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Pain management in aesthetic medicine

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Extended Abstract

Abstract

Managing pain in aesthetic medicine takes a different leap when compared to general medicine or surgery, where some level of pain or discomfort has already set in. Pain in an aesthetic medical procedure is multifactorial; it depends on the type of procedure (botulinum toxin, fillers, threads, lasers, radiofrequency, infrared and chemical peel), site of treatment (face, body, bony area and hairy area), type of pain–nociceptive, neuropathic or inflammatory and patient's threshold to pain. To some, the psychological pain of what may go wrong can be more than the physical pain caused by the procedure. There is also the proportion of pain to skin color in laser related procedures. It is well known that anxiety and fear also play an important role in aesthetic procedures. Managing pain is just as much about managing expectations and it starts during consultation. Giving an insight to the pain and describing the sensation helps to prepare the patient. A holistic approach will be to provide a soothing ambience, clinical hypnotherapy and engaging all the senses - sight, hearing, smell, taste and touch, which are proven adjuvants in minimizing pain. Thereafter, simple and easily available approach will be to use ice cubes, cold sprays, ice gels, topical anesthetic cream, etc. Pharmacological pain relief can be classified into non-sedative and sedative options, with proper monitoring and emergency facilities required for the later. With so many options available, the physician's suggestion for pain management must be discussed with the patients and must not be carried out without their consent. Additionally, the choice of pain management must not interfere with the treatment outcome, such as using sedation when the patient's input is important during augmentation procedure. Other options include regional blocks, field blocks, use of tumescent and the correct concoction. Every physician will use his / her favorite formula. Pain management agent for Lasers will be different compared to pain management in injectable. We reviewed over 250 journals in aesthetic medicine which has some suggestion in pain management and narrowed it down to 10 best pain management practices, for selected procedures. The objective for today's aesthetic professionals must be to minimize the fear of pain, as well as effectively reducing the physical pain that ensues. With so many techniques and pain relief formulations available in aesthetics, the old saying, 'No pain, No gain' should not have a place in aesthetic clinics. The best practitioners need to keep their pain management protocol under review, operate a feedback system with patients, learn from individual experiences and adapt to tailor future pain management strategies.

The number of aesthetic procedures requiring the use of needle-based injections is progressively increasing due to their widely successful and effective results. Of these injections, botulinum toxins and injectable hyaluronic acid dermal fillers are most often used. According to the American Society for Aesthetic Plastic Surgery, hyaluronic acid gels account for approximately 80 percent of the nearly two million soft tissue filler injections performed in 2006. The most commonly utilized soft tissue filler is Restylane® (Medicis Aesthetics Inc., Scottsdale, Arizona), a small gel particle hyaluronic acid (SGP-HA) that is indicated for mid-to-deep dermal implantation for the correction of moderate-to-severe facial wrinkles and folds, such as nasolabial folds. All injections may cause some discomfort to the patient as well as postinjection ecchymosis and swelling. Topical anesthetics and ice are the most often employed methods for limiting the degree of pain, ecchymoses, or swelling.

Much research has been devoted to the development of effective topical anesthetics of the skin to minimize or eliminate the discomfort experienced by the patient during the procedure. Many studies exist that scrutinize the efficacy of topical anesthetics for dermatological procedures and several studies specifically have investigated mixing 2% lidocaine with HA prior to injection. Effective anesthesia via topical administration is difficult to achieve on keratinized or nontraumatized skin due to limited transepidermal absorption. Various creams, ointments, and gels have been used for this; however, their efficacy has been less than ideal and complications have occurred. While a variety of topical anesthetics are currently available, their use is limited by variable efficacy, lengthy application times, and often elaborate and time-consuming techniques for occlusion and removal of the anesthetic. Consequently, there has been an increased need for safe, more effective and expedient topical anesthesia.

Recently, research has turned toward alternative methods of topical anesthesia when injecting dermal fillers, such as skin cooling through the use of ice or cooled air. The use of cold to relieve pain has been employed since Hippocrates in the 4th century BC. Cooling the tissue also induce vasoconstriction, which may decrease swelling and ecchymosis. The Restylane Consensus Group published its proceedings, which included the use of patient comfort techniques, such as the use of icing before, during, and after treatment with HA.8 Half of the panel members assert that icing after treatment achieves the most benefit, yet another 40 percent of members use ice before, during, and after treatment. The American Society for Dermatologic Surgery (ASDS) Guidelines recommends several mechanisms to diminish dermal filler injection pain including preinjection application of ice. Unfortunately, the effect of applying ice or cooled air is often unpredictable because these modalities cannot be delivered accurately and precisely to targeted areas. Also, applying ice and cooled air directly to the site of injection may be associated with risks to the patient because the temperature is imprecise and cannot be controlled.

The ArTek Spot® (ThermoTek, Inc., Flower Mound, Texas), a commercially available spot contact cooling system, has been used to control pain associated with hair and tattoo removal procedures. It also has been used to prevent pain and discomfort associated with dermal fillers and other injectable as an alternative to ice cubes, ointments, and chemical sprays. To date, however, no randomized, controlled trials have assessed its safety and efficacy for prevention of pain and ecchymosis in subjects receiving dermal filler injections. The purpose of this study was to assess the efficacy, safety, and subject satisfaction of a contact topical cooling system on the reduction of subjective and objective pain and ecchymosis when applied prior to HA gel injections for correction of nasolabial folds.

Subjects

This study received full institutional review board approval by US IRB, Inc. prior to commencement (U.S.IRB2009CCCR/01). The study was conducted as an open-label, randomized, split-face, two-center, investigator-blinded trial involving male and female subjects ages 35 to 65 years with moderate nasolabial folds. Subjects were excluded if they had used aspirin, nonsteroidal anti-inflammatory drugs (NSAIDS), anticoagulants, St. John's Wort, or high doses of Vitamin E within two weeks prior to screening/treatment. Any subject who had received dermal fillers within 12 months was also excluded.

Twenty subjects were enrolled at two sites in the United States. At the Screening visit, written, informed consent was obtained from each subject. If the subject agreed to participate, he or she was assigned the next sequentially available subject number. In addition, each subject's medical history, demographic information, and previous and concomitant medications were collected and reported. The subject was asked to return to the investigative site on a scheduled visit (Day of Injection).

On the Day of Injection, blinded investigators utilized a randomization scheme for assigning each subject a side of the face for application of the cooling system. Prior to injection, the topical cooling system was set at 35°F and a cooled applicator was applied for 20 seconds on one nasolabial fold. A control using a noncooled applicator was applied for 20 seconds on the other nasolabial fold. The physician assistant applied the applicator without the investigator knowing whether it was cooled or noncooled. Postprocedure ice packs were prohibited so as not to confound the subject's perception of procedure-related pain.