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Extended Abstract

The use of non-crosslinked hyaluronic acid as a complement to Polydioxanone (PDO) Thread Lifts

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Introduction

There are numerous non-surgical treatments aimed at facial rejuvenation. Among them, the PDO Thread Lift are one of the most used, while they promote the reduction of wrinkles and the improvement of skin appearance, due to PDO collagen production during its hydrolysis. The search for even better results encourages association with other procedures, such as hyaluronic acid. Despite being a natural component present in human tissue, aging decreases its concentration in the dermis, contributing to the formation of wrinkles and decreased elasticity of the skin. Hyaluronic acid has therefore been commonly used for aesthetic purposes, enjoying a high reputation for its excellent ability to "smooth out" wrinkles. As well as helping the skin's natural hydration and collagen production, which results in a smoother, better hydrated and younger surface, contributing to better aging planning.

Objective

The present study aimed to evaluate the simultaneous use of facial threads and non-cross linked hyaluronic acid in the facial rejuvenation.

Materials and Methods

Were selected patients with rhytids and static wrinkles in the periorbicular region and excluded those with contraindications for this treatment: autoimmune diseases, Hepatitis B and C, HIV infection, pregnancy and breastfeeding, anti-cancer treatment, coagulant, infection, or history of keloid formation. We protocol the use of 5 smooth threads in the periorbicular region bilaterally and through the same pathway biorevitalization is performed by retroinjecting non-crosslinked hyaluronic acid. After 45 days, the results were reassessed. The PDO Thread Lift procedure is designed according to what we want to treat, and which areas we want to concentrate on. For example, for lifting, I use a combination of barbed threads of different thickness and lengths, inserted in 3-4 entry points. The treatment can also be designed according to your lifestyle needs – if you can take more swelling, I will insert more threads, and vice versa. The treatment can also be designed according to your lifestyle needs – if you can take more swelling, I will insert more threads, and vice versa. While PLLA and PCL last longer than PDO threads, the longevity itself could be a double edged sword. Patients often report that Korean PLLA threads feel harder in the skin, with more tightness. This is owing to its higher tensile strength. Theretically, PLLA threads are a longer lasting alternative to PDO threads. However, more scientific literature is required to understand its efficacy and safety compared to PDO threads. Additionally, a blood test was performed on a segment of the polydioxanone thread prior to establishing the treatment plan. The test consisted of a degradation test or in vitro hydrolysis in a medium containing non cross-linked hyaluronic to enable the macroscopic observation of its dilution in that medium.

A similar polydioxanone thread fragment to the one implanted in the patient was subjected to placement in a Petri dish for biological samples at 37 degrees Celsius for subsequent observation in a laminar flow cabinet and through an optical microscope. The one centimetre long 21G gauge polydioxanone thread segment was immersed in 1.5 milliliters of undiluted non cross-linked hyaluronic acid. It was observed using an ultramicroscope at 4x and 10x after 24, 48, and 72 hours. The microphotographs at 24 hours already showed evidence of structural changes in the fibres with increased interlaminar spaces and dilution of the violet pigment. The degradation continued at 48 hours, observing polydioxanone hygroscopy in the form of an aqueous content between the thread's peripheral layers and its central core. There was evidence some fibre breakage and an increase in interlaminar and interfibrillar spaces This is a 36-year-old female patient with Fitzpatrick type II skin phototype and Glogau type 2 photo-ageing, who visited the office requesting medical help to resolve non-infectious complications that appeared 24 hours after implanting barbed polydioxanone threads for midface skin lifting. After the interview or anamnesis and the general clinical examination, the skin was examined directly using a magnifying glass with an artificial light source focused on the area affected by the placement of the polydioxanone threads, located between the mid and lower right face. A direct visual inspection was undertaken to establish a diagnosis, determining the lesion's morphological characteristics. An extensive zone of oedematous erythema, intraepidermal oedema, and ecchymosis at the ends of the thread was observed. The thread was also palpable on the surface, with evident irregularities in the form of the fold around the proximal end of the suture, toward the labial commissure, corresponding to a "skin folding" phenomenon from excessive skin retractionAlthough these are transitory events, they can last for days or weeks. The patient normally cannot return to their everyday activities until those complications have been resolved. Therefore, the recovery time after lifting using threads can be the same as required after rhytidoplasty. In this case, the patient may need a subcision to release the tissue, which implies more aggression to tissues, resulting in a longer period of convalescence. The resolution rate using surgery after the thread lifting procedures is high. 11% of patients need their threads removed as they are palpable, extruded, or because they are unhappy with their appearance . Therefore, even though it is considered a transient complication, surgery ends up being required to resolve

it, which goes against the aim of the polydioxanone thread lifting technique being a minimally invasive protocol. When searching for a minimally invasive solution for this type of post barbed polydioxanone thread implantation adverse reactions in patients in whom surgical removal of the suture is indicated, the authors of this clinical case proposed an alternative method for resolving those complications.

Conclusion

The biostimulatory use of PDO smooth threads with the non-crosslinked hyaluronic acid are safe and have good results in facial lifting. They are enhanced when combined with acid hyauronic based on elevating the local collagen production and with the introduce at the correct skin layer they are not painful.

Result

We can observe that the use of non-crosslinked hyaluronic acid promotes short term volumization and deep skin hydration, helping the collagen production response stimulated by the presence of the smooth thread.