

CASE REPORT

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# Severe maternal morbidity after gastric banding: A case report

Michelle Ann Kominiarek

## ABSTRACT

**Introduction:** Pregnancies occurring after bariatric surgery can experience surgical complications. This case report of severe maternal morbidity should prompt clinicians to have a heightened awareness of bariatric surgery complications, such as gastric band erosion, in pregnancy. **Case Report:** A 30-year-old gravida 1 presented at 11 weeks with epigastric pain after a laparoscopic gastric banding procedure performed three years ago. Her pain improved after the gastric band was deflated under ultrasound guidance. She returned one week later with a severe headache and three syncopal episodes. Her hemoglobin was 3.2 g/dl for which she received blood transfusions during her ICU admission. An upper endoscopy showed that the gastric band had completely eroded through the gastric mucosa. A laparoscopy under general anesthesia without complications. **Conclusion:** This case report of severe maternal morbidity should prompt clinicians to have a heightened awareness of bariatric surgery complications, such as gastric band erosion, in pregnancy.

Michelle Ann Kominiarek

**Affiliations:** MD, MS, Department of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine, Associate Professor, Northwestern University, Northwestern Memorial, Prentice Hospital, 250 East Superior Street, Suite 05-2175, Chicago, IL 60611.

**Corresponding Author:** Michelle Ann Kominiarek, Department of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine, Associate Professor, Northwestern University, Northwestern Memorial, Prentice Hospital, 250 East Superior Street, Suite 05-2175, Chicago, IL 60611; Email: mkominia@nm.org

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## INTRODUCTION

Between 1988–1994 and 2007–2008, the number of reproductive-age obese women rose by 64.2% [1]. This increase in the proportion of obese women was greater than any other age category. As obesity is associated with an increase in pregnancy complications, national guidelines recommend weight loss prior to pregnancy [2]. Bariatric surgery is the most effective treatment for weight loss [3]. Of further interest, the majority (80%) of patients having bariatric surgery are women who have a median age of 45 years [4]. Due to these statistics and also the fact that fertility improves after bariatric surgery, pregnancies that occur after bariatric surgery may be increasing [5]. As such, it is important for prenatal care providers to be familiar with the management of pregnancies after bariatric surgery and this includes a heightened awareness of potential bariatric surgery complications that can occur during pregnancy.

## CASE REPORT

A gravida 1 with a pre-pregnancy body mass index (BMI) of 26.0 kg/m<sup>2</sup> (height 162.5 cm, weight 70 kg) initially presented to the Obstetrical Triage at 11 weeks gestation with complaints of epigastric pain which was present, but intermittent ever since her laparoscopic gastric banding procedure performed three years ago in Mexico when she weighed 105 kg. She reported that “some of the fluid” was removed about a year ago in preparation for a pregnancy. In triage, she had little improvement in her pain, even after intravenous morphine, until the gastric band was completed deflated under ultrasound guidance by a physician from the general surgery team. During her triage evaluation, her hemoglobin was 12.0 g/dl and the remainder of the labs from that day was normal. She was discharged home and returned one week later with complaints of a severe headache, numbness in both hands, and three syncopal episodes. Her initial blood pressure was 113/62 with a pulse of 80 and hemoglobin of 3.2 g/dl which was confirmed on immediate repeat blood draw. She had no complaints of hematemesis, but noted blood in her stools for a couple days. Her physical exam was only remarkable for pallor. There was no guarding or rebound on her abdominal exam, and the guaiac test was negative. The working differential diagnosis was gastrointestinal bleeding vs. a hemolytic anemia. She received 5 units of packed red blood cells during her ICU admission. An abdominal and pelvic ultrasound did not show any free fluid. A rectus sheath hematoma was also considered, but an abdominal MRI scan did not find any evidence of this. On hospital day-#5, she agreed to have an upper endoscopy which showed that the gastric band had completely eroded through the gastric mucosa. The general surgery team removed the gastric band at 15 weeks gestation and repaired the gastric fundus via a laparoscopic approach under general anesthesia without complications because she was clinically stable at this time.

The remainder of her prenatal course was uncomplicated with the exception of excessive gestational weight gain (30 kg). She eventually had a normal spontaneous vaginal delivery at 38 weeks of a female infant weighing 2931 grams (50<sup>th</sup> percentile) with Apgar's of 9 and 9 at 1 and 5 minutes, respectively.

## DISCUSSION

Gastric banding is one of the most common bariatric procedures performed worldwide [6]. During this procedure, a band with a fluid filled balloon is laparoscopically placed around the gastric fundus which thereby limits a person's ability to ingest food and consequently reduces nutrient intake. This procedure may be more attractive for reproductive age women considering a pregnancy after bariatric surgery as compared to other more permanent bariatric procedures because the volume of the balloon is adjustable.

This case presentation is notable for discussion for three primary reasons: diagnosis of bariatric surgery complications in pregnancy, timing of bariatric surgery complications in pregnancy, and the management of an adjustable gastric band in pregnancy. Complications that are unique to gastric banding include gastric perforation, gastric necrosis, gastric prolapse, band leakage, band migration/slippage, and port complications (e.g., infection, breakage). Band erosion is considered a rare complication of gastric banding (<1% incidence, 0–11% prevalence), but a recent report of gastric banding procedures over a 13-year follow-up period reported that 85% of the 80 patients experienced a complication and 30% had a band erosion [7, 8]. It has been suggested that gastric band complications may increase in pregnancy due to increased intra-abdominal pressure [9] and case reports and other cohort studies have described complications related to band slippage in pregnancy [10].

In this particular case, we do not know when the band started to migrate, but suspect that there may have been issues that predated the pregnancy given the long-standing history of epigastric discomfort. The complete release of fluid from the band at 11 weeks gestation is also an unlikely explanation for the band migration and eventual erosion. Furthermore, 11 weeks' gestation does not coincide with the time of maximal intra-abdominal pressure. The patient's profound anemia upon presentation represents a near-miss event in the continuum of maternal morbidity and mortality [11]. Although complaints such as epigastric discomfort are common in pregnancy, its presentation in women after bariatric surgery should prompt further evaluation related to bariatric surgery complications regardless of the gestational age, timing of bariatric surgery, and type of bariatric surgery as several case reports have detailed maternal deaths related to delayed diagnosis of these complications [12, 13].

Currently, there is no consensus on optimal gastric band management in pregnancy and there are no randomized controlled trials that compare elective deflation of the gastric band in pregnancy vs. maintenance of the fluid [14]. Maintaining the balloon volume throughout pregnancy may limit gestational weight gain yet completely deflating the gastric band may also ensure appropriate nutrition. A potential disadvantage of routine deflation is excessive gestational weight gain, as occurred in our patient, and its associated adverse outcomes such as macrosomia and cesarean delivery. Prior studies have described recommendations for leaving the gastric band inflated for the duration of the pregnancy [15] and active management of the gastric band according to symptoms and/or gestational weight gain [16]. Current management should be individualized and consider variables such as maternal weight, symptoms such as nausea and vomiting or abdominal pain, gestational weight gain, fetal growth, maternal opinions and requests, and any other ongoing pregnancy complications.

## CONCLUSION

The evaluation for bariatric surgery complications should not be delayed on account of a pregnancy. Complications from bariatric surgery can occur at any time after a procedure and throughout all trimesters of a pregnancy. There is no standard management of a gastric band in pregnancy and further research is needed to evaluate the options of elective band deflation vs. maintenance of the fluid in the gastric band.

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## Author Contributions

Michelle Ann Kominiarek – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

## Guarantor

The corresponding author is the guarantor of submission.

## Conflict of Interest

Authors declare no conflict of interest.

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