

# Pregnancy and Dumping Syndrome post-bariatric surgery: a case report

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## SUMMARY

This case report discusses dumping syndrome in the post-bariatric mother. Diagnostically a challenge, the symptoms of postprandial hypoglycaemia mimic common early gestation complaints and may go undiagnosed, thus requiring a high index of suspicion. As weight-loss surgery gains traction, it is pertinent to note at booking and follow-ups. The pregnancy is at-risk and multidisciplinary team management is central. The mainstay of management remains diet modification. There have been case reports of successful medical treatment of dumping syndrome in pregnancy with good maternal and fetal outcomes. However, more data is needed regarding the usage of these medical treatments in pregnancy.

## KEY WORDS:

*Bariatric surgery, pregnancy, post-bariatric surgery pregnancy, dumping syndrome, obesity, postabsorptive hypoglycaemia*

## INTRODUCTION

As more women in the reproductive age are being offered bariatric surgery, complications like “dumping syndrome” will be increasingly seen in pregnancy. Studies show a reduction in obesity-linked maternal and foetal diseases and complications post-surgery.<sup>1</sup> However, bariatric itself propounds its own set of unique complexities requiring a multidisciplinary team approach and post-bariatric pregnancy should be considered as a high-risk pregnancy. Complications like early and late dumping syndrome, micro- and macro-nutrient deficiencies and surgical complications present subjectively similar to the myriad of non-specific early pregnancy complaints, i.e., nausea, vomiting, jitteriness or palpitations, bloatedness, etc.<sup>2</sup> This entirety poses a diagnostic and therapeutic challenge. Here, we report a case of dumping syndrome in a post-bariatric mother.

## CASE REPORT

A 38-year-old G2P1 woman was booked at the local Maternal Child Health clinic in her first trimester and under follow-up at the antenatal specialist clinic for cervical surveillance following an early neonatal death secondary to extreme prematurity (an arabin pessary was inserted at 22 weeks when transvaginal sonography noted cervical shortening).

Her past surgical history is significant for a bariatric surgery in 2011. Antenatal follow-up fared uneventfully until 24 weeks when she complained of giddiness, cold sweats and palpitations. Her symptoms were relieved shortly by drinking Coke but would recur after several hours, causing her to drink more coke for temporary relief resulting in a vicious cycle.

There were no failure symptoms nor thromboembolic red flags. Investigations revealed a ECG was normal, urine dipstick 2+ for glucose, RBS of 4.8mmol/L, a haemoglobin of 11.2 g/dL. Her antenatal card revealed two MOGTTs done at 12 weeks and 13 weeks with results of 5.7/3.4mmol/L and 3.3/2.44 mmol/L respectively and late dumping syndrome was suspected.

Warded immediately, her symptoms and glucose levels were closely monitored under multidisciplinary team effort. Further history revealed a recent non-compliance to the post-bariatric diet. Due to polyphagia, she began taking sugary drinks and oily foods. In ward, her hypoglycaemia hovered dangerously low at 1.2-2.2 mMol/L 2-3 hours post meal, requiring close titration of her dextrose IV drip. Special diet arrangements were made. Thyroid function tests and C-peptide level taken during hypoglycaemia was normal; serum iron, calcium, B12, Folate and vitamin D levels revealed depleted B12 levels and weekly IM B12 injections were commenced. With diet adjustments, she was able to maintain normo-glycaemia and was discharged with close combined follow up.

Her remaining antenatal period fared uneventfully until term, where she was electively admitted at 40 weeks for an induction of labour (she developed late onset gestational hypertension at 38 weeks, not requiring treatment). Cervical dilation on admission was 3 cm upon arabin pessary removal. However, her labour ended with an emergency caesarean section performed for failed induction. Intraoperatively, it complicated with uterine atony (EBL 1L) that responded to uterotonics. Post-operatively, she recovered well and both mother and baby were discharged post op day two.

## DISCUSSION

One in five women are obese when they conceive and morbid

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obesity is resistant to non-operative weight loss techniques. Many women of child bearing age willingly undergo weight-loss surgery as obesity is known to cause negative self-esteem, depress natural conception, and pose complications to pregnancy and long-term health; it also carries a raised likelihood of miscarriage.<sup>3</sup>

The National Institute for Health and Care Excellence (NICE) guidelines recommend considering bariatric surgery for the morbidly obese (BMI >40 kg/m<sup>2</sup>) or for those with a BMI between 35 and 40 kg/m<sup>2</sup> in the presence of other comorbidities and where other nonsurgical methods have proven unsuccessful.<sup>4</sup> Bariatric surgery maybe restrictive (limits the amount of food ingested), malabsorptive (bypasses parts of the small intestine) or a combination of both; in relation to restrictive bariatric surgery, dumping syndrome should be especially considered.

Postulated as multifactorial in origin with a poorly understood pathophysiology, dumping syndrome may be early or late. Symptoms of early dumping occur within an hour of meals and are attributed to accelerated transit of ingested meals.

Late dumping, or postprandial hypoglycaemia as seen in our patient, has an onset of 1-3 hours after high glycaemic meals. Partly incretin-mediated, it is thought to occur in response to hyperinsulinemia following rapid glucose transit into the jejunum. This results in a reactive hypoglycaemia and manifestations of cold sweat, tremors, palpitations, impaired concentration, and near-syncope. Together, these clinical presentations pose surgical, medical and obstetric challenges and are best multidisciplinary tackled for optimal maternal-foetal outcomes.<sup>5</sup>

Hypoglycaemic risks increase in the previously euglycemic bariatric mother due to the physiological increase in insulin secretion and sensitivity in early gestation. In view of this, the standard OGTT frequently precipitates the upsetting symptoms of early and late dumping, as seen in the above-discussed patient. The advised and more tolerable alternative

screening methods for gestational diabetes is home capillary blood glucose (CBG) profiles and/or continuous glucose monitoring (CGM) over 1-2 weeks around 24-28 weeks of gestation.<sup>2</sup>

Diet modification is the key in managing late dumping syndrome. Refined carbohydrates are best removed in place of complex carbohydrates, protein rich alternatives and low GI substitutes. Several pharmacological agents have been used in the non-pregnant state, namely Diazoxide (*FDA Pregnancy Category C*), Octreotide (*FDA Pregnancy Category B*) and Acarbose (*FDA Pregnancy Category B*) but data in pregnancy is still limited.

### CONCLUSION

As awareness and availability of bariatric surgery increase, the number of successful conception amongst post bariatric mothers rise in correlation, as will complications. A multidisciplinary approach is imperative for a successful pregnancy. While dumping syndrome commonly arises in the post-bariatric mother, data regarding safety of medical treatment in pregnancy remains limited. Diet modification remains the mainstay of management in dumping syndrome and should be emphasised.

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