Dani Yardeni, Ped Health Res 2017, 2:3
DOI: 10.21767/2574-2817-C1-001

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Reversal of morbid obesity in adolescents combining laparoscopic sleeve gastrectomy with a multidisciplinary treatment program

Background: Obesity has become one of the most important public health problems in children and adolescents. Standard treatment for obesity in adolescents repeatedly shows only modest weight lost and surgery has become the last option for many morbidly obese adolescents. Laparoscopic sleeve gastrectomy (LSG) is a bariatric surgery that has shown good results with a relatively low rate of complications in morbidly obese adults. Currently, data on the efficiency of this procedure in the pediatric age is still scarce. Further, we use a multidisciplinary team that include pediatric surgeon, pediatric endocrinologist, pediatric psychiatrist, sport medicine specialist, dietitian, psychologist, and social worker in the care of morbid obese adolescents referred to LSG, as required by the Israeli Ministry of Health in its guidelines on adolescent bariatric surgery. The aim of this study was to examine the ability of LSG backed by a multidisciplinary team in reversing morbid obesity in adolescents.

Methods: Data were prospectively collected prior to surgery and at 3, 6, and 12-month intervals from all adolescents undergoing LSG at our institution and included age, gender, height, weight, body fat percentage, comorbid conditions, postoperative length of stay, operative and postoperative complications. Severe obesity was defined as body mass index (BMI) above the 99th percentile of US CDC growth curves in adolescents, as defined by the American Academy of Pediatrics.

Results: For 20 months, 18 morbidly obese adolescents have undergone LSG at our institution, of these 12 were male and 6 were female. The mean age was 16.6 ±1.6 years (range 13.7-18.5 yrs), mean preoperative body mass index (BMI) was 47.5±7.4 kg/m2 (range 41.5-72.4) and mean body fat percentage was 47.3 ±5.3% (range 39.5-57.3%). Preoperative complications of obesity were non-alcoholic fatty liver (55.5%), hypertension (38.8%), diabetes mellitus (22.2%), obstructive sleep apnea (27.7%), and pseudotumorcerebri (16.6%) as well as behavioral and emotional complications associated with the obese condition. There were no intraoperative complications. The mean postoperative length of stay was 4.3 (range 3-8) days. Postoperatively, three patients developed cholelithiasis, two of them underwent laparoscopic cholecystectomy and one was treated successfully with ursodeoxycholic acid. One patient developed multiple vitamin deficiencies with severe lower extremity weakness that slowly resolved over 3 months. In 8 patients with 12-month data post-surgery, mean BMI decreased by 40% to 32.5±6.2kg/m2, body fat percentage decreased by 40% to 28.7 ±12.3 (range 17.7-45.6), lean body mass reduced from baseline values by only 10% and the percent excess weight lost was 82±22% (range 51-100%). After one year, 6 of the 8 patients were no longer considered morbidly obese and 4 of them were no longer obese. The patients who did not reverse their obesity status had additional psychological morbidity and were not complying with the diet and exercise prescriptions.

Conclusion: LSG is safe and effective operation for morbidly obese adolescents and the use of a multidisciplinary team which administers diet, exercise and emotional support, greatly enhances its success.

Biography

Dani Yardeni has completed his MD in 1989 at the Faculty of health scince Ben Gurion University in Israel and did his residency in Pediatrics Surgery at Afula hospital. In the year 1998 worked at the Red Cross children hospital in Cape Town, S.A. Did fellowship in Ann Arbor Michigan in 2001-2002. In the year 2006 was sent by the Israeli Goverment to work in Ron hospital in Nauru. Since 2016 workes as a Pediatric Surgeon in Haddasa medical center in Jeerusalem.

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