OBES SURG (2012) 22:517–518
DOI 10.1007/s11695-011-0502-2

LETTER TO THE EDITOR

Letter to the Editor: Long-Term Experience with Duodenal Switch in Adolescents

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Published online: 27 August 2011

To the editor:

We read with great interest the recent article by Marceau et al. describing their center's experience with the duodenal switch procedure in 13 obese adolescents including those with Prader–Willi syndrome (PWS) [1]. Previous authors have noted that the use of the duodenal switch procedure cannot be recommended for most adolescents due to the adverse risk-to-benefit ratio [2].

PWS is a complex genetic disorder localized to chromosome 15 affecting an estimated 350,000–400,000 individuals worldwide and considered among the most common causes of life-threatening obesity [3]. Although some co-morbidities associated with PWS including hypoventilation are commonly seen in obesity, others such as osteoporosis, growth hormone deficiency, adrenal insufficiency, hypogonadism, altered pain tolerance, and inability to vomit with a propensity to develop acute gastric dilation/necrosis pose unique clinical challenges [4–7].

Marceau et al. describe three adolescents with PWS, 15 to 16 years of age, who underwent a duodenal switch procedure with preoperative BMIs of 78, 57, and 48 kg/m^2, respectively. Pre-operative co-morbidities include nonalcoholic fatty liver disease (66%), sleep apnea (66%), and diabetes (33%). All three individuals had prolonged post-operative hospitalizations (13 to 22 days) due to respiratory issues, sepsis, and adrenal insufficiency. Each individual experienced initial weight loss followed by significant weight regain warranting consideration of surgical revision within 4 to 10 years after the initial procedure. One of the three individuals died 4 years after the initial bariatric procedure due to infectious complications following revision of a sleeve gastrectomy and common channel [1]. Although nutritional markers were carefully detailed in Table 3 for the ten non-PWS adolescents, minimal longitudinal nutritional information was reported for the three adolescents with PWS. Nonetheless, the authors concluded, "We strongly believe that surgery presently remains the sole treatment capable of improving the quality of life of PWS children and their parents."

The analyses and conclusions appeared flawed in the report by Marceau et al. in relation to obese adolescents with PWS. We re-analyzed the data where appropriate using the *t*, chi-square, and Fisher's exact tests. Longitudinal assessment of micro-nutrient status could not be analyzed based upon the information provided in the article. In comparison to other obese adolescents who underwent duodenal switch, the PWS individuals had lesser long-term change in BMI (−27 vs. −3 kg/m^2, respectively; p=0.011),

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higher rate of revision due to poor response ($p=0.039$), greater weight regain post-procedure ($p=0.005$), and greater post-operative length of stay (5.1 vs. 16.3 days, $p<0.0001$). Furthermore, several publications have reported successful outcomes for prevention and treatment of obesity in PWS with dietary intervention including reports of severely obese adolescents and young adults [8–12]. In addition, the advent of growth hormone therapy has led to increased stature, muscle mass, and reduced fat mass for individuals with PWS diagnosed at an early age in lieu of surgical procedures in those affected with this genetic disorder [12, 13]. These results, and our own personal experiences caring for individuals with PWS over many years, directly contradict the conclusions of Marceau et al.

We are grateful to the authors for adding to the published experience of bariatric procedures for treatment of obesity in Prader–Willi syndrome. The data presented by Marceau et al. provide further support for the conclusions of a recent review article that bariatric procedures have an adverse risk-to-benefit ratio for treatment of obesity in individuals with PWS and should be regarded with significant caution and trepidation. Although bariatric procedures may produce weight loss in individuals with Prader–Willi syndrome, the need for continuous monitoring of nutritional status/restriction of food intake during the early post-operative period as well as subsequent years remains present to avoid weight regain [14]. Treatment regimens involving supervised reduced-energy diets with vitamin/mineral supplementation, restricted access to food, daily exercise programs, and approved growth hormone therapy are both safe and therapeutically efficacious [12, 14–16].

Conflicts of Interest None.

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