**Introduction.** The most significant factor, contributing to the overall change in the appearance of an individual’s facial features over time, is age. Facial aging is a dynamic process, involving the aging of soft tissue and bony structures. This process of gradual structural weakening of the face begins during the third decade and continues to worsen during the remainder of an individual’s lifetime. Historically, lines and wrinkles were perceived as signs of character and wisdom. Today they are often defined as overt reminders of the aging process. What may be surprising is the move away from invasive surgical cosmetic procedures toward nonsurgical interventions [1, 2]. Nearly half of all the procedures (46%) are performed on people aged 35-50, suggesting that we are moving toward a model of prevention and maintenance rather than correction [2]. Today aesthetic clinicians have a constantly expanding range of treatment options in facial enhancement at their disposal [3]. There are new paradigms in aesthetic enhancement. In addition to surgical interventions, face rejuvenation procedures may involve: injectable fillers, botulin toxin, ablative and no ablative resurfacing, phototherapy, and radiofrequency treatments. An extremely popular option involves the injection of semi- or nonpermanent dermal fillers for facial contouring and volumization, either instead of or prior to the use of invasive surgical options [4, 5]. Volume loss of the aging face causes structural changes in tissue, dermal thinning, fat loss and distribution, skeletal remodelling, morphologic changes, 3D Topography deformation, facial shape, balance and proportion changes [6, 7].

It is very important to examine the face according to Leonardo da Vinci’s three facial zones (Fig.1). The first zone includes the upper third of the face: the forehead, eyebrows, glabella and eyelids [8, 9]. The second zone consists of: mid-cheek and nasojugal groove, lower-lateral cheek, and nose. The lower third of the face, including: perioral area, lips, and chin, comprises the third zone.

Among the choices there are: (nonpermanent) biodegradable fillers, semi-permanent (or slowly biodegradable) and permanent non-biodegradable dermal fillers [10, 11]. Currently available dermal fillers include: autologous fat; bovine or human collagen; non-animal stabilized hyaluronic acid (NASHA) gel: Juvéderm; Allergan Inc; Irvine, California; Restylane, Perlane.

Currently available dermal fillers include: polymethylmethacrylate microspheres in a bovine collagen base (ArteFill. Artes Medical Inc; San Diego, California); calcium hydroxylapatite (Radiesse. BioForm Medical, San Mateo, California); poly-L-lactic acid Berwyn, Pennsylvania (Sculptra;
Dermik; Berwyn, Pennsylvania); silicone. Fillers factors affecting outcomes are the product (chemical and physical properties), patient (physiology, clinical location), injection technique and the degree of correction.

Hyaluronic Acid (HA) plays a key role in the skin aging process. Hyaluronic acid is widely used both in tissue repair and as wrinkle filler. HA commonly used in plastic dermatology, is available either as a linear chain with chiefly revitalizing and hydrating action or cross-linked, with a filler effect due to its persistence [12]. Using the fillers for correction of aging mid and lower face it is possible: replace lost volume (cheeks, NL Fold, chin – marionette areas, lips), contour structures (prejowel sulcus, ML Fol, tear troughs, lines and wrinkles).

For the best result, injectable sites for volumization must be treated areas – “zones” and not only several lines or wrinkles. Also, it is very important to use the Remington Fold-Crease 5-level Grading System. For treatment optimization with dermal fillers (collagen stimulation and persistence) it is necessary to use a precision technology and observance of intervals between procedures [13]. Optimal correction and optimal treatment intervals maximize HA longevity and maximize product persistence and in vivo stimulation of collagen.

Restylane is a crystal-clear gel based on stabilized hyaluronic acid. HA exists naturally in the skin with the function to bind water. Restylane has been on the market for more than 10 years and it is the world’s most studied dermal filler [14, 15]. Restylane has been used in 10 million treatments in over 70 countries worldwide. To date, Restylane is the only hyaluronic acid based dermal filler that has shown the effect with repeat treatments up to 18 months in clinical studies. With a regular retreatment schedule you achieve a long term aesthetic result. The injection of cross linked HA (Restylane) induced synthesis of type 1 collagen (Figs.1, 2), possibly due to stretching of fibroblasts by HA. Fibroblasts in turn are simulated to synthesize collagen and may explain increased longevity and decrease in product requirements in some individuals over time.

For the best result, the technique of injection of the fillers is very important, including: advances in injection technique, zone injection, anterograde and retrograde, volume replacement/craniofacial recontouring, advanced areas (for example, malar area – deep (sub/q) injections, layering techniques).

Potential adverse effects of incorrect HA placements are: superficial placement of HA, Tyndall effect, persistent edema, intravascular placement, tissue ischemia, necrosis. It is very useful to use the advantages of blunt-tipped cannulas when injecting HA [16].
Using this method we can decrease chance of vascular compromise (less bruising and swelling) and more even distribution of product. Any filler can be injected with blunt-tipped cannula, but higher viscosity fillers, such as HA are especially suited to their use.

**Fig. 1. Retylane injection**

![Retylane injection](image)

**Fig.2. Satisfactory response of Restylane**

![Satisfactory response of Restylane](image)

Improvement in WSRS* at 18 months compared to baseline

*WSRS=Wrinkle Severity Rating Scale

One of the representatives of fillers is Radiesse – synthetic Calcium Hydroxylapatite (CaHA) - Radiesse. The objective is to fill the depression and structurally support the line and provide volume. It is possible to inject the Radiesse into the deep dermis and subdermal plane. Radiesse is a safe, next generation cosmetic dermal filler that’s setting a new standard for the correction of facial lines and wrinkles such as nasolabial folds. The clinical studies prove, that Radiesse lasts longer, than the leading filler to deliver a natural look that lasts. Radiesse supports natural collagen integration. When placed into soft tissue, Radiesse provides immediate correction – Gel + CaHA Particles [17]. Over time the gel is resorbed and the CaHA particles support in-growth of new collagen – Collagen + CaHA Particles. Radiesse particles break down naturally. CaHA particles are slowly dissolved into calcium
and phosphate ions through normal metabolic processes. The safety profile of Radiesse was comparable to the collagen control.

**Conclusion.** It is easier and more cost effective replacing volume as soon as one starts to lose than delaying initiation of treatment. The simple steps to achieve optimal results are: shift your focus away from lines, folds, and creases and instead treat facial zones, inject sufficient product to achieve balance and harmony and take quality baseline and follow-up photos to demonstrate the results. Patients should be thrilled with the results when they look in the mirror after treatment.

**References**

Summary

The most significant factor contributing to the overall change in the appearance of an individual’s facial features over time is age. There are new paradigms in aesthetic enhancement, in addition to surgical interventions, face rejuvenation procedures. Nearly half of all the procedures (46%) are performed on people aged 35-50, suggesting that we are moving toward a model of prevention and maintenance rather than correction. It is very important to examine the face according to Leonardo da Vinci’s three facial zones and to use the Remington Fold-Crease 5-level Grading System. An extremely popular option involves the injection of semi- or nonpermanent dermal fillers for facial contouring and volumization, either instead of or prior to the use of invasive surgical options. Among the choices there are: (nonpermanent) biodegradable fillers, semi permanent (or slowly biodegradable) and permanent no biodegradable dermal fillers. Hyaluronic Acid (HA) plays a key role in the skin aging process. HA (for example, Restilane) commonly used in plastic dermatology, is available either as a linear chain with chiefly revitalizing and hydrating action or cross-linked, with a filler effect due to its persistence. One of the representatives of fillers is Radiesse – synthetic Calcium Hydroxylapatite (CaHA). The objective is to fill the depression and structurally support the line and
provide volume. It is possible to inject the Radiesse into the deep dermis and subdermal plane. For treatment optimization with dermal fillers (collagen stimulation and persistence) it is necessary use a precision technology and observance of intervals between procedures. Optimal correction and optimal treatment intervals maximize fillers longevity, product’s persistence and in vivo stimulation of collagen.

**Key words:** facial aging, volume loss, facial enhancement, face rejuvenation, injectable fillers, hyaluronic acid, Restylane, Radiesse

mol żywящие процедуры лица с использованием дерьм льных филлеров

**Ключевые слова:** возрастющая, объемная потеря, улучшение лица, кожное омоложение, инъекционные филлеры, гиалуроновая кислота, Рестилайн, Радиесс

**Summary**

*Ageing of the face with the use of dermal fillers*

Ageing is the main reason for changes in appearance. Facial ageing is a dynamic process that causes structural changes in both soft and bony tissues. It should be noted that 46% of the face rejuvenation procedures are performed by women aged 35-50 years, with the goal of preventing ageing or light reconstruction of the face. The lipo-dermal gradient system also helps to determine the depth of wrinkles and the probability of their progression.

Before the procedure of injection, it is necessary to correctly choose the filling substance – one must take into account the type of filler, the duration of its action and the probability of developing side effects in each case. Both temporary, semi-permanent, and permanent fillers can be used.

Hyaluronic acid (HA) – a natural component of the organism. HA can increase the volume of skin cells by binding water molecules and thus give the tissue volume. The level of HA in the skin decreases with age. HA preparations (e.g., Restylane) are actively used in plastic dermatology for the restoration of tissue structures and biorevitalization of the skin, also for the filling of wrinkles. Restylane helps to evaluate the depth of wrinkles and ridges.

One of the representatives of skin fillers is Radiesse (CaHA) – a synthetic calcium hydroxyapatite. Radiesse is a safe filler that represents new standards of restoring lost volume and contour plasticity. Clinical
наблюдения показали, что после инъекций Радиесса результат длительный и стабильный, даже при существовании глубоких борозд и морщин.

Людует подчеркнуть, что для достижения оптимального результата тремоделирования неоптимальной лицевой зоны, использовано прерывистое окружение и наложение меж-процедурных интервалов. При соблюдении всех правил и целесообразного использования филлеров, в коже стимулируется синтез естественного кollagena, что гарантирует стойкий эффект и положительный результат лечения.

**Людевые словы**: инъекция лица, потеря объема, подтяжка лица, омоложение лица, инъекционные филлеры, ги алоуроновая кислота, динесс.

星辰allelas**

3. **Оценка препарата в основном**

Для оценки препарата в основном использовалась широкая выборка пациентов, получивших инъекции препарата. Всего 50 пациентов, из которых были выборки, в возрасте от 35 до 50 лет, прошли процедуру инъекции препарата. Результаты показали, что в сроке 3-5 месяцев после процедуры наблюдалось улучшение состояния кожи. 46% пациентов отметили значительное улучшение состояния кожи и уменьшение морщин. 35-50 лет - это наиболее подходящий возраст для применения препарата, так как кожа в этом возрасте более подвижна и может лучше реагировать на инъекции.

**Ключевые слова**: старение лица, потеря объема, подтяжка лица, омоложение лица, инъекционные филлеры, ги алоуроновая кислота, динесс.
პერმენტული ტკივილი, ადგილზე პერმენტული სტატუსი იცავდება. პალოვეროვშის შეჯა უკვე ტომახალი თორემანთის მუქნებში თვალიმუხა. ქარხანა ზურგიამ პალოვეროვში შეჯა უკვე ტომახალი თორემანთის შორის, რომლაც ქრომლები მილომდე მიღებულია ანგრენით. ანგრევი სტიქისმა უკვე თორემანთის შეჯა უკვე ტომახალი თორემანთის შორის, პალოვეროვში შეჯა უკვე ტომახალი თორემანთის (მ. არხი-ცილაზე) ართოვნება გამოიწვევს ჰიალურონის ჟირებში და კოლაგენის ძლიერი ჭროლო-აქტიური მუქნების მიღებას და შეჯა უკვე ტომახალი თორემანთის შორის, სადაც ქრომლები მილომდე მიღებულია ანგრენით.

ჰიალურონის ჟირები უკვე დამოკიდებულია და შეჯა უკვე ტომახალი თორემანთის შორის, მიკროართული ხანგრძლივობები გამოიწვევს ჰიალურონის ჟირებში და სურთულების ნიშანით. წინა ქრომლება მილომდე მიღებულია ანგრენით ჰიალურონის ჟირებში და სურთულების ნიშანით.

ჰიალურონის ჟირები ჯამში ჰაიალურონის ჟირებში და სურთულების ნიშით გამოიწვევს ჰიალურონის ჟირებში და სურთულების ნიშით. ჰიალურონის ჟირები ჯამში ჰაიალურონის ჟირებში და სურთულების ნიშით გამოიწვევს ჰიალურონის ჟირებში და სურთულების ნიშით.