Circumferential Abdominoplasty After Massive Weight Loss Following Bariatric Surgery: Indications, Operative Techniques, And Outcomes—A Systematic Review And Meta-Analysis

Thesis

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Contents

List of Abbreviations

BMI	:	Body mass index
BOMSS	:	British obesity & metabolic surgery society
BPD	:	Biliopancreatic diversion
CBT	:	Cognitive–behavioural therapy
CHD	:	Coronary heart disease
CI	:	Confidence interval
CT	:	Computed tomography
CVD	:	Cardiovascular disease
DALY	:	Disability-adjusted life-year
DIEP	:	Deep inferior epigastric perforator
eGFR	:	Estimated glomerular filtration rate
EQ-5D	:	Euroqol-5 Dimensions
GB	:	Gastric banding
GBP	:	Gastric bypass
GI	:	Gastrointestinal
HDL	:	High-density lipoprotein
LAGB	:	Laparoscopic adjustable gastric banding
LDL	:	Low-density lipoprotein
MWL	:	Massive weight loss
NAFLD	:	Non-alcoholic fatty liver disease
NICE	:	National Institute for Health and Care Excellence
OR	:	Odds ratio
OSA	:	Obstructive sleep apnoea

PRISMA	:	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
QALY	:	Quality-adjusted life-year
RCT	:	Randomised controlled trial
RR	:	Relative risk
RYGB	:	Roux-en-Y gastric bypass
SD	:	Standard deviation
SF-36	:	Short Form questionnaire-36 items
SG	:	Sleeve gastrectomy
VBG	:	Vertical banded gastroplasty

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INTRODUCTION

The number of individuals that can be classified as obese, class I or higher is increasing. The latest figures from the USA show that 36.7% of the adult population is obese. ***(NCHS Data Brief. 2012)***

Class I obesity is defined as a body mass index (BMI) of 30-34.9 kgm. ***(National Obesity Observatory, 2012)***

Some of the obese are able to lose weight by dietary changes and exercise, while others have to resort to surgery. Bariatric surgery is a way to achieve lasting weight loss in the obese and to reduce the prevalence of risk factors such as diabetes, hypertriglyceridemia, hyper-uricemia and not least, total mortality. ***(Sjöström et al., 2007; Sjöström et al., 2004; Pontirolli, Morabito, 2011)***

With bariatric surgery, the mean weight loss is 47.5% of the total body weight when performed as adjustable gastric banding, 61.6% when performed as gastric bypass, 68.2% when performed as gastroplasty and 70.1% when performed as duodenal switch or biliopancreatic diversion. ***(Buchwald et al., 2004)***

Most patients are content with the achieved weight loss, but it usually includes undesirable elements in the shape of loose skin, especially corresponding to the abdomen, upper arms, thighs, chest, back, laterally on the back, silverside, proximal to the knee as well as on the

cheek. This loose skin causes discomfort, such as infections with fungi and itching, physical discomfort, and hampers physical activity, which patients may experience as psychologically and socially inhibiting. ***(Bioo¨rserud et al., 2011; Kirzl et al., 2003)***

Body contouring surgery seeks to alleviate some of the discomfort caused by the excessive loose skin with the following procedures e abdominoplasty, lower body lift, upper body lift, brachoplasty or thigh lift. ***(Shermak, 2012)***

Long-term follow-ups show that the quality of life is significantly improved by body contouring surgery and that this improvement appears to be permanent. ***(van der Beek et al., 2012)***

The post-massive-weight-loss body contouring surgery is not free of risks. It is often necessary with long incisions in the skin, which is not of the best quality, and the patients typically have other co-morbidities. The most frequent observed complications are: haematoma, infection, seroma, wound dehiscence, necrosis, asymmetry, lymphoedema, unsightly scarring, influenced sensibility/ neuropathy and deep venous thrombosis (DVT). ***(Michaels et al., 2011)***.

Aim of the work

The aim of this study is to to summarize surgical indications, operative techniques, outcomes, complications of circumferential abdominoplasty procedures following bariatric surgery.

EPIDEMIC OF OBESITY

A- Introduction:

Obesity is a complex, multifactorial, and largely preventable disease affecting, along with overweight, over a third of the world's population today. If secular trends continue, by 2030, an estimated 38% of the world's adult population will be overweight and another 20% will be obese. In the USA, the most dire projections based on earlier secular trends point to over 85% of adults being overweight or obese by 2030. While growth trends in overall obesity in most developed countries seem to have leveled off, morbid obesity in many of these countries continues to climb, including among children. In addition, obesity prevalence in developing countries continues to trend upwards toward US levels ***(Health, United States, 2015)***.

B- Epidemiology of obesity:

Overweight and obesity are defined based on body mass index (BMI), which is determined as weight (kg) divided by height^2 (m). A healthy BMI range is 18.5–24.9 kg/m^2. Overweight is defined as a BMI from 25–29.9 kg/m^2, and obesity is defined as BMI ≥ 30 kg/m^2.[5] Obesity can be further subdivided based on subclasses of BMI as shown in **Table 1**. Waist circumference can be used in combination with a BMI value to evaluate health risk for individuals ***(Stecker and Sparks, 2006)***.