Obezite cerrahisinin erkeklerde cinsel yaşam, depresyon ve yaşam kalitesi üzerine olan etkileri

Effects of obesity surgery on sexual function, depression and quality of life of males

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Özet

Amaç: Obezite, cinsel yaşam kalitesinin yanında genel yaşam kalitesini de düşüren bir bozukluktur. Bariatrik cerrahi, obezite ve eşlik eden komorbiditeler için en etkili tedavi yöntemidir ve medikal tedavilerden de üstündür. Bununla birlikte, bariatrik cerrahinin cinsel yaşam kalitesi üzerine etkilerini inceleyen yeterli sayıda çalışma bulunmamaktadır. Biz bu çalışmamızda bariatrik cerrahinin, özellikle daha sık uygulanan laparoskopik sleeve gastrektomi (LSG) tekniğinin cinsel işlevler, depresyon ve yaşam kalitesi üzerine etkilerini araştırmayı amaçladık.

Gereç ve Yöntem: Kliniğimizde Nisan 2014 ile Mart 2015 tarihleri arasında LSG yapılan, dışlama kriterleri sonrasında uygun bulunan toplamda 22 erkek hasta çalışmaya dahil edildi. Hastaların yaş, boy, kilo ve beden kitle indeksi (BKİ) verileri ile operasyon öncesi IIEF (Uluslararası Erektil Fonksiyon İndeksi), BECK (Hastalar için Beck depresyon ölçeği), SF-36 (Yaşam kalitesi indeksi) doldurduldu ve sonuçları kaydedildi.Ayrıca, operasyondan sonra hastaların kilo verme miktarları ve BKİ düşüşleri tespit edildi.

Bulgular: Preoperatif dönem ile karşılaştırıldığında postoperatif dönemde erektil ve orgazmik fonksiyon, cinsel ilişki ve genel yaşam tatminliği, PCS ve MCS skorlarında anlamlı derecede artış saptandı. İki dönem arasında cinsel istek ortalamaları arasında istatistiksel olarak anlamlı bir farklılık gözlenmedi.Postoperatif dönemde BECK depresyon ölçeği puanlarında anlamlı azalmalar saptandı.

Sonuç: Biz bariatrik cerrahinin kilo kontrolü sağlanmasının yanında erkeklerde cinsel fonksiyon ve yaşam kalitesinin arttırılmasında da faydası olduğunu düşünüyoruz.

Anahtar Kelimeler: obezite, cinsel işlev, bariatrik cerrahi, sleevegastrektomi, yaşam kalitesi

Abstract

Background: Obesity decreases the quality of sexual life as well as the overall quality of life. Bariatric surgery is the most effective treatment method for obesity, it is better than the medical treatment options. However, there is not sufficient number of studies about the effects of bariatric surgery on the quality of sexual life yet.

Aims: So we aimed to research about the effects of bariatric surgery, the laparoscopic sleeve gastrectomy (LSG) method which is being more and more often applied, on the sexual functions, depression and quality of life in our study.

Materials and Methods: Out of all patients who had LSG surgery due to obesity earlier in our center, 22 applicable male patients were taken under research after a brief exclusion criteria application. Age, height, weight,body mass index (BMI) data of these patients were recorded before the operation. IIEF, Beck depression inventory Short form-36 were filled for the patients. Also, the weight loss amounts and BMI decreases of the patients after the operation were recorded.

Results: Statistically meaningful increases were observed in the post-operation Erectile, Orgasmic Function, Intercourse Satisfaction, Overall satisfaction, PCS-MCS scores compared to the pre-operation. No statistically meaningful change was observed in the post-operation sexual desire averages when compared to pre-operation. When compared with the pre-operation values; meaningful decreases were detected in the post-operation BECK depression inventory scores. **Conclusion:** We think that the bariatric surgery not only causes serious amount of weight loss, but also enhances the sexual function and the quality of life among males.

Keywords: obesity; sexual function; bariatric surgery; sleeve gastrectomy; quality of life

Introduction

Obesity is one of the most important health problems in both developing and developed countries today because of the diseases it brings along with it. The number of people with obesity has nearly doubled since the year 1980. According to the data of World Health Organization (WHO), it is detected that 1.6 billion adults are overweight. And among these individuals, approximately 300 million females are obese (1,2). While 67% of the population of United States of America (USA) are classified either as obese or overweight, in many European countries, this ratio is around 40-50% (3). According to the data of 2011, over 40 million of children under 5 years old are overweight (1,2). It is known that there are approximately 500 million obese adults and that this number is on the rise. Approximately 2,8 people a year die as a result of being overweight or obese (4). Obesity prevalence was found to be 22,3% in the Obesity Prevalence Study (TURDEP) in Turkey, in 1997 (5). And in the TURDEP II study that was conducted in 2010, the obesity rate in Turkey was found to have increased to 32%. This striking fast increase is alarming (6). While weight loss can be achieved with non-surgical methods, it was observed that 66% of these patients reached their former weight in a time period as short as 24 months. The compatibility that the patient will have with the diet during the medical treatment application might form an idea about the patient's compatibility with post-operational treatment. Surgical treatment of morbid obesity stands out due to obesity's possibility of causing deaths as a results of additional diseases and becoming epidemic (7). Today, bariatric surgery is the most effective treatment modality that causes 15% or more weight loss than the normal procedure (8). Taking mortality, morbidity, cost, patient satisfaction and most importantly the expected weight loss rate into consideration, laparoscopic sleeve gastrectomy (LSG) is one of the most preferred surgical procedures today (9). More than 220.000 bariatric surgical procedures are applied in a year in USA (10). Obesity can accompany with comorbidities such as type 2 DM, hypertension (HT), heart diseases, hyperlipidemia and obstructive sleep apnea (11). Obesity decreases the sexual life quality as well as the overall quality of life (12). Bariatric surgery is the most effective treatment method for obesity and the comorbidities that come along with it and it is superior to the medical treatment options (13). However there is not sufficient data about the effects of bariatric surgery on the sexual life quality post-operation. Though the relation between obesity and the sexual functions is not well defined completely, not many but some studies emphasise that sexual dysfunction (SD) can occur after bariatric surgery. While at the beginning SD was completely conceptualized as psychological, today it is considered as a multifactorial disease such as neurobiological, hormonal and psychosocial (14,15). It is assumed in the studies made in USA that 43% of the females have SD (16). It is shown that this rate increases with age and decreasing estrogen (14). Some diseases including obesity were associated with increasing SD incidents and low sexual function (17). In this study, we aimed to research about the effects of especially the Laparoscopic Sleeve Gastrectomy (LSG) technique of bariatric surgery which is being more and more widely used today, on the sexual functions, depression and quality of life of males.

Methods

22 male patients who had LSG surgery for obesity between the dates April 2014 and March 2015 were included in the study. The patients who met the exclusion criteria listed below were excluded from the study. Exclusion criteria's were below: (I) The patient being unwilling, (II) the patient having had treatment for sexual function disorder before, (III) the patient having a known mental or psychiatric disorder, (IV) the patient having had any kind of surgical or non-surgical weight loss treatment before, (V) the patient being under the age of 18, (VI) presence of a neurological disease that can be linked to SD. 22 male patients who met the criteria above were taken under research and the data were evaluated in pre-operation and post-operation periods Age, height, weight and body mass index (BMI) data of all patients were recorded before the operation. IIEF (International Index of Erectile Function Questionnaire), BECK: Beck depression inventory and SF-36 (Short Form-36) were filled for the patients and the data were recorded. Also, the weight and BMI decreases of the patients were recorded. IIEF: International Index of Erectile Function; It is a form that was developed by Rosen and his friends and it is one of the most commonly used forms that is applied to the males

that have sexual complaints. It consists of 15 questions that examines the patient's ability of reaching and maintaining a sufficient erection for sexual function. Index; It consists of subgroups such as erectile function, orgasmic function, sexual desire, intercourse satisfaction and overall satisfaction. 6 questions including questions 1-5 and 15th are for measuring erectile function and according to the scoring system "6-10 points is Severe ED, 11-16 points is Medium ED, 17-25 points is Mild ED and 26-30 points is No ED". BECK Depression inventory: It is a 21 multiple choice question self-evaluating inventory that is applied to children and adults to measure the severity of anxiety. 0-21 points is evaluated as mild anxiety, 22-356 points is evaluated as average anxiety, 36-63 points is evaluated as severe anxiety. SF-36: It is a reliable, valid and very often used standard in evaluating the quality of life. Scale consists of 36 subjects and these ensures the measurement of 8 dimensions. These are; vitality (energy), physical function, pain, general health,physical, emotional and social role restrictions, mental health. Scoring is summed up in 2 topics that are PCS: physical component summary and MCS: Mental component summary.

Surgery Technique: The patients were operated by using LSG method. Operations were conducted by general surgeons. Sleeve gastrectomy (SG) was first started to be operated as the restrictive component of Duodenal Switch surgery. This method was taken into practical use as a risk reducing method in the patients who are at high risk and who may not be able to tolerate long term procedures (18). LSG became a more often used, safe and efficient primary bariatric surgical method that is highly popular among the surgeons and the patients (19). With this method, a narrow, tubular stomach is formed. After the large curvature is freed from 2-3 cm proximal of pylorus up to the angle of HIS (incisura cardiaca), stomach resection is practiced. Posterior dissection is applied by making angle of HIS visible so as not to leave a large fundus pouch. Bending of the stomach from incisura angularis is prevented by fixating the sleeve tube by stitching the omentum or gastrocolic fat. It is thought that the weight loss effect is caused by the fact that LSG is restricting, PYY and GLP-1 hormones increase with the decreasing ghrelin and food passing to distal fast (20,21). LSG is preferred on super obese and on the patients who are BMI<50 kg/m2 and those who want to have this method. It was noted that in the systemic examination of the 2500 patients (average BMI: 51.2 kg/m2) who were operated with this method, the average weight loss ratio was 55%, complication ratio was 8% and mortality ratio was 0.19 % (22). While diabetes remission in LSG was announced as 66.2%, 15% of the patients might need a new bariatric intervention afterwards (23). LSG has become a very often preferred method alone or alongside the other methods in treatment of morbid obesity (24). Statistical Analysis: The study was planned as a prospective study. While evaluating the findings obtained during the study IBM SPSS Statistics 22 (IBM SPSS, Turkey) program was used for he statistical analyses. The compatibility of the parameters to the normal range was evaluated with Shapiro Wilks test during the evaluation of the study data. Along with the definitive statistical methods (average, standard deviation) while evaluating the study data, student t test was used in comparisons between two groups of parameters that show normal distribution in the comparison of quantitative data, Mann Whitney U test was used in comparison between two groups of parameters that don't show normal distribution. Paired sample t-test was used in the same group comparison of parameters that show normal distribution and Wilcoxon sign test was used in the same group comparison of parameters that don't show normal distribution. Pearson correlation analysis was used in analyzing the relations between parameters that are compatible with normal distribution. Coherence was evaluated at $p<0.05$ level.

Results

The study was conducted with 22 male cases that had LSG between the dates April 2014 and March 2015. The ages of the cases vary between 24 and 51 years and the average of the ages is 34.59±8.07 years.Statistically meaningful decrease is detected in the average post-operative BMI values, body weight, scores of IPSS and BECK depression inventory in comparison with the post-operative values (For all of them p: 0.001; $p<0.01$). Statistically meaningful increases were observed in the scores of postoperation Erectile Function, Orgasmic Function, Intercourse satisfaction and Overall satisfactioning comparison with the pre-operation values (p:0.002; $p<0.01$ for orgasmic function, 0.001; $p<0.01$ for others). No statistically meaning-

ful changes were observed in the post-operation sexual desire average rates when compared with pre-operation rates (p>0.05). Statistically meaningful increases were observed in PCS and MCS when pre-operation rates were compared with post-operation rates (for all p: 0.001; p<0.01)(Table 1).

Discussion

There is information that shows the relation between obesity and male SD. Obesity and insulin resistance were associated with peripheral vascular disease by causing endothelium dysfunction and atherosclerosis (25,26). Endothelium dysfunction and atherosclerosis are risk factors for SD (27,29). Along with these, the endocrinopathy, aromatization activity, psychological – thermal effects, sleep apnea, leptin, minor toxins, inflammatory and obstructive epididymitis pathologies that come along in the obese males, are the other factors of SD pathophysiology (30). It was noted that there is improvement in the sexual functions in the non-surgical weight loss cases (31). It was claimed that this improvement was a result of the improvement in insulin resistance, hypogonadism and hypertension (26). It was predicted that with this same mechanism, the insulin resistance would improve with the weight loss after the bariatric surgery and correspondingly erectile function would improve (32). However, despite all these mechanisms, the improvement in the erectile functions in males after obesity surgery is controversial. Dallal et al. indicated that the erectile functions of 95 patients that had gastric bypass surgery normalised when compared with their own age group (33). Di Frega et al. reported in their study that there is improvement in erectile functions and infertility. They endeavoured to explain this with the hypothesis of especially the decrease of the absorbtion of such elements as zinc after the gastric bypass surgery (34). ED is more frequently observed in obese people due to endotel dysfunction and low levels of testosterone (40). It was reported that total testosterone and free testosterone levels increased after bariatric surgeries (35-38). In the studies that were conducted in vitro, it was noted that gonado tropin releasing hormon (GNRH) and LH secretions of insulin increases when the insulin resistance disappears and consequently testosterone levels increase (39). Alagna et al. showed that the sexual life quality of approximately

Table1: Evaluation of Post-operation study parameters compared to the pre-operative parameters in males

	Pre-Operation	Post-Operation	P
	Avg±SS (median)	Avg±SS (median)	
BMI	49,57±6,21	38,98±5,51	[1]**0,001****
Weight	149,73±21,34	118,23±19,13	[1]**0,001****
Erectile Function	15,23±8,71	20,14±9,13	[1]**0,001****
Orgasmic Function	7,18±3,25 (9)	8,32±2,19 (10)	[2]**0,002****
Sexual Desire	8,27±1,61 (8)	8,95±0,72 (9)	[2]**0,086**
Intercourse Satisfaction	7,41±3,07 (6)	9,32±2,71 (10)	[2]**0,001****
Overall Satisfaction	4,36±2,22 (4)	5,68±2,12 (5)	[2]**0,001****

[1] Paired Sample t Test

[2] WilcoxonSign Test

**p<0.01

60% of the patients improved after bariatric surgery (41). And Reis et al. indicated in a study they conducted that there is improvement in the sexual functions after bariatric surgery (42). In contrast to the studies above, Ranasinghe et al. noted that in the 145 male patients that they operated laparoscopic gastric banding (LGB) surgery on, did not have any improvement in their IIEF scores, in fact they stated that the erectile and orgasmic functions deteriorated (43). Also in our study, in parallel with the literature, improvement was observed in the sexual functions of male patients after the bariatric surgery. When the IIEF scores are analyzed, erectile function average increased from pre-operation score of 15.23±8,71 (average ED) to 20.14±9.13 (mild ED) post-operation in a period of time as short as 6 months. Meaningful improvement was detected on the index parameters such as orgasmic function, intercourse satisfaction and overall satisfaction rates when pre-operation period is compared to the post-operation period. However, it was detected that there was no change in the sexual desire parameter. We consider that the positive effect on coital position of the post-operational dramatic weight loss supported the improvement in the sexual functions. The effects of obesity on depression and quality of life of male patients was also evaluated with BECK depression inventory and SF-36 form in our study. Pre-operation BECK depression inventory average score was evaluated as mild anxiety with 15,36±2,4 points; it has shown improvement by decreasing in the post-operation period. In the study that was conducted in

Turkey in 2010, on the effect of the rheumatoid arthritis disease on the patient's overall quality of life average PCS that was applied to the control group was found 51.28 and MCS was found 41.43 (44). However in our study the average PCS that was checked post-operation in the obese patients was detected 34.5 and MCS was detected 40.92 and it is observed to be lower than the society's average. Post-operation PCS and MCS scores increased to 42.9 and 46.7 and these improvements were found to be statistically meaningful. Many studies in the literature has shown that the post-operation weight loss improved the quality of life and the sexual function. Multidisciplinar studies on this issue should be conducted to explain the physiopathological and psychosocial factors in the future.

Conclusion

The negative effects of gradually increasing obesity disease on sexual functions is undeniable in today's World. We think that along with causing serious weight loss, bariatric surgery increases the sexual function and the quality of life.

Compliance with Ethical Standards

Conflict of Interest: Author, Fatih Uruç, declares that he has no conflict of interest. Author, Serkan Akan, declares that he has no conflict of interest. Author, Bekir Aras, declares that he has no conflict of interest. Author, Çağlar Yıldırım, declares that he has no conflict of interest. Author, Özgür Haki Yüksel, declares that he has no conflict of interest. Author, Timuçin Aydın, declares that he has no conflict of interest. Author, Ayhan Verit, declares that he has no conflict of interest.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards

Informed consent: Informed consent was obtained from all individual participants included in the study.

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