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**RECENT LITERATURE REVIEW**

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**Botulinum toxin type A for the treatment and prevention of hypertrophic scars and keloids:**

**Updated review**

SWei-wei Ma BM , Hou-fang Liu BM , Xu-feng Yin BM & Bing-rong Zhou MD, PhD

**Abstract**

Botulinum Toxin Type A is a potent neurotoxin that is produced by a gram-positive bacteria *clostridium botulinum*. It is being preferred by most physicians due to its efficacy and lack of side effects. It can be used as monotherapy or combined therapy. The aim of this review study was to show the role and mechanism of action of Botulinum toxin type A in the treatment and prevention of hypertrophic scars and keloids. The clear mechanisms underlying hypertrophic scars and keloids are still not clearly understood; however, the mechanism of action of Botulinum toxin type A has been shown to include action on wound tension, action on collagen, and action on fibroblasts. Different randomized controlled trials, double-blind, and placebo-controlled studies have been conducted to investigate its use in treatment and prevention of hypertrophic scars and keloids, and it still is one of the active areas of research in Dermatology and related fields. *Method:* In March 2018, we performed a literature search in PubMed for clinical studies, clinical trials, case reports, controlled trials, randomized controlled trials, and systemic reviews. The search terms we used were “BOTULINUM TOXIN” AND “HYPERTROPHIC SCARS” OR “KELOIDS” (from 1980). The search resulted in 1000 articles, out of these 35 articles met our inclusion exclusion criteria. Our inclusion criteria included relevant original articles relevant, critical systemic reviews, and crucial referenced articles, exclusion criteria included duplicates and articles not published in English language. We have reviewed these papers to show the role and mechanism of action of Botulinum toxin type A in the treatment and prevention of hypertrophic scars and keloids.

## **Vitamin D levels in acne vulgaris patients treated with oral isotretinoin**

Mohammed Abu El-Hamd MD , Moustafa A El Taieb MD , Hassan M Ibrahim MD , Sanaa S Aly MD

### **Abstract**

#### **Background**

Acne vulgaris is a common inflammatory skin disease. Vitamin D deficiency plays a role in many inflammatory skin diseases. It may play a role in pathogenesis of acne vulgaris. This study aimed to assess serum levels of 25 hydroxy vitamin D in patients with acne vulgaris before and after treatment with isotretinoin and its relation with acne vulgaris severity.

#### **Methods**

Ninety patients with acne vulgaris and 60 age-sex matched healthy subject as controls have been recruited in this study. Patients were treated with 0.75 mg/kg/d isotretinoin for 3 months. Serum level of 25 hydroxy vitamin D has been measured at baseline and after treatment.

#### **Results**

Serum levels of 25 hydroxy vitamin D were significantly higher in patients with acne vulgaris than healthy controls ( $P = .001$ ). There was a significant inverse relation between level of 25 hydroxy vitamin D and severity of acne vulgaris before treatment ( $P = .001$ ). Serum levels of 25 hydroxy vitamin D were significantly increased after isotretinoin treatment in patients with acne vulgaris ( $P = .001$ ).

#### **Conclusion**

This study concluded that vitamin D may play a potential role in pathogenesis of acne vulgaris or acne vulgaris may have a negative effect on vitamin D synthesis. Further studies are needed to confirm these potential relations.

## **Six years of experience using an advanced algorithm for botulinum toxin application**

Gabriela Casabona MD , Kai Kaye PhD , Paula Barreto Marchese MD , Ricardo Boggio PhD , Sebastian Cotofana PhD

## **Abstract**

### **Background**

Botulinum toxin (BTX) products continue to be widely used for facial rejuvenation. Variables to consider prior to BTX treatment include the anatomical area to be treated, gender, muscle mass, ethnicity, skin thickness, and the effects of aging.

### **Objective**

To describe a treatment algorithm which has been developed for facial rejuvenation to help physicians to easily and systematically customize BTX treatment, and to describe its use in a large number of patients.

### **Materials & Methods**

Prior to treatment, digital images of patients were obtained while relaxed and while forming different facial expressions. This information was used to plan the depth, dose, and location of BTX injections (onabotulinumtoxinA; Botox<sup>®</sup>; Allergan, Inc). Dilution was 100 U of BTX to 1 mL 0.9% preserved saline. Injections were performed with 30 U insulin syringes and 30 gauge needles.

### **Results**

The treatment algorithm described here has been used by the author for facial rejuvenation for more than 5 years. It was originally based on published guidelines; however, by carefully noting treatment outcomes, the number and location of injection points and the dose of BTX used have been modified to create the current treatment system.

### **Conclusion**

Published guidelines for the use of BTX are an excellent starting point for clinicians with little experience; however, each practitioner is likely to develop their own algorithm for achieving good facial rejuvenation outcomes.

## **Hyaluronic acid gel based on CPM<sup>®</sup> technology with and without lidocaine: Is there a difference?**

Patrick Micheels MD , Stéphanie Besse MD ,Didier Sarazin MD , Martinien Obamba MS

## **Abstract**

### **Background**

In 2011, a cohesive polydensified matrix (CPM<sup>®</sup>) hyaluronic acid (HA) gel filler was approved by the USA Food and Drug Administration. In 2014, lidocaine was added to the gel during its manufacturing process.

### **Objectives**

To evaluate the behavior and rheological properties of a CPM<sup>®</sup> HA gel with and without lidocaine.

### **Methods**

Authors performed simple tests to document the cohesiveness and resistance to traction force of both gels. In two different laboratories, the rheological properties of both gels were measured. They used comparative data of the gel without lidocaine collected from over 6 years. They also observed the gels' behavior when injected into the superficial and mid-reticular dermis, comparing their distribution using both ultrasonography and histology.

### **Results**

Over more than 10 years, the authors, observed no difference between both gels, even if clinically they felt a difference in the gels' viscosity upon injection. Their behaviors during injection were similar. Using more sophisticated tests measuring the gels' rheological properties with different techniques, namely shear sweeps, a difference was, however, noted between the two gels.

### **Conclusions**

Adding lidocaine to CPM<sup>®</sup> HA gel renders it more viscous. Whether this means a difference in the clinical results, however, would require a comparative long term clinical study.

## **A new approach to lower eyelid-cheek junction rejuvenation**

Liu Liu MD ,Heng Wang BS ,Zhen-Jun Wang BS

### **Abstract**

#### **Background**

Anti-aging in lower eyelid-cheek junction area is a popular cosmetic surgery procedure. Removal of orbital fat , removal of part of the skin or even the orbicularis muscle, superficial pull and deep fill and a series of surgical procedures like these have been or are becoming the mainstream of clinical practice. However, aging involves a variety of tissues and causes, which is a dynamic and continuous process. Conventional or a single method cannot fundamentally solve all of the

problems of the aging in lower eyelid-cheek junction area. Authors propose a better-organized surgical approach based on the whole anatomy of lower eyelid-cheek junction area.

## **Methods**

A total of 103 patients received lower eyelid-cheek junction rejuvenation surgery from September 2014 to September 2017 in our department. Efficacy of surgeries was delineated and scored by both patients and surgeons.

## **Results**

All patients of different ages, genders were relatively satisfied with the lower eyelid-cheek junction rejuvenation surgery in our department. Patients with different past histories of cosmetic surgeries could all benefit from the lower eyelid-cheek junction rejuvenation surgery.

## **Conclusion**

Rejuvenation of lower eyelid-cheek junction area should be based on a thorough understanding of periorbital anatomy, age-related changes of the lid-cheek junction, and the variables controlling lower lid tone and position. The surgical strategies are best used in a graded fashion.

## **Wedge-shaped polydioxanone threads in a folded configuration (“Solid fillers”): A treatment option for deep static wrinkles on the upper face**

Seung Hoon Kang MD ,Seok Hoon Moon MD ,Bong-Il Rho MD ,Seong Jae Youn MD ,Hei Sung Kim MD, PhD

## **Abstract**

### **Background**

Facial wrinkles are key signs of aging which affect one's quality of life and psychological well-being. Absorbable wedge-shaped polydioxanone (PDO) sutures are popular in the esthetic clinics of Korea and may be a treatment option for static wrinkles on the upper face.

### **Objective**

Description of a novel technique applicable to deep static wrinkles on the upper face and to assess its safety and efficacy.

### **Patients and Methods**

A retrospective chart review was performed on the static wrinkle cases which were treated with folded, wedge-shaped PDO threads. A total of 33 Korean patients with glabellar and forehead wrinkles were included. All participants underwent a single treatment session. The results were assessed objectively using serial photography and subjectively based on the patients' satisfaction scores. Complications were also recorded.

## **Results**

The patients displayed moderate (15.2%), severe (39.4%), and very severe (45.4%) static wrinkles at baseline. The majority of patients (81.8%) considered the results satisfactory. Consensus ratings by two independent dermatologists showed that the objective outcomes at 2-month follow-up were very much improved (30.3%), much improved (30.3%), and improved (24.2%). There were minor complications.

## **Conclusion**

Wedge-shaped PDO sutures in a folded configuration (“solid fillers”) are a promising treatment option for deep static wrinkles on the upper face. They may be applied as an adjunct, or as an alternative to conventional therapies such as botulinum toxin and soft tissue filler injection.

## **The treatment of hyaluronic acid aesthetic interventional induced visual loss (AIIVL): A consensus on practical guidance**

M Dalvi Humzah FRCS(Plast) , Saj Ataulah FRCOphth , ChenAn Chiang MD ,Raman Malhotra FRCOphth

Robert Goldberg MD

## **Abstract**

### **Background**

Visual loss (blindness) caused by injection of soft tissue fillers is a rare but devastating issue to both patient and practitioner. There is a lack of any structured protocol in the management of this problem

### **Aims**

To produce a pathway for the management of hyaluronic acid aesthetic interventional induced visual loss that was based on the current available literature and guidelines. evidence proposed guidance for the practical management of this problem. was evaluated and a pathway has been developed for patient management and specialist advice

### **Method**

A consensus group experts involved in aesthetic intervention, visual loss research and with experience in dealing with visual loss assessed the current literature and proposed guidelines

available. Using the protocols available a pathway for the treatment of aesthetic interventional induced visual loss was proposed.

## **Results**

The group produce a set of guidelines for the practitioner to use as an emergency situation and for use in a delayed presentation. The group also produced guidelines for specialists to use in a secondary care setting.

## **Conclusions**

These recommendations are based on current publications and or consensus view as there is still a lack of robust Level I data to support any particular intervention therapy.

## **Outcomes in thread lift for face and neck: A study performed with Silhouette Soft and Promo Happy Lift double needle, innovative and classic techniques**

Samad Rezaee Khiabanloo MD ,Roghieh Jebreili MD ,Ezatollah Aalipour MSc ,Nazi Saljoughi MD

Arian Shahidi MD

Abstract

## **Introduction**

This study was conducted to evaluate the surgical efficacy and outcomes of the absorbable suture suspension system related to eyebrow, midface, mandibular, and neck lifting.

## **Materials and Methods**

A total of 193 patients were included in the study from January 2016 to May 2017. All participants underwent thread lifting using the Proma Happy Lift double needle and Silhouette Soft threads. The patients were followed up for first week and first, third, and sixth month after lifting surgery. Outcomes were assessed by two surgeons and patients based on the GAIS score.

## **Results**

A total of 193 patients (mean age:  $52.22 \pm 11.74$  year, range: 25-89), 23 (11.9%) men and 170 (88.1%) women, were included in the study. The most common sites for the face lifting surgery were the jawline (46.1%), midface (33.7%), eyebrows (12.4%), and neck (7.8%). The level of satisfaction increased from 94% in the first week after surgery to 99% in the sixth month after surgery for patients, increased from 94% to 99% for surgeon 1, and increased from 83% to 98% for surgeon 2.

## **Conclusion**

The results showed that the level of satisfaction of patients and surgeons increased over time. These results demonstrated that facial rejuvenation thread lift with Proma Happy Lift double needle and Silhouette Soft threads is a being cosmetically more acceptance, safe, and effective procedure associated with minor complications.

## **Microneedling by dermapen and glycolic acid peel for the treatment of acne scars: Comparative study**

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### **Abstract**

#### **Background**

Many methods have been performed to achieve a satisfying outcome in acne scars but some of them, in addition to high costs, are associated with poor results and some complications.

#### **Objectives**

Evaluation of the efficacy and safety therapy of glycolic acid (GA) peel, microneedling with dermapen and a combination of both procedures in treatment of atrophic acne scars.

#### **Methods**

Thirty patients having acne scars were enrolled for the study. They were randomly assigned into three groups, each group included 10 patients; group I was treated with GA peel, group II treated was with microneedling. Group III received a combination of both procedures. All patients received six sessions with 2-week intervals. The clinical assessment was based on the qualitative global scar grading system before and after treatment, quartile grading scale, and degree of patient satisfaction.

#### **Results**

There was a statistically significant decrease in acne scars grade after treatment among the studied groups ( $P = 0.04$ ) but it was higher in group III. There was improvement in boxcar, ice pick, and rolling scars in all groups, respectively ( $P = 0.03$ ,  $P = 0.04$ ,  $P = 0.04$ ). Patients' satisfaction was higher in group III ( $P = 0.04$ ).

#### **Conclusion**

Combination of dermapen and GA peel is more effective than monotherapy.

## **Intralesional bleomycin injection vs microneedling-assisted topical bleomycin spraying in treatment of plantar warts**

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Mohamed L. Elsaie MD

### **Abstract**

#### **Background**

Warts, or verrucae, are benign epithelial proliferations of skin and mucosa caused by infection with HPV and poses a challenge to treat.

#### **Objective**

To compare between single and microneedling-assisted multipuncture techniques of intralesional application in treatment of plantar warts.

#### **Methods**

The study included 60 Patients who were divided into two groups (A&B). Each group consisted of (30) patients. Group (A) subjects received intralesional bleomycin with a single injection using syringe needle. For Group (B) subjects, we combined microneedling with topical spraying of bleomycin (MN + Bleo) and followed by occlusion for 2 hours.

#### **Results**

The results revealed complete clearance of warts in 21 patients in group (A) (70%) whom were treated by intralesional (IL) bleomycin vs 25 patients (83.3%) in group (B) whom were treated by spraying of bleomycin following microneedling. Side effects other than pain, erythema, and transient induration were relatively infrequent, and no nail changes or Raynaud's phenomenon was observed in both groups.

#### **Conclusion**

The authors achieved safety and efficacy profile for bleomycin in plantar wart treatment and propose that microneedling followed by bleomycin spray has higher clearance and is less painful as compared to bleomycin injection.

# **Telomere length and genetic variations affecting telomere length as biomarkers for facial regeneration with platelet-rich fibrin based on the low-speed centrifugation concept**

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Ioannis Vlastos MD, PhD ,Anna-Maria Vesala DMD ,Joseph Choukroun MD, PhD et al

## **Abstract**

### **Background**

Platelet-Rich Fibrin (PRF), a fibrin matrix produced by single blood centrifugation that contains leukocytes, platelets, and growth factors, is increasingly being utilized for facial regeneration purposes. However, our understanding of the involved pathophysiological mechanisms affecting regeneration is limited and current protocols require better optimization. Biomarkers that are related to skin aging such as telomere length (TL) have been proposed as a mean to analyze patients' stratification.

### **Objective**

The aim is to study whether the outcomes of a facial regeneration protocol performed with PRF are related to TL and genetic variations affecting TL. This can aid in the standardization of a surgical aesthetic protocol.

### **Patients and Methods**

In all, 41 patients treated with PRF produced with the low-speed centrifugation concept were included in this observational study. The correlation between TL and genetic variations were assessed versus treatment outcomes, namely the number of sessions and aesthetic results utilizing the FACE-Q skin satisfaction questionnaire.

### **Results**

In all, 39 of the 41 patients completed the treatment. TL correlated with the initial responses to FACE-Q ( $\rho = .33, P = .05$ ). Genetic variations affecting TL was related to the change of FACE-Q ( $\rho = .35, P = .034$ ) as well as to the number of treatment sessions ( $\rho = .38, P = .019$ ).

### **Conclusions**

Telomere length (TL) was related to patient perceived facial skin appearance. In addition, genetic variations affecting TL were related to the final outcomes (number of sessions and improvements of FACE-Q results) and may be a useful biomarker for future regenerative procedures performed with PRF for facial regeneration.