Circumferential Abdominoplasty

Thesis

Submitted for partial fulfillment of the master

Degree in general surgery

BY

TAREK FATHI AFIFI

M.B.B.CH

Under supervision of

Prof. DR. MOSTAFA SOLIMAN

Professor of General Surgery

Faculty of medicine, Cairo University

Prof. DR. ASHRAF ELSEBAIE

Assistant Professor of General and plastic surgery

Faculty of medicine, Cairo University

DR. MAGED REHAN

Lecturer of general surgery

Faculty of medicine, Cairo University

Faculty of medicine

Cairo University

2010

Acknowledgment

First of all, thanks to GOD the most gracious and merciful who allowed and helped me in many ways to gain this knowledge and achieve this work.

I would like to express my deepest gratitude to Prof. Dr. Mostafa Soliman, Professor of General Surgery, Cairo University, for his sincere help and advice which were vital for the successful completion of this thesis. Prof. Dr. Mostafa Soliman's invaluable contributions, dedicated professionalism and cheerful cooperation were without parallel throughout my years as a resident. I will always be indebted to him for his help, guidance and unstinting support that kept me up against many challenges I had to face regularly.

I would also like to acknowledge and thank Prof. Dr. Ashraf Elsebae, Professor of General and Plastic surgery, Cairo University, for his guidance and kind assistance in the preparatory stages of this thesis. He helped me to obtain the clinical material and answered my many inquiries to ensure the factual content is correct.

I would like also to thank Dr. Maged Rehan, for his guidance and kind assistance in the preparatory stages of this thesis.

I would also like to thank my family, colleagues and friends for their splendid encouragement and support to bring this work to life.

Abstract

This study included two groups of ten patients each, group I consisted of patients with redundancy at the ventral part of the abdomen, where traditional abdominoplasty was done to them. While group II consisted of patients with redundancy of the whole circumference of the abdomen, circumferential abdominoplasty was done to them.

In this study, all of the patients were females. This may be attributed to the socioeconomic class of Kasr Alaini patients who were the subject of this study.

The mean age of the studied groups of patients in this work was 37.3 years.

In this work the incidence of associated ventral hernias was (25%) and that for medical diseases was (40%)

Key Word:

Study and compare traditional abdominoplasty and circumferential abdominoplasty.

بسم الله الرحمن الرحيم

﴿ وَقُلِ اعْمَلُوا فَسَيَرَى اللَّهُ عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ وَسَتُرَدُّونَ إِلَىٰ عَالِمِ الْغَيْبِ وَالشَّهَادَةِ فَيُنَبِّئُكُم بِمَا كُنتُمْ تَعْمَلُونَ ﴾

الآية ١٠٥ سورة التوبة

List of contents

Topic……page

List of Tables

List of Figures

List of Abbreviations

ASA	American Society of anesthesiology
BMI	Body Mass Index
CBC	Complete blood count
DIE A	Deep inferior epigastric artery
ECG	Electrocardiogram
HLT	High lateral tension
SAL	Suction assisted lipectorny
SAM	Sedative analgesic medication
SFS	Superficial Fascial system
TRAM	Transverse rectus abdominis myocutaneous flap

Introduction

Obesity is an increasing worldwide problem associated with adverse health effects and decreased life expectancy. The prevalence of obesity is increasing rapidly in most industrialized countries and it is known that obesity is associated with increased risk of cardiovascular morbidity and mortality. ***(Sabbadini et al., 2007)***

The surgical treatment of morbid obesity has gained popularity with the development of the gastric bypass operation and the advent of laparoscopic bariatric procedures. Bariatric surgery has evolved as a very effective therapy for morbid obesity. Patients who undergo bariatric surgery lose an average of 40 to 84% of their excess weight over 12 to 18 months. ***(Obeid et al., 2005)***

Bariatric surgery improves abnormal lipid levels, controls hypertension, and reduces the risk of diabetes by as much as 75%. Overall, mortality from obesity-related problems can be decreased as much as 24%. ***(Sugerman et al., 2003)***

After such dramatic weight loss, patients are usually left with redundant skin and unwieldy subcutaneous tissue. This not only creates new problems of hygiene and skin irritation, but also makes a person physically unattractive. Redundant tissue can lead to pain, intertrigo, continual problems of hygiene and decreased activity. ***(Van Huizum et al., 2005)***

Massive weight loss leads to similar changes of the abdomen, hips, thighs, flanks, etc., creating the pear-shaped habitus. The majority of post-bariatric patients has multiple procedures such as abdominoplasty,

breast reduction, mastopexy, brachioplasty, thigh lift or liposuction, usually not all performed at the same time. Among these, the abdominoplasty has an essential role in the body image recovery. The traditional abdominoplasty only partially addresses the dramatic functional and aesthetic changes affecting the torso following massive weight loss. It poorly addresses the redundant lateral flank and hip rolls deformities. The lateral excesses may even be emphasised by the classical operation increasing lateral fullness or leaving dog-ears. Buttock ptosis is often present too. ***(Gonzalez, 1960)***

This circumferential truncal excess cannot be corrected by a traditional abdominoplasty alone. In this group of patients, lateral excess can actually be over accentuated by a traditional abdominoplasty. Various techniques have been described to treat the circumferential truncal excess. Some include belt lipectomy, lower body-lift, and circumferential torsoplasty. Circumferential abdominoplasty was initially described in 1961 by Gonzalez-Ulloa and used by Hunstad in body contouring for obese patients, but it has gained popularity recently in the era of bariatric surgery, thanks to the studies of Lockwood and Pascal-Le Louarn. ***(Hunstad, 1996), (Pascal et al., 2002), (Van Huizum et al., 2005) and (Aly et al., 2006)***

Using an aggressive circumferential excision, Gonzalez-Ulloa excised "triangles of compensation" to accommodate a disparate length between the upper and the longer lower abdominal incisions. Despite the good aesthetic result, there are noticeable scars, and the thighs and the buttocks are not recontoured. Carwell and Horton claimed improved buttock, lateral thighs and flank contour and improvement in low back pain. Ted Lockwood has been a great contributor to body contouring with his

description of superficial fascial system and his concept of lower body lift. The resuspension of superficial fascial system adds a dimension of support to excisional lipectomy techniques as described in his "lower body lift", which is a modification of Pitanguy's flank-thigh-buttock lift. Aly et al. describe their technique as similar to the lower body lift described by Lockwood: one of the main differences is the sequence of the resection. They start supine and then change to both lateral positions, whereas Lockwood starts surgery first in the lateral decubitus position. Le Louarn in 1996 updated his experience reporting no seroma formation and shorter hospitalizations performing first liposuction of the abdominal fatty tissue in order to limit the undermining, thereby preserving the lymphatic vessels. In 2002, Pascal and Le Louarn proposed a new concept in the circumferential abdominoplasty: body lift with high lateral tension. The innovations of this new type of body lift were the dermal flap and the suspension of the buttocks and the trochanteric regions. ***(Lockwood, 1993), (Le Louarn, 1996) and (Carwell et al., 1997)***

The aim of this work

To study and compare traditional abdominoplasty and circumferential abdominoplasty in treatment of patients with marked skin redundency of the trunk.

Anatomy of the abdominal wall

Embryology:

The abdominal wall is embryonically derived in a segmental manner and this is reflected in blood and nerve supply. The transition of the embryo from a tri laminar disk to a 3-dimensional structure on the 22nd day of gestation initiates formation of the abdominal wall. ***(Huger, 1979)***

The development of the abdominal wall has multiple crucial stages. If the abdominal wall fails to undergo any stage in the sequence of events, congenital defects of the abdominal wall develop (gastroschisis, omphalocele). The abdominal wall becomes a definitive structure after the umbilical cord is separated. ***(Huger, 1979)***

The abdominal wall is formed of:

1) Skin and subcutaneous tissues,

2) Musculoskeletal system.

1) Skin and subcutaneous tissues

The skin of the abdomen is usually quite loose, except certain points of adherence (The anterior superior iliac crests and the Linea Alba). The subcutaneous tissue is divided into two layers superficial fatty layer and deep membranous layer. The later is continuous with the Fascia lata of the thigh. ***(Mitz et al., 1975)***

Zones of adherence are zones where there is fascial attachment to the underlying musculoskeletal system that prevent the overlying skin from being pulled superiorly or inferiorly. The zones of adherence are located in the midline of the anterior and posterior trunk, and around the pelvic