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Case Report

Exploring Sudden Extreme Weight Loss as a Risk Factor for Pelvic Organ Prolapse Progression

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ABSTRACT

Multiple pathologies are associated with obesity, from cardiovascular diseases to diabetes. In addition, obesity is a documented risk factor for pelvic organ prolapse. The evidence suggests that there are benefits to surgically induced weight loss in urinary incontinence and other pelvic floor dysfunctions. With the advent and widespread popularity of bariatric surgery, many have sought this as treatment option for obesity and indeed pelvic floor disorders.

This is a case report of a 33 year old obese female who initially had a feeling of heaviness in her pelvis and subsequently underwent a sleeve gastrectomy. After rapid weight loss she presented with a mass protruding from her vagina.

Extreme weight loss over a short period of time may be associated with pelvic organ prolapse progression. Clinicians must keep this in mind when counseling patients for treatment of obesity or pelvic organ prolapse.

Keywords: Pelvic Organ Prolapse (POP), Bariatric surgery, Pelvic Floor Dysfunctions (PFD), Obesity, Weight loss

Introduction

Obesity, defined as abnormal or excessive fat accumulation that presents a risk to health [1], is a complex multifactorial disorder affecting the global population [2]. Approximately 500 million individuals worldwide are affected by obesity [3]. Its prevalence is expected to reach 51.1% in the United States alone [4], and is estimated to become a staggering 78% in Saudi women by the year 2022 [5].

The standard measure of obesity is body mass index (BMI), which is derived from an individual's weight in kilograms divided by the square of their height in meters. The result categorizes individuals into the following groups: underweight, normal, overweight, and obese. An adult with a BMI of more than 30 is considered obese [3,6].

Pelvic organ prolapse (POP) is multifactorial in etiology. Obesity has been documented as a risk factor for POP among several variables such as age, menopause, complicated obstetric history, parity, spontaneous vaginal deliveries, long-term heavy lifting, family history, varicose veins, and hemorrhoids [7].

As obesity is considered a contributing factor in Pelvic Floor Dysfunction (PFD), many have investigated the positive effect of weight loss on PFD, specifically when surgically induced [8]. Multiple studies documented the positive effect of bariatric surgery on urinary incontinence (UI) and possibly other PFDs [9,10].

Surgically-induced weight loss and subsequent reduction in BMI is linked with significant improvement in UI [10]. However, there are no studies linking sudden weight loss from bariatric surgery to PFD progress. This case report aims to assess the effect of sudden surgically induced weight loss on the progression of POP.

Case Presentation

A 33-year-old Saudi female was referred to the Urogynecology clinic with symptoms of POP for about one year. Initially she presented to the clinic with a chief complaint of "something protruding from my vagina." She had first noticed the issue twelve months prior to presentation and that it was progressively worsening over six months. It had reached a point where it started to affect her ability to work and the quality of her life. She was non-sexually active, therefore, there were no reports of sexual dysfunction in any of the domains. The patient did not complain of any symptoms of urinary incontinence or constipation. She is nulliparous with regular menstrual cycles of 28-30 days in duration with 5-6 days of flow.

Past medical history reveals that she is receiving treatment for mild cerebellar tonsillar herniation, in the form of Gabapentin 300mg daily and following with neurology.

Past surgical history reveals that she underwent a sleeve gastrectomy about 18 months prior to presentation. At the time of surgery, she was morbidly obese, weighing 150 kg, with a BMI of 45, Obesity class III. Two years prior to the sleeve gastrectomy, she felt pelvic heaviness but no protrusion in her vagina or any other symptoms.

She underwent the procedure and lost weight at a rate of approximately 10 kg a week. One year later, she had lost about 70 kg and the feeling of heaviness became more severe, to a point where she reported a progressively enlarging mass protruding through the vagina, she weighed 83 kg at presentation.

On examination her Pelvic Organ Prolapse Quantification measurements were the following:

Point A anterior (Aa) -1	Genital hiatus (GH) 3
Point A posterior (Ap) -1	Perineal body (PB) 3
Point B anterior (Ba) -1	Total vaginal length (TVL) 10
Point B posterior (Bp) -1	Posterior fornix (D) 0
	Cervix/Vaginal cuff (C) +4

In addition, an Urodynamic study was performed, the results of which were normal and there was no evidence of a latent urinary incontinence.

Management & Outome

The patient was diagnosed with stage III uterine prolapse and underwent abdominal sacrohystropexy using polypropylene mesh. The mesh was bisected to form a 'Y'-Shape, and was sutured to both sides of the anterior cervicouterine junction, after being passed through the broad ligament and bladder dissection. The posterior single limb of the lambdoid structure was placed on the pelvic floor within the sacrum and sutured to the anterior longitudinal ligament after careful dissection. A vaginal rectocele repair was then performed. The procedure was without complication and was well tolerated by the patient. She was discharged on the third post-operative day in good condition. The patient was followed up 3 weeks later in the urogynecology clinic. There were no complaints of pelvic heaviness and she was a stage 0 on a POP-Q.

Discussion

Pelvic organ prolapse is defined as the downward movement of pelvic organs, (including the bladder, uterus and rectum) from their anatomical position into the vaginal canal, causing protrusion of the vaginal wall [11].

Obesity, a common disease worldwide, has been listed as a risk factor for POP among several other variables such as age, menopause status, difficult obstetric history etc [4]. As obesity is clinically associated with prolapse and the degree of severity, many patients opt for surgical intervention as a means of weight reduction. Seventy five percent (75%) of women considering bariatric surgery are affected by PFDs, specifically POP [12].

Being overweight or obese causes a progressive increase in intra-abdominal pressure, which results in elevated hemi diaphragms and development of abdominal wall hernias and PFDs [13]. Weight control has been shown as an effective form of management of pelvic floor dysfunction in obese patients [11,12]. However, sudden weight loss from bariatric surgery has not been associated with progression of POP. It is frequently documented as an appropriate intervention.

The incidence of sudden massive weight loss causing progression of POP is rare and there is limited data on the pathophysiology and progression of POP in relation to sudden weight loss. The rapid loss of the intra-abdominal and pelvic fat is a possible contributing factor to the fast progression of uterine prolapse in this case. The hypothesisis that the extra visceral abdominal and pelvic fat may have aided in providing support to the pelvic organs. Although she was being treated for a mild tonsillar herniation the patient is not diagnosed with any genetic connective tissue disorders.

A sleeve-gastrectomy is an extreme form of calorie restriction, this places the body in a catabolic state. Although this state serves well in the catabolism of fat it has been demonstrated to cause catabolism of muscle mass and strength [14]. She lost a significant amount of muscle mass as well which may have been a contributing factor in the progression of her pelvic organ prolapse due to a loss of support from the pelvic muscles and fascia.

Although bariatric surgery has been reported to improve PFDs, this is the first reported case of progression of POPs due to bariatric surgery. Further studies on the effect of the rate of weight loss as well as the optimal method in achieving that weight loss following bariatric surgery on POP are needed.

Due to the extremely conservative and religious culture the "feeling of heaviness" she felt before the sleeve gastrectomy could not be properly assessed in terms of examination. Furthermore, she did not allow any pictures to be taken or published due to the sensitive nature of the issue and her religious conservatism.

Conclusion

The case presented here has the usual clinical manifestations of POP although without the typical risk factors such as parity and age. The extreme weight loss in this case over a short period of time may suggest that progression of POP may be associated with the rate at which weight is lost. Clinicians and surgeons should remain aware of this side effect when offering weight reduction procedures as an option of treatment for PFDs. The manner in which the weight loss is achieved must also be scrutinized and preventive measures should be advocated such as exercise along with calorie restriction.

Conflict of interests

The authors declare that there is no conflict of interests.

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