Post Bariatric Surgery Abdominoplasty

An Essay

Submitted for partial fulfillment of Master Degree in General surgery

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2017

Acknowledgement

First and foremost I feel always indebted to ***ALLAH*** the most kind and merciful.

I owe my deepest appreciation to my supervisor **Prof. Dr. Ashraf Farouk Abadeer**, Professor of general surgery, Faculty of medicine, Ain Shams University for his continuous optimism regarding this work, encouragement, enthusiasm and support for this study.

I also express my deepest appreciation to my supervisor **Dr. Fady Makram Benjamine** lecturer of general surgery, Faculty of medicine, Ain Shams University, who suggested this topic to me for his continuous supervision and precious advices for writing a good essay.

I owe more than thanks to my parents, my brother and my sister for their non-stop motivation, sincere backup and countless favors.

Kero Gerges

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List of Abbreviations

ASIS	:	Anterior Superior Iliac Spine.
BMI	:	Body Mass Index.
HLT	:	High Lateral Tension Abdominoplasty.
MWL	:	Massive Weight Loss.
NSAID	:	Non Steroidal Anti-inflammatory Drugs.
WRAP	:	Wide rectus abdominis muscle plication.

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Introduction

Obesity remains one of the leading health issues in today's society and could lead to decrease in the life expectancy **(Olshansky S. et al, 2005).**

Defined as having a body mass index (BMI: weight in kg /height in m^2) greater than 30, obesity has reached epidemic proportions mainly because of poor diets and sedentary lifestyles **(Aly A., 2006).**

For the obese individual who has exhausted a program of regimented diet and exercise, bariatric surgery has evolved into an effective solution. Massive weight loss not only leads to greater functional capacity but also improves the overall health of the patient **(Buchwald H. et al., 2004).**

Patients who experience massive weight loss are left with disfiguring skin laxity; this aesthetically displeasing consequence can impede the patient's psychological, as well as functional improvement and therefore necessitates excision to achieve a flat abdomen **(Savage R., 2001).**

Abdominal wall surgery was first described in the 19^{th} century focused on excision of redundant skin for repair of large umbilical hernias. Kelly published one of the first

reports on the use of abdominoplasty in this century in a trial to correct excess abdominal fat and skin **(Kelly H., 2006)**.

The use of liposuction and abdominoplasty has revolutionized the concept of the body contouring. Abdominoplasty will repair the underlying muscles which are plicated and liposuction will contour the overlying fat **(Illouz Y., 2000)**.

Concern must be taken to other affected areas with skin laxity such as the trunk, hips, thighs, arms, and breasts. After MWL, many patients present with multiple folds or rolls of skin and subcutaneous fat laterally and posteriorly in addition to a large abdominal redundancy. Buttock ptosis is also present. The skin redundancy that exists circumferentially needs to be addressed surgically to achieve a more complete contouring **(VanGeertruyden et al., 1999).**

Aim of the work

The aim of our work is to discuss abdominoplasty used for patients with massive weight loss after bariatric surgery.

Anatomy of the Abdominal Wall

Introduction

The abdominal wall is bounded superiorly by the xiphoid process and costal margin, and inferiorly by the inguinal ligament, pubic bones and the iliac crest **(Suleiman S. and Johnston D., 2001).**

The superior boundary is as follows from medial to lateral: the xiphoid process in the midline then the costal margin extends from the seventh costal cartilage at the xiphisternal joint to the tip of the twelfth rib. The lowest part of the costal margin lies in the mid-axillary line and is formed by the inferior margin of the tenth costal cartilage **(Borley N., 2008)**.

The inferior boundary is as follows from lateral to medial: the iliac crest, which extends from the tubercle of the iliac crest to the Anterior Superior Iliac Spine (ASIS) then the inguinal ligament, the pubic tubercle, the pubic crest and the symphysis pubis in the midline **(Borley N., 2008)**.

Embryology of the Abdominal Wall:

The abdominal wall develops from the lateral plate of intraembryonic mesoderm which later becomes segmented into proliferating somites forming the abdominal wall. As the lateral plates grow and folds over, four folds are made **(Sabiston D. and Lyerly H., 1994)**.

The cephalic fold matures into the epigastric abdominal wall, the foregut, the stomach and the mediastinal contents (figure 1). The caudal fold matures into the hypogastric abdominal wall, the colon, rectum and bladder. The two internal folds mature into the lateral part of the abdominal wall and midgut. All of these segments blend in the midline at the umbilicus **(Sabiston D. and Lyerly H., 1994)**.

At an early stage, the abdominal wall is composed of a membrane of connective tissue which is replaced by muscular buds from the dorsal myotomes. These muscular buds are segmentally connected to their corresponding neurovascular bundles and then fuse to form the definitive muscles **(Sadler T., 1990)**.