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Thematic Article

Problematic Alcohol Consumption after Bariatric Surgery - A Summary of the Current State of Research and Experiences from Practical Work

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Abstract

Obesity is a widespread health problem and Weight Loss Surgery (WLS) promotes the most weight reduction and health improvements in obese patients todate. However, many psychological problems such as problematic alcohol consumption or Alcohol Use Disorder (AUD) are observed in the treatment which follows after surgery. Prevalence rates indicate that up to 20% of WLS patients develop alcohol related problems and AUD after surgery. There are risk factors in both the surgical procedure itself and the post-surgical period, which could influence the emergence of AUD. The amount of alcohol consumption prior to surgery or the presence of eating disorders are among some other discussed risk factors, but a clear risk profile has not been formulated yet, and there is also a lack of proven developmental patterns for the post-surgical development of AUD in the bariatric patient. Existing explanatory models focus on unresolved psychological issues and a tendency towards external coping mechanisms, influencing the pre-surgical obese state and prompting the post-surgical development of AUD. Screening tools for AUD exist, but are not fully adapted on patients after WLS yet. Guidelines and treatment recommendations regarding AUD after Bariatric Surgery (BS) are still lacking. In our own practical experience, at the Center for Obesity and Metabolic Medicine in Winterthur, Switzerland, a long-term interdisciplinary treatment in a specialized center for bariatric patients, promoting a well established relationship with the medical staff and familiarity with the psychological counselors, has shown a positive effect towards the early detection and treatment of WLS patients with post-surgical AUD.

Keywords: Alcohol use disorder; Bariatric treatment; Obesity; Weight loss surgery

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Abbreviations

WLS: Weight Loss Surgery
AUD: Alcohol Use Disorder
BS: Bariatric Surgery
RYGB: Roux-en-Y-Gastric Bypass

Introduction

Obesity is a major health problem worldwide. In 2016, 39% of the population over the age of 18 were overweight and 13% were obese [1]. During the past years, the number of surgeries performed for weight loss has constantly risen [2,3]. Surgical treatment of obesity has become the most effective obesity treatment in terms of weight loss and reduction of both mortality and risk for developing chronic health conditions [4-6]. While post-operative physical and mental health improve on the first run studies on longer term outcomes in patients who have undergone Weight Loss Surgery (WLS) show mixed results [7,8]. Longer term post-surgical problems include weight regain [8], re-establishment of past eating disorders [9,10], higher prevalence rates for suicide and development of alcohol use disorder (AUD) [11-14]. Prevalence rates for AUD in post-surgical Bariatric Surgery (BS) patients range between 7.3% and 21.4% [15]. Generally, the risk for the development of alcohol related problems seems to be elevated after WLS [16], especially in Roux-en-y Gastric Bypass (RYGB) procedure. In a comprehensive cohort study, including 11,115 patients, the risk for hospitalization and inpatient care due to alcohol related problems almost doubled in RYGB patients compared to patients with gastric banding over a period of 8.6 years after WLS. In another prospective study in Sweden [17], 2010 patients with RYGB, gastric banding or vertical banded gastroplasty were observed over a follow-up period of between 8 to 22 years. Patients with RYGB had the highest risk for post-surgical AUD followed by vertical banded gastroplasty, whereas patients with gastric banding had a similar risk for AUD compared to healthy controls. These findings imply another important focus on the onset of AUD after WLS, mainly for the duration of time after WLS. Study findings show a gap between date of WLS and an onset of AUD of up to two years, the so called « honeymoon phase ». However, the risk for AUD after WLS seems to increase over time in general. In a longitudinal assessment of BS, the LABS-2 assessment [18], it was found that in a sample of 884 women with RYGB, 6.3% developed alcohol related problems over a post-surgical period of 7 years. Moreover, 3.3% showed symptoms of alcohol dependence and 5% reported alcohol related harm. Risk factors for the development of post-surgical AUD include sex, with men having a higher risk for post-surgical AUD, younger age, pre-surgical history of AUD and the pre-surgical extent of alcohol consumption [19], which is of importance especially in the year before surgery.

Additional factors include tobacco use in general, lower ”belonging” interpersonal support and attention deficit hyperactivity disorder [20]. Further it seems that belonging to racially or ethnically diverse groups also augments the risk for post-surgical AUD [21]. When addressing psychological risk factors, there seem to be similarities concerning mental health conditions which influence the onset of AUD as well as obesity and obesity related eating disorders, i.e. depression, social anxiety and PTSD [22]. Regarding PTSD this seems to be the case for both eating disorders and AUD especially when sexual abuse has occurred. Specific risk factors prompting to a later development of a post-surgical AUD have not yet been clearly identified [23,24]. There could potentially be a bias with regards to prevalence and risk assessment between the established numbers of pre-surgical existence of AUD and post-surgical occurrence of AUD. It has been argued that obese patients wanting BS might underreport their alcohol consumption which leads to the above mentioned bias. However, weight loss after BS seems not to be influenced by a substance use history [25].

Explanatory Models

Current etiological models on the onset of AUD after WLS include physiological and psychological explanatory models. On a physiological level alcohol absorption with RYGB is faster [26] and alcohol hydrogenase is reduced as the stomach, mainly relevant for the chemical processes of alcohol digestion, has been circumvented and therefore partially left out in the digestion processes. Furthermore, effects of alcohol seem to be stronger as peak alcohol levels are elevated and the duration of alcohol degradation seems to be longer [27]. However, these physiological alterations cannot be observed in other WLS such as gastric banding or sleeve gastrectomy [28]. From a psychological perspective, a simplistic explanation of the post-surgical onset of AUD would be to think in terms of an addiction transfer. Up to 30% of obese people in weight loss treatment are suffering from an eating disorder [29], and strains of addictive eating behavior can be seen in up to 25% of obese people [30]. It could be argued that obese people with pre-surgical eating disorders or signs of food addiction develop a past-surgical behavioral transfer, from addictive behaviors occurring with food, towards addictive behaviors with alcohol [31]. The rewarding or stress reducing effect of highly palatable foods (i.e. food with high amounts of sugar or fat) cannot be induced in large quantities due to the restrictive surgery and therefore patients switch to alcohol, which has the same relaxing effect [32]. Furthermore in the case of RYGB, this effect is experienced faster, stronger and over a longer time period. However, a simple explanation by addiction transfer is also seen as critical as it does neglect the complex psychological framework of obesity and obesity related behaviors [33]. Obesity and eating behavior within this complex framework are described as a reaction to different psychosocial stressors, unmet psychological needs, a stress induced reduction of the basal metabolic rateor altered response time in cortisol secretion [34,35]. Furthermore, findings regarding pre-surgical occurrence of eating disorders and post-surgical emergence of AUD are mixed [36,37]. In an exploratory study by, 24 patients with RYGB were interviewed while hospitalized for addiction problems. The study identified interdependence between already existing unresolved psychological problems (experiencing depression and anxiety problems), self-identified emotional/addictive eating behavior and AUD. Interviewed patients also admitted that the stronger effects of alcohol after RYGB had negatively influenced their post-surgical pathological alcohol consumption. During these interviews patients stated that they feel they could have been better informed with regards to the risk of AUD before the surgical procedure which indicates that patients were to a certain extent unaware of the higher risk for AUD after WLS. Further insight towards a deeper understanding of the mechanisms leading to a development of post-surgical AUD is provided in an exploratory study by using semi structured interviews in 8 patients, after RYGB with a post-surgical onset of AUD. The authors suggest a more sophisticated explanatory model towards the development of post-surgical onset of AUD. Their model takes into account already existing, unresolved psychological issues such as experienced traumatization (especially linked to a history of sexual abuse), loss of protection due to obesity, psychological problems such as anxiety and depression and other, mainly internally unchanged issues such as unsatisfying every-day life routines. Obesity related eating behaviors such as emotional eating and eating disorders are described as external coping mechanisms on a behavioral level [38]. After WLS has occurred and the obese state is changing, a first phase of extreme positive feelings often takes place (« honeymoon phase »), but once the individual realizes that old psychological problems have persisted or new stressors have emerged, the emotional state returns to its original pre-surgical state. When the gap between internally unchanged issues and a lack in comforting experiences enlarges, due to the emergence of an unpleasant psychological state, new external coping mechanisms are provoked. The authors suggest that this leads to drinking to experience « a new buzz » and to find a new behavioral substitution to produce an emotional state of comfort. The authors refer to this process as « filling the void » of the pre-existing, even pre-obese psychological state. While qualitative research shows interdependence between the psychological state, obesity and post-surgical AUD, there is still a lack in research explaining the link between the psychological state, physiological alterations after WLS and post-surgical physiological and psychological problems such as AUD. One possible model, which assists in explaining these relationships further, might be the allostatic load model [39]. This model takes into account psychological stress factors and links them with the physiological stress response and health related problems. In the allostatic load model, adaption to stress (allostasis) is measured over several physiological parameters. Once the human body fails to cope with the external stress stimuli, a dysregulation in the physiological stress response occurs (allostatic load) which sets a person at risk for mental and physical health problems. On the behavioral level, the human organism develops behavioral coping mechanisms to newly compensate for the allostatic load and to reclaim allostasis. Examples of existing studies show a connection between measured physiological allostatic load and drinking [40,41] smoking [42] and eating behaviors [43,44]. However, relatively few studies on the allostatic load in bariatric patients in combination with AUD exist to date [45-47]. Additional studies in this area will facilitate a greater understanding of the bridge between the psychological state, the physiological stress reaction and dysfunctional behavioral patterns. In conclusion, the emergence of AUD in post-surgical WLS patients can be seen as interplay of pre- and post-surgical existing psychological problems, internal psychological issues in the individual as well as an interaction between the physiological state and behavioral patterns.

Implications for Diagnostics and Treatment

A variety of evaluated and recommended diagnostic instruments for AUD screening exist [48]. In most cases these are brief questionnaires consisting of a small number of questions. However, the application of such tools before or after BS is not mandatory. In the US,

commonly applied are AUDIT (Alcohol Use Disorders Identification Test) [49] and AUDIT-Consumption (AUDIT-C) [50], both validated instruments with a good specifity and sensitivity in various populations. However, specifity and sensitivity of those instruments for BS patients before or even more after BS seem to be lower compared to other patient populations. In the US heavy drinking is considered when men under the age of 65 consume more than 5 drinks per day and women and all adults above the age of 65 consume more than 4 drinks per day [51]. It has been claimed that this definition should be revised for patients with WLS, especially with RYGB. Patients should be informed prior to surgery on the risk of problematic alcohol use after BS in order to raise awareness for problematic alcohol consumption [52]. Further recommendations include screening for alcohol use before and after BS, but additional guidance or a standardized routine is missing. Diagnostics rely to a large extent on self-reporting which is seen as a central problem in the detecting of pre- and post-surgical AUD. The need for a strict post-surgical follow up process, including standardized screening instruments, is claimed with short-term interventions once AUD is detected and a transfer into more specialized treatment if the severity of alcohol related problems is high or refractory.

Practical Experiences

In this section a broad overview of internal processes at the Winterthur medical practice in Switzerland is given. These processes are specifically related to patients wishing to undergo BS. The first-person narrative was chosen advisedly. Our medical practice specializes in obesity and consists of an interdisciplinary setting with internists, dieticians and psychologists. A medical examination and psychological screening is mandatory before a patient can undergo BS, according to regulatory authorities [53]. Practically all of our BS candidates undergo the psychological screening on-site. The psychological screening consists of a one-hour interview, where eating habits are determined and an oral screening for eating disorders, depression, anxiety disorders, PTSD, alcohol and other substance consumption and the current life situation is enquired (Figure 1). Furthermore, patients are informed about psychological problems which can occur after BS during the abovementioned psychological screening, especially with regards to the possibility of developing alcohol dependence. Besides the psychological feasibility for BS the interview helps to establish first contact with a psychologist and as a result reducing retention against psychological counseling. Most of the patients remain on our site for post-surgical treatment and the prescribed annual medical control. This often leads to the establishment of a long-term relationship with our medical staff. Our personnel are trained in detecting problematic alcohol use and the standardized post-surgical evaluation also includes questions regarding alcohol consumption. If psychological problems such as AUD are detected, patients are referred to the already known psychologists on-site. In our practical experience, we observe different developmental patterns. Whereas some patients have no past history with AUD before WLS, others have had AUD in the years before WLS or at least a noticeable, yet not pathological, alcohol consumption before BS. While some of the patients develop problematic alcohol consumption surprisingly fast, others progress slowly into forms of AUD, with the latter being more difficult to detect. The onset of problematic alcohol use is in many cases linked to experiencing stressful life events such as relationship breakups or loss of entitlement. However, some patients do not experience such events, but rather endure chronic stressful life situations including long term relationship problems or long-lasting family conflicts.

The therapeutic approach towards patients with AUD comprises of two steps. Firstly, the psychological screening is repeated and the actual social and psychological situation is determined. By initially working on the dysfunctional alcohol consumption, unresolved psychological issues can be addressed in the longer term during a second step. The duration of treatment varies greatly and not every patient is willing and able to withdraw from alcohol completely. In severe cases, patients are referred to an inpatient stay in specialized clinics. Altogether, we can claim that we can alter the problematic alcohol consumption in many cases with an interdisciplinary collaboration in our obesity-specialized medical center and that a long-lasting relationship with the medical staff helps in early detection and treatment of AUD in our WLS patients (Figure 1).

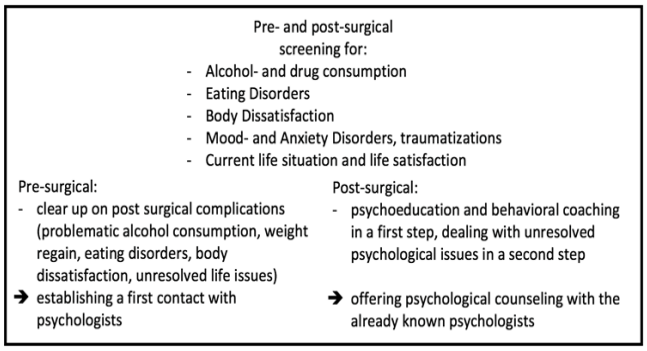

Figure 1: Pre- and post-surgical psychological screening and psychotherapeuticintervention routine at the Center for Obesity and Metabolic Medicine Winterthur, Switzerland.

Conclusion

Although WLS is an effective and helpful treatment for obesity, post-surgical, problematic alcohol consumption is often observed. Pre-surgical assessment of the risk for AUD in the post-surgical course of treatment, as well as post-surgical detection of AUS is difficult, especially due to self-reporting and lack of standardized screening routines. Health professionals dealing with WLS patients should pay attention to the surgical procedure applied in their patients and additionally on the time since the surgical intervention took place. Several other risk factors for the development of AUD in the BS patient have been narrowed down, yet a broader comprehensive framework with established risk profiles and clear developmental patterns is still lacking. Future research should address those issues in more depth. In practical experience, the treatment of BS patients in a specialized setting with long term, well established relationships with the medical staff can help to increase the detection and treatment of AUD in post-surgical WLS patients. Through experience, it has also proven beneficial if patients become acquainted with the process of counseling and working with psychologists during procedures prior to surgery in order to reduce retention with psychological counseling regarding AUD in the post-surgical course of treatment.

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Conflict of Interest

The author declares no conflict of interest with any company or institution.

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