Suture Suspension for Face Lifting

Essay

Submitted for Partial Fulfillment of Master Degree in Dermatology and Venereology

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2011

الغرز المعلقة لشد الوجه

رسالة مقدمة

توطئة للحصول على درجة الماجستير فى الامراض الجلدية و التناسلية

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Summary

The different possibilities of the causes of facial ptosis (aging process, facial palsy, post burn scar contractures, traction force of flaps from neck to face) can be managed through various face lifting and suspension techniques.

The surgical procedures such as traditional rhytidectomy with SMAS lift, subperiosteal, mid face lifts, deep plane lifts and composite rhytidectomy are more suitable for advanced facial aging conditions with more ptosis and excess facial skin.

Mid face suture suspension techniques can be performed on its own to correct an isolated malar fat pad ptosis in patients without excess facial skin, eyebrow ptosis or in conjunction with a formal rhytidectomy as a maneuver for correction of mid face ptosis.

Non surgical procedures through using suture suspension techniques Suspension were initially used in cosmetic surgery and now have established place in facial reconstructive surgery.

Suture suspension technique can be used for providing attraction force that counters that caused by flaps from neck to face to prevent ectropion of mobile structures of the face, static facial reanimation in patients with paralyzed face and fixing closure at junction of cosmetics unites of the face.

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List of Abbreviations

Abbrev.	

AP-1 ..... Activator protein 1

APTOS..... Antiptosis

IL-1..... Interleukin-1

IL-6..... Interleukin-6

IL-8..... Interleukin-8

ITS..... Inferior temporal septum

LOT..... Lateral Orbital Thickening

MACS-lift ..... Minimal access cranial suspension lift

MAP ..... Mitogen activated protein

MMP ..... Matrix metalloproteinase

NF-B..... Nuclear factor-kappa B

ORL ..... Orbicularis retaining ligament

ROS..... Reactive oxygen species

SCS..... Superior cheek septum

SMAS..... Superficial musculoaponeurotic system

SOOF ..... Sub–orbicularis oculi fat pad

STS..... Superior temporal septum

TGF-β ..... Tissue growth factor beta

TIMP..... Tissue inhibitors of metalloproteinase

TNF-α ..... Tumor necrosis factor alpha

UV ..... Ultraviolet

ZM..... zygomaticus major muscle

Introduction

Each patient presenting for facial rejuvenation represents a different challenge. There are several names and variations of face lift procedures and suspension techniques which must be tailored according to facial conditions ***(Monheit and Gary, 2005)***

The facial soft tissues are arranged in concentric layers; Skin subcutaneous fat including malar fat pad which is a special subcutaneous structure responsible for fullness over zygomatic area, superficial musculoaponeurotic system (SMAS), mimetic muscles, parotidomaseteric fascia, and deep plan containing facial nerve, artery and vein, parotid duct and buccal fat pad ***(Freilinger et al.,1987).***

These layers supported in normal anatomical position by a series of retaining ligaments which suspend the more superficial mobile structures to the deeper akinetic facial structures ***(Furnas, 1989).***

Periorbital changes including ptosis of eye brow, upper eye lid skin fold, frowns lines and thickening of the corregator muscle are often recognized as the earliest sign of aging ***(Patel, 1996).***

Aging in the mid face is seen with ptosis of the malar tissue following the infraorbital area, Deeping of nasolabial folds and increased jowling ***(Anderson, 1998).***

Facial aging is caused by multitude of factors; The years of gravitational pull on the soft tissues between skin and facial skeleton, attenuation of retaining ligaments, loss of skin elasticity and possible facial deflation caused by fat atrophy or even bony resorption ***(Donofrio, 2000).***

Other causes of facial ptosis include facial palsy, post burn scar contractures, traction force of flaps from neck to face ***(Carraway, 1992).***

These different possibilities of the causes of facial ptosis explain the multitude of therapeutic approaches. One can rejuvenate the skin by using resurfacing techniques, augmentation of deflated areas, lifting of ptotic soft tissues or combining different procedures ***(Baker, 2001).***

Skin fillers are only useful for early or mild to moderate nasolabial fold depressions while in more sever volume loss; lipoinjection of fat is the treatment of choice as it replaces volume loss and produces some elevation ***(Monheit and Davis, 2005).***

The more advanced facial aging conditions with more ptosis and excess facial skin can only be treated with lifting procedures such as traditional rhytidectomy with SMAS lift, subperiosteal mid face lifts, deep plane lifts and composite rhytidectomy ***(Owsley and Fiala, 1997).***

These complex procedures involve a significant degree of dissection in one or more planes carrying occasionally instance

of significant edema, bruising and rare instance of facial nerve injury ***(Keller et al., 2002).***

Repositioning of ptotic malar fat pad and overlying skin in a more superolateral position is the goal of mid face rejuvenation surgery. The standard SMAS cervicofacial rhytidectomy is unable to effectively reposition of malar fat pad. Mid face suture suspension techniques can be performed on its own to correct an isolated malar fat pad ptosis in patients without excess facial skin or in conjunction with a formal rhytidectomy as a maneuver for correction of mid face ptosis ***(Sasaki and Cohen, 2002).***

As regard eye brow ptosis, many surgical approaches are available including the direct brow lift, mid forehead lift, temporal lift, coronal lift and endoscopic lift ***(Isse, 1997).***

Suspension sutures were initially used in cosmetic surgery and now have established place in facial reconstructive surgery ***(Robinson, 1999).***

Suture suspension technique is quick and simple to perform and provides attraction force that counters that caused by post burn scars or flaps from neck to face to prevent ectropion of mobile structures of the face ***(Carraway, 1992).***

Multivectored suture suspension technique is minimally invasive method for static facial reanimation in patients with paralyzed face ***(Winslow et al., 2001).***