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INTEGRATIVE LITERATURE REVIEW ON ANESTHESIA IN THE MAIN OROFACIAL HARMONIZATION PROCEDURES

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Abstract: Introduction: Orofacial harmonization is a specialty whose function is to improve aesthetics and rehabilitate the orofacial structures in its area of activity. Patient pain management is a priority in minimally invasive aesthetic procedures. Aim: To analyse the efficacy and necessity of using anaesthetics in the main orofacial harmonization procedures. Methodology: Integrative literature review on lip fillers, botulinum toxin type A and collagen biostimulators. The databases used for the search were PUBMED, Portal de Periódico CAPES and BVS; the following descriptors were applied: "Botulinum Toxin Type A", "Dermal Fillers", "Anesthesia", "Collagen" and "Pain". Results: 23 articles published between 2011 and 2024, the period established for the search, were found. Conclusion: The anesthesia procedures adopted in the different facial harmonization processes considered in the studies showed that the gold standard is lidocaine, followed by prilocaine, combined with techniques such as ice compresses and vibration anesthesia, make them fundamental, as well as effective in minimizing the pain and discomfort to be felt by the patient.
Keywords: Dermal Fillers; Anesthesia; Botulinum Toxin Type A; Pain; Collagen.

INTRODUCTION

As the desire for beauty and a youthful appearance has increased in recent years, cosmetic injections are receiving more attention due to their lower cost, faster and more repeatable results and lower invasive nature and morbidity (Fallahi et al., 2019).

However, anxiety about multiple injections in these procedures is a problem that most patients face. Success in minimizing pain during injection increases patient comfort, satisfaction and trust in the professional (Fallahi et al., 2019). Local anesthesia is a central component of the success of aesthetic interventions (Bernardi & Parisi, 2023).

Among the various aesthetic procedures used for orofacial harmonization, three of the most commonly used in patients' daily lives were selected: Lip fillers, Botulinum toxin type A and Collagen biostimulators, as well as the main types of anesthetic indicated for each specific case.

Lip fillers are a safe method for regenerating and shaping the lips, but various harmful factors can alter or destroy the structure of the lips (Czumbel et al., 2021). In this context, demand has been increasing for this procedure, which is done with hyaluronic acid, injected with a needle and applied quickly.

Botulinum toxin type A is a neurotoxin produced by the anaerobic bacterium Clostridium Botulinum. Its mechanism of action is to block the release of acetylcholine in nerve terminals, which consequently reduces the potential for muscle contracture in the area where it is applied. It has a reversible effect over time, so it does not cause permanent paralysis of the muscle (Cavalcanti et al., 2022).

When it comes to collagen biostimulators, they mainly fall under the umbrella of dermal fillers. Dermal fillers have become popular for the treatment of contour defects caused by aging, a natural factor that can be mitigated with the insertion of these biostimulators, other problems such as diseases, trauma and scarification can be alleviated with these fillers (Sturm et al., 2011).

Facial fillers are one of the procedures used to improve patients' facial aesthetics, in order to provide a more rejuvenated and natural face, allowing the restoration of volumes and contours lost as a result of advanced age, which causes a gradual decrease in collagen synthesis, resulting in thinner and more elastic skin (Miranda, 2015).

The number of anesthetic drugs and their administration techniques has increased in recent years for aesthetic interventions (Bernardi & Parisi, 2023). It is therefore important for health professionals to know the best anesthetic management, its concentrations and formulations, as well as the techniques most established in the literature to be applied in procedures, with the aim of easing the patient's pain and thus obtaining better acceptance of them.

METHODOLOGY

This article is an integrative review of the literature, of an exploratory nature, with the aim of verifying the main precepts of anaesthesia in orofacial harmonization.

As recommended in studies of this nature, we tried to complete the five stages, starting with the definition of the guiding question and surveying the literature. Considering the possibilities of existing facial harmonization procedures, it was decided to select studies on the three main ones: lip fillers, botulinum toxin type A and collagen biostimulators. The guiding question to be answered at the end of the study was: What types of anaesthetics and techniques are most commonly used in these orofacial harmonization procedures?

Next, the inclusion criteria were that the articles were published between January 2011 and September 2024, that they were in full text in any of the Pubmed, CAPES and BVS databases, and that they included the descriptors standardized by the Health Sciences Descriptors: Botulinum Toxin Type A, Dermal Fillers, Anaesthesia, Pain and Collagen.

The language of the publication was also taken into account, and texts in Portuguese, English and Spanish were consulted.

The 1,5356 studies found were initially refined by excluding duplicates, and the remaining 6,147 by title and selected after reading their abstracts, resulting in 29 articles. After reading the abstracts, the articles that were closely related to the aim of the review were read in full, and only 23 were included in the study.

Papers that did not meet the criteria were disregarded in the study. Table 1 shows the number of filtered articles selected from each of the databases.

Sub-themes	BVS	Portal Periódico Capes	Pubmed	Total
Lip fillers	0	2	3	5
Botulinum Toxin Type A	3	0	6	9
Collagen biostimulators	1	1	7	9
Total	4	3	16	23

Table 1. Publications found between 2011 and September 2024 according to the Pubmed, Portal de Periódico Capes and BVS databases, based on the sub-themes: Lip filler, Botulinum Toxin Type A and Collagen biostimulators.

Source: Authors.

RESULTS

Using the keywords: Botulinum Toxin Type A, Dermal Fillers, Anesthesia, Collagen and Pain, a total of 23 articles were chosen, based on the inclusion criteria mentioned above, in the PubMed, CAPES and BVS databases, in the chosen languages Portuguese, English and Spanish, between the years 2011-2024.

With regard to the Lip Filling sub-theme, no articles were selected on the VHL platform because they did not meet the established criteria, but this does not imply that there were no articles, only that the existing ones did not meet the established criteria.

Table 1 below shows that the anesthetic of choice for lip fillers is lidocaine in cream form or integrated into the filler formula. Vibration anesthesia is also cited as an alternative to topical anesthetic.

Regarding the studies selected to address the topic of botulinum toxin type A (Chart 2), it was noted that there are effective anesthetic procedures for the application of botulinum toxin type A, mostly topical anesthetics, such as ice compresses, cryoanalgesia, anesthetic creams, refrigerant vapor sprays, etc. However, some of these often have varying results and are not administered accurately. Another alternative discussed in the articles and shown to be very effective is vibration anesthesia, which is safe and achieves significant pain reduction.

Table 3 discusses the use of collagen biostimulators, their main applications and their relationship with anesthetic types. With regard to the articles evaluated in the period 2011-2024, in general, it was analyzed that the use of Lidocaine is involved in this aesthetic procedure, with its safety and efficacy already highlighted in the literature.

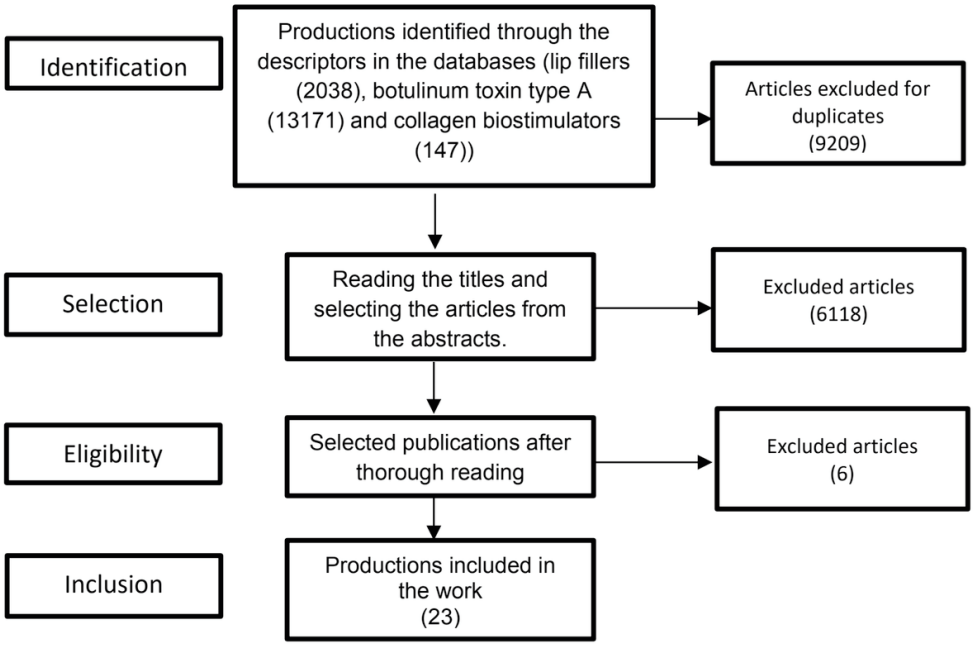
However, when looking at the work carried out over the last 13 years, it is clear to see the importance of and need for more robust and comprehensive clinical studies on the subject of the procedures discussed in this paper, given the need to help orofacial harmonization professionals make more effective decisions.

DISCUSSION

Individuals' behavior in relation to their beauty has undergone an exacerbated change, accompanied by the changes in society's values that have been taking place since the 20th century. The search for the ideal aesthetic has become an increasingly important factor in everyday life. It is altered by a society's social and cultural values and has a major influence on individuals' self-esteem and acceptance (Cavalcanti et al., 2022).

With the aim of meeting beauty standards, the number of aesthetic interventions has grown increasingly, with millions of surgical and non-surgical procedures being carried out around the world in an attempt to meet these expectations.

Modern and increasingly promising treatments offer the possibility of achieving harmony and symmetry in the facial region, resolving functional issues such as pain and masticatory dysfunction, mitigating ageing



Flowchart 1 - Publications found between 2011 and January 2024 according to the Pubmed, Portal de Periódico Capes and BVS databases, based on the sub-themes: Lip filler, Botulinum Toxin Type A and Collagen biostimulators. This shows how the articles included in the paper were selected.

Source: Authors.

Database:	***Authors:***	***Title:***	***Objectives:***	***Year of Publication:***
PUBMED	Guney K, Sezgin B, Yavuzer R.	The Efficacy of Vibration Anesthesia on Reducing Pain Levels During Lip Augmentation: Worth the Buzz?	The study aims to determine the analgesic effect of vibration anesthesia during lip filling procedures and to evaluate its overall effect on patient comfort.	2017
PUBMED	Fulton J, et al.	Filler injections with the blunt-tip microcannula.	Compare filler injections with microcannulas versus hypodermic needles in terms of ease of use, amount of filler needed to achieve the desired aesthetic result, pain perceived by the patient and adverse events.	2012
CAPES	Philipp-Dormston WG, Hilton S, Nathan M.	A prospective, open-label, multi-center, observational, postmarket study of the use of a 15 mg/mL hyaluronic acid dermal filler in the lips.	The primary objective of the study was to evaluate the short-term aesthetic impact of treatment with dermal filler when formulated with Lidocaine for lip enhancement or correction of lip asymmetry.	2014
CAPES	Fischer T, Sattler G, Gauglitz G.	Hyaluron Filler Containing Lidocaine on a CPM Basis for Lip Augmentation: Reports from Practical Experience.	The aim was to evaluate the handling and outcome of lip fillers using hyaluronic acid fillers containing lidocaine, CPM-HAL1 and CPM-HAL2.	2016
PUBMED	Czumbel LM, et al.	Hyaluronic Acid Is an Effective Dermal Filler for Lip Augmentation: A Meta-Analysis.	To investigate the efficacy of hyaluronic acid in lip augmentation. Also to investigate the types and nature of adverse effects (AEs) of HA application.	2021

Chart 1: Database search between 2011-2024 on lip fillers.

Source: Authors.

Database:	*Authors:*	*Title:*	*Results:*	*Year of Publication:*
PUBMED	Seok H et al.	Correction of post-traumatic anterior open bite by injection of botulinum toxin type A into the anterior belly of the digastric muscle: case report.	After BTX-A injection, the anterior open bite showed immediate improvement. Complications and recurrences were not observed during follow-up. Long-term post-traumatic open bite can be successfully corrected by injecting BTX-A into the anterior belly of the digastric muscle without complications.	2013
PUBMED	Wu WT, et al	Ultrasound Imaging of the Facial Muscles and Relevance with Botulinum Toxin Injections: A Pictorial Essay and Narrative Review	Botulinum toxin injections have been widely used in facial cosmetic procedures recently. Ultrasound is recognized as a useful tool for pre-procedural localization of the target muscles. In this pictorial review, we discuss the detailed sonoanatomy of the facial muscles and its clinical relevance, particularly with regard to botulinum toxin injections. In addition, we summarize the findings of clinical studies reporting ultrasound images of the facial muscles.	2022
BVS	Pereira e Silva, Ricardo, et al.	Alkalinized lidocaine solution as a first-line local anesthesia protocol for intradetrusor injection of onabotulinum toxin A: Results from a double-blinded randomized controlled trial.	A total of 116 patients were randomized. The baseline characteristics (age, gender, indication and bladder diary parameters) of Group A and B patients were similar. Pain scores at the end of the procedure were significantly lower with the alkalinized solution (Protocol A and B, respectively, 2.37 ± 0.31 vs. 4.44 ± 0.36, $p < 0.01$). No difference was observed 1 h after treatment (Protocol A and B, respectively, 0.54 ± 0.17 vs. 0.69 ± 0.19, $p = 0.487$). The only adverse event reported was mild to moderate self-limiting hematuria in 15.4% of patients.	2020
BVS	Nambiar AK, et al.	Alkalinized lidocaine versus lidocaine gel as local anesthesia prior to intra-vesical botulinum toxin (BoNTA) injections: A prospective, single center, randomized, double--blind, parallel group trial of efficacy and morbidity	Of 60 randomized patients, 54 received the allocated intervention and were analyzed. The average pain score in the AL group was 17.11 mm (95% CI 8.65-25.57 mm) and in the LG group it was 19.53 mm (95% CI 13.03-26.03 mm), with no significant difference between the groups. The cost of interventional medication in the AL group was almost double that of the LG group. No adverse events were attributed to the instillation of local anesthetic in either group.	2016
PUBMED	Nasb M, et al	Constraint-Induced Movement Therapy Combined With Botulinum Toxin for Post--stroke Spasticity: A Systematic Review and Meta-Analysis.	The efficacy of the BTX-CIMT combination over conventional therapy (CT) for improving post-stroke spasticity still needs to be explored with long-term, rigorously designed multicenter RCTs with a good sample size. However, the BTX-CIMT combination is promising for improving recovery of motor function and improving activities of daily living (ADLs).	2021
PUBMED	Fallahi HR, et al	A mini review on the common methods of pain reduction before filler and botulinum toxin injection	According to reviewed studies, vibration, local anesthesia, and vapocoolant anesthesia are common methods applied in order to reduce pain and discomfort in patients. All of these methods are able to reduce pain through their affects on neuron fibers.	2020
BVS	Yang KY, et al	Antinociceptive Effects of Botulinum Toxin Type A on Trigeminal Neuropathic Pain	These results suggest that the antinociceptive effects of BoNT-A are mediated by an inhibition of positively regulated Nav1.7 expression in the trigeminal ganglion. BoNT-A is therefore a potential new therapeutic agent for control of chronic pain, including neuropathic pain	2016
PUBMED	AHMED, Sara et al.	Effect of Local Anesthetic Versus Botulinum Toxin-A Injections for Myofascial Pain Disorders.	In total, 33 studies were included. A qualitative analysis suggested that local anesthetics and BTX-A were inconsistently effective in reducing pain at all follow-up periods. Meta-analyses revealed that local anesthetic injections were more effective than BTX-A in reducing pain intensity. Several sessions of local anesthetic injections were more beneficial than a single session.	2019

Database:	*Authors:*	*Title:*	*Results:*	*Year of Publication:*
PUBMED	Sharma, et al.	Investigating the efficacy of vibration anesthesia to reduce pain from cosmetic botulinum toxin injections.	Patients reported less injection pain in the half of the face treated with vibration compared to the control side (an average of 1.3 vs 2.4 on a five-point scale; P = 0.000). Overall, 86% of patients preferred to receive vibration with their next BTX-A treatment. There was no significant difference between first-time and repeat BTX-A patients in terms of preference for vibration. Five of the 50 patients experienced transient side effects perceived to be associated with vibration, including tingling in the teeth, increased bruising and headaches. Of the patients who did not request vibration with subsequent BTX-A injections, none cited the decreased efficacy of BTX-A as a reason for their preference.	2011

Chart 2: Database search and respective findings from 2011-2024 on botulinum toxin type A.

Source: Authors.

Database:	*Authors:*	*Title:*	*Results:*	*Year of Publication:*
PUBMED	Sturm et al.	A systematic review of dermal fillers for age-related lines and wrinkles	Permanent and semi-permanent dermal fillers improved subjective ratings of appearance and resulted in greater patient satisfaction than temporary fillers. Long-term efficacy seemed good in the few studies that reported it. Short-term safety seemed favorable.	2011
PUBMED	Silva RMSF da, Cardoso GF.	Use of poly-L-lactic acid as a facial volume restorer	Poly-L-lactic acid can be used as another tool to restore, correct and soften facial deformities	2013
Capes Period	Attenello N, Maas C.	Review of Material and Properties	The addition of lidocaine to CaHA modestly dilutes the elasticity and viscosity of the product, which can be advantageous in certain clinical situations, so that the extrusion force is reduced and the CaHA is easier to spread and less palpable, but still providing adequate support	2015
PUBMED	Zague, Vivian.	Influence of hydrolyzed collagen supplementation on extracellular matrix metabolism and proliferation of human dermal fibroblasts derived from photoprotected and photoexposed areas, cultured in monolayer and dermal equivalent.	An important contribution to understanding the biological effects of CH on skin cells and the feasibility of using it as a functional ingredient in food supplements.	2015
PUBMED	Miranda LHS.	Poly-L-lactic acid and calcium hydroxyapatite: best indications	All dermal fillers are considered effective and safe and can be used by properly trained professionals.	2015
PUBMED	Loghem JV, Yutskovskaya YA, Werschler P.	Calcium hydroxylapatite: over a decade of clinical experience	Calcium hydroxyapatite is a very effective agent for many areas of facial soft tissue augmentation and is associated with a high and well-established safety profile. Calcium hydroxyapatite combines high elasticity and viscosity with the ability to induce long-term collagen formation, making it an ideal agent for a global facial approach.	2015
BVS	de Melo F, et al.	Recommendations for volume augmentation and rejuvenation of the face and hands with the new generation polycaprolactone-based collagen stimulator	Many guidance techniques have been decided upon and the choice depends mainly on the doctor's guidance and safe guidelines. Subcutaneous or deeper, supraperiosteal placement based on PCL is recommended for a face	2017

PUBMED	Goodwin P.	Collagen stimulation with a range of polycapro lactone dermal fillers	Discusses the safety and presentation of biostimulation studies with the Ellansé line of polycaprolactone dermal fillers and cases of patients with facial volume loss.	2018
PUBMED	Papazian MF et al.	Main aspects of facial fillers	In general, fillers are very safe and complications are rare. The most common cases are swelling and infection, which are benign complications with no permanent effects.	2018
PUBMED	Oliveira CSFP de, et al.	Calcium hydroxyapatite: a review of efficacy, safety and imaging when used as a filler and as a biostimulator.	In the case of larger nodules, the recommendation is to treat them with intralesional injections of 5-fluorouracil and lidocaine 1:1 to reduce the action of the fibroblasts at that site. In cases of vascular occlusion, which are extremely rare, the same protocol used for other fillers is recommended, including the use of hyaluronidase.	2021
PUBMED	Martins NMM, Martins RM, Ferreira GR, Silva R de O	Action of the biostimulators poly--L-lactic acid, calcium hydroxyapatite and polycaprolactone on skin rejuvenation.	As far as procedures are concerned, PLLA application techniques have undergone several changes since its introduction to the aesthetic market. Dilutions of 10ml associated with 2% lidocaine have been the main choice of professionals.	2021

Chart 3: Database search and respective findings between the years 2011-2024 on the procedure of collagen biostimulators and some of their applications.

Source: Authors.

and improving people's quality of life (Cavalcanti et al., 2022).

Within this theme, there are 3 aesthetic procedures that are most in evidence, among them Lip Filling, Botulinum Toxin type A and Collagen Biostimulators and it is extremely important to highlight the main forms of anesthesia indicated for each of the cases, as well as their formulation and concentration for each case, seeking to establish what is preached in the literature of the last 13 years regarding this relationship found between the two.

The literature summarizes that the topical application of anaesthetics, especially lidocaine, minimizes the pain and discomfort that the patient might feel during the procedure, and can be associated with techniques that maximize this anaesthetic effect, such as the use of ice packs and vibration anaesthesia. These techniques associated with the anesthetic are not considered mandatory means for the orofacial harmonization procedure, but their efficiency has been reported.

LIP FILLERS

Lip filling procedures have increased dramatically in recent years and many different techniques are used to minimize pain for the patient and during the procedure (Guney et al., 2017).

Minimizing patient discomfort is the highest priority with all minimally invasive aesthetic procedures, and this requires a gentle technique and slow administration of the product (Guney et al., 2017), despite this, some adverse effects such as potential swelling, bruising and an unnatural appearance after treatment are considered common side effects of the treatment (Philipp-Dormston et al., 2014).

Lip filling with hyaluronic acid containing lidocaine is well established and improves the outcome of the procedure. Studies show that the vast majority of patients present results of uniformity, distribution and fluidity, and above all, they presented a mild intensity of pain during the procedure (2.72 ± 1.72 on the 0-10 pain assessment scale) (Fischer et al., 2016).

In this sense, filler brands choose to have 0.3% Lidocaine in their composition, such as Juvéderm and Restylane (Czumbel et al., 2021). However, in order to improve pain management and in conjunction with topical anesthetic creams, vibrating devices are also used (Guney et al., 2017).

This vibratory mechanism is based on Melzack and Wall's "gate theory" of pain, which postulates that pain stimulation can be reduced if there is concomitant stimulation. The method is easy to apply, low cost and has the rapid onset (Guney et al., 2017).

Lip fillers are usually applied using hypodermic needles, most of which are supplied with the products. This is associated with pain, bruising and laceration of the vessel. For this reason, the use of blunt-tipped cannulas is applied in such a way as to reduce all of these issues, in addition to the operator having the possibility of increasing the area where they are working with less fear of adverse effects (Fulton et al., 2012).

In view of the facts mentioned above, it is clear that lidocaine is the gold standard, but it can be combined with other forms of anesthesia for greater patient comfort and greater ease for the operator.

BOTULINUM TOXIN TYPE A

Botulinum toxin type A (TXB-A) attenuates orofacial nociception, and its effects in treatments and applications involving skeletal muscle are very well established, due to the inhibition of acetylcholine exocytosis, excreted in the nerve endings and the induction of muscle paralysis (Yang et al., 2016).

In line with the above, it has also been observed that TXB-A injections can cause muscle atrophy, thereby reducing muscle volume (Seok et al., 2013). In this sense, it has been reported that the needle puncture required to achieve the results mentioned above for this procedure can cause a certain degree of pain and can be associated with varying levels of patient discomfort and anxiety (Sharma et al., 2011).

Thus, pain and anxiety related to multiple injections in these procedures is a problem that most patients face. Success in minimizing pain during injection increases the patient's comfort, satisfaction and trust in the professional (Sharma et al., 2011).

Initially, the use of vibration anesthesia is presented, which has repeatedly been shown to relieve pain sensation effectively and safely, probably by reducing the transmission of pain from peripheral receptors to the brain. Thus, counter-stimulation by vibration can minimize the sensation of pain at the brainstem/spinal cord level, but other central and peripheral mechanisms probably contribute to the analgesic effect of vibration (Sharma et al., 2011).

In line with these studies, additional hypotheses have emerged to explain the anesthetic properties of vibration, including distraction, self-hypnosis and also the power of suggestion in susceptible patients.

In view of this, other modalities commonly used to minimize injection pain, with varying levels of efficacy, are topical applications of ice packs, cryoanalgesia, cooling vapor sprays and anesthetic creams (Ahmed et al., 2019; Sharma et al., 2011). Since the anesthetic effect of ice and cooled air is often variable, these modalities cannot be administered precisely (Sharma et al., 2011).

With regard to refrigerant vapor sprays, it is said that when the refrigerant is sprayed onto the skin, which is naturally hot, evaporation occurs by absorbing the heat, this phenomenon leads to its cooling. As the temperature drops, the conduction velocity of the nerve fibers decreases, resulting in pain relief. The cooling vapor spray was able to decrease 59% of the perceived pain score for neurotoxin injections

and 64% of the perceived pain score for filler injections (Fallahi et al., 2019).

Another alternative is topical anesthetic ointments such as EMLA (lidocaine 2.5% and prilocaine 2.5%), which have a topical application time of 20 to 60 min, limiting their applicability in office procedures. In addition to the fact that these anesthetic ointments may not be appropriate in conjunction with TXB-A, one study showed that topical anesthetics can reduce the effectiveness of TXB-A, because the nerve inactivation effect of topical anesthetics interferes with the nerve stimulation necessary for the toxin's effect (Sharma et al., 2011).

With this, it can be seen that the use of the topical anesthetics mentioned above, in addition to vibration anesthesia, and the very combination of pain reduction methods simultaneously can drastically reduce the pain of cosmetic injections related to TBX-A.

COLLAGEN BIOSTIMULATORS

Collagen biostimulators are part of a group of procedures that make up facial rejuvenation, mainly with the precepts of using minimally invasive procedures (Papazian et al., 2018) and seeking to expand the soft tissues of the face, increasingly acting to reduce facial aging as a result of improved safety profiles, short treatment times and efficacy (Attenello & Maas, 2015).

Collagen is a protein produced by our body and plays a structural, elastic and, above all, resistant role in the skin (Zague, 2015). As a result, these stimulators are gaining more and more ground in the area of Orofacial harmonization, actively acting on the skin's sub-layers, improving the skin's hydration and elasticity, leaving it looking more harmonious (Miranda, 2015).

These are classified according to their durability and absorption. The duration depends on the metabolism of each organism, but ranges from eighteen months to five years. The main collagen biostimulators to be highlighted are Poly-L-lactic acid (PLLA), Calcium Hydroxyapatite (CaHA) and Prolicaprolactone (PCL) (Miranda, 2015).

PLLA is a semi-permanent, biodegradable product whose degradation occurs mainly through non-enzymatic hydrolysis (Martins et al., 2021). Its application must be preceded by a dilution with 5 mL of distilled water, 24 hours before the procedure, with 2 mL of 2% Lidocaine with 1:200,000 adrenaline added at the time of application (Silva & Cardoso, 2013).

These patients should be anesthetized topically with 4% Lidocaine cream about 20 minutes before the procedure. Around 0.05 mL to 0.1 mL are applied to the deepest layer of skin (dermis), in subcutaneous and supra periosteal regions, through tunneling or point to point, with a needle gauge of 26 to 30 Gauge (Silva & Cardoso, 2013).

CaHA is a synthetic collagen biostimulator. It is one of the best-studied dermal fillers in the world and has been used to correct lines and folds adapted to severe pain and to restore lost volume (Loghem et al., 2015), leaving remnants of microspheres, which will induce the formation of a collagen layer through a fibroblastic response, thus forming a support framework for the new tissues formed (Oliveira et al., 2021).

Before applying this product, it is necessary to place anesthesia on the site by infiltrating or regionally blocking with a local anesthetic. 0.5 mL of 0.5% Lidocaine in the supratrochlear region is sufficient, waiting around 10 minutes for the procedure to begin. Other authors suggest miniblocks of 0.2 mL of 0.5% lidocaine, injected bilaterally into the groove above the third incisor (Loghem et al., 2015).

The addition of lidocaine to CaHA modestly dilutes the elasticity and viscosity of the product, which can be advantageous in

certain clinical situations, so that the extrusion force is reduced and the CaHA is easier to spread and less palpable, but still providing adequate support (Attenello & Maas, 2015).

PCL, on the other hand, is a bioabsorbable and non-toxic medical polyester used for surgical implants, tissue engineering and filling material in dentistry. It falls within the group of collagen biostimulators, launched on the market in 2009, and is a biocompatible and absorbable dermal filler. With regard to longevity, it is expected to last from one to four years, depending on the manufacturer. This variation is due to the initial average length of the individual polymer chains in the microspheres and the number of ester bonds, which increase in each of the products, and which progressively split until the final degradation size (Melo et al., 2017).

With a view to reducing the patient's pain, local anesthesia with 2% Lidocaine with or without epinephrine is recommended, and this dermal filler can also be mixed with 2% Lidocaine. This mixture can be carried out safely, without detrimental changes to the physical properties of the original dermal filler. In addition, a maximum of 0.2 ml of lidocaine mixed with 1 ml of the dermal filler is recommended (Melo et al., 2017).

This showed that the anaesthetic Lidocaine is considered the first choice in the literature when it comes to orofacial harmonization procedures, especially when it involves procedures related to collagen biostimulators. It was also noted that mixing the filler with this 2% anesthetic does not result in a loss of efficacy and maintains the same patient safety, making it a very interesting alternative to be used.

CONCLUSION

Today's main orofacial harmonization procedures offer possibilities for achieving harmony and symmetry in the face, thus resolving functional issues such as pain and masticatory dysfunction, as well as slowing down aging and improving patients' quality of life.

Thus, it can be concluded that the anesthetic most commonly used in procedures is lidocaine, making it the gold standard in its topical form, which can be associated with techniques such as ice packs and vibration anesthesia, as well as the alternative anesthetic prilocaine, which is widely used in TXB-A procedures.

In order to control and manage the pain naturally present in the main aesthetic procedures, the use of anesthetics is an excellent tool. Even so, their use must be individualized in order to achieve the best result for the patient.

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