

Article Information

Received date : 26 March, 2024

Published date: 11 April, 2024

*Corresponding author

José David, Rosales Figueroa, Centro de Especialidades Médicas de Oriente Jutiapa, Guatemala

DOI: 10.54026/ARDC/1016

Key Words

Keloid scars; Wound borders; Reticular dermis; Aesthetics

Distributed under: Creative Commons
CC-BY 4.0

Keloid Cryotherapy: Experience in patients from Jutiapa, Guatemala

Rosales Figueroa, José David*, Guzman Abril, Ana Gabriela

Centro de Especialidades Médicas de Oriente, Jutiapa, Guatemala

Abstract

Keloid scars, result from a chronic inflammatory response after trauma to the reticular dermis. Although first line treatment in Guatemala is triamcinolone intralesional injections, I present 2 cases treated with cryotherapy. Cryotherapy has proved to be a good treatment option for patients suffering from keloid scars, since it induces an antifibrotic inflammatory response.

Case Report

Keloid scarring is an abnormal response to skin trauma at the level of the reticular dermis. Patients with color skin are more frequently affected, with a reported incidence between 4 to 16%. The resulting scars are bigger than the original wound borders, elevated and often associated with pruritus, pain and in some cases contraction on adjacent tissues [1]. Aesthetics compromise is associated with a decrease in patient quality of life. There are many treatments options, being triamcinolone infiltration our first line treatment. Post operative recurrence is common after surgical excision, some reports higher than 60% [2,3]. Keloids have an up regulated chronic pro inflammatory state at the level of the reticular dermis, which suggest that this lesions are an inflammatory disorder in the reticular dermis instead of being skin tumors [4].

Conventional spray cryotherapy has been used for many years, although it has been disregarded due to its side effects. Recently the intralesional technique has demonstrated good results with lower side effects. Cryotherapy consist on 2 phases of cellular destruction, the first phase causes direct cell injury due to the rapid freezing. The second phase is the vascular damage which results in necrosis [3].

Cryotherapy induces several changes in the skin, by inducing the secretion of a proinflammatory mediator profile that promotes rejuvenation of the scar tissue, induces normal differentiation of fibroblast, reduces wound contraction, increasing the ratio of collagen 3 to collagen 1, and conserves the cellular matrix promoting normal wound repair [2-4].

Young et Al. Reported on their study that cryotherapy keloid presented fibrillar (fine and shallow) collagen bundles instead of the thick and dense bundles on untreated keloids, reduction in vascularity, increased number of M2 macrophages an levels of matrix metalloproteinasa-9 inducing an antifibrotic inflammatory pattern [5].

I present the result of treating 2 Guatemalan patients with cryotherapy (Image 1), the first patient an 80 years old hispanic woman was treated with spray technique, on a flat keloid causing contraction of the shoulder, limiting mobility and causing pain, she received 2 treatment sessions at a 6 week interval, after which she achieve relieve, she developed post cryotherapy hypopigmentation which resolved 3 month after the last treatment. The second patient, a 25 years old woman, was treated with intralesional cryotherapy for an earlobe keloid secondary to a piercing, she received 4 treatment sessions at a 6-week interval. Both patients received 2 cycles of 2 minute complete lesion freeze, for each treatment session (Figure 1).



Figure 1: A) Initial lesion without treatment B) Initial lesion complete freeze of the keloid C) After 2 treatment sessions, scar no longer presents contraction nor pain for patient 1. D) Patient 2, initial lesion. E) Lesion after the first treatment. F) Lesion after second treatment. G) Patient 2, 6 weeks after the fourth treatment.

Conclusion

Cryotherapy in keloid scars gives good results on patients, it can be applied intralesional or as spray, the key is on the time the lesion strays frozen. Patients experience relieve after their first treatment session.



References

1. Walsh LA, Wu E, Pontes D, Kwan KR, Poondru S, et al. (2023) Keloid treatments: an evidence-based systematic review of recent advances. *Syst Rev* 14 de marzo de 12(1): 42.
2. Limmer EE, Glass DA (2020) A Review of Current Keloid Management: Mainstay Monotherapies and Emerging Approaches. *Dermatol Ther* octubre de 10(5): 931-948.
3. Van Leeuwen MC, Bulstra AE, Ket JC, Ritt MJ, van Leeuwen PA, et al. (2015) Intralesional Cryotherapy for the Treatment of Keloid Scars: Evaluating Effectiveness. *Plast Reconstr Surg Glob Open*. 3(6): 437.
4. Ogawa R (2017) Keloid and Hypertrophic Scars Are the Result of Chronic Inflammation in the Reticular Dermis. *Int J Mol Sci* 10 de marzo de 18(3): 606.
5. Lee Y, Kim S, Kim J, Kim J, Song S, et al. (2020) Tissue-remodelling M2 Macrophages Recruits Matrix Metallo-proteinase-9 for Cryotherapy-induced Fibrotic Resolution during Keloid Treatment. *Acta Derm Venereol* 100(17).