rd TM. In univariate analyses, multiparity, BMI, age, and neck circumference were all significant predictors of 2nd TM high-risk BQ; multiparity, BMI, age, neck circumference, tonsil size and Mallampati score were significant predictors of 3rd TM high-risk BQ. However, in multivariable analyses, only BMI ($p < 0.0001$) and multiparity ($p = 0.03$) significantly predicted the 2nd TM high-risk BQ, while BMI ($p < 0.0001$) was the sole independent predictor of the 3rd TM high-risk BQ.

CONCLUSION: High-risk for SDB is common in an obstetric population with a mean BMI of 29 kg/m² and increases over gestation. Of the predictors assessed, BMI had by far the strongest association. In multivariable analyses, controlling for BMI, and parity, other predictors for SDB, were not significantly associated with a high-risk BQ.

325 Risk of preterm birth and low birth weight in women with congenital heart disease

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OBJECTIVE: Due to advances in cardiac care, the number of adults living with congenital heart disease (CHD) is increasing. Women with