

Cryotherapy

Kriyoterapi

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İzmir Katip Çelebi University Faculty of Medicine, Department of Dermatovenereology, İzmir, Turkey

1-What is cryotherapy?

Cryotherapy is a technique involving withdrawal of heat from tissues, which is used frequently in the treatment of benign and some malignant lesions in dermatology¹.

2-What substance is used in cryotherapy?

Although there are various cryogens in cryotherapy procedures, the most widely used one is liquid nitrogen. With a boiling temperature of -195.8 degrees, liquid nitrogen is stored in special cylinders in gas form at that temperature and filled into cryotherapy guns²⁻⁴.

3-What are the cryotherapy application techniques?

Dipstick technique: A cotton-tipped applicator dipped in liquid nitrogen is directly applied to the lesion^{1,2}.

Spray technique: It can be applied in two ways, open and closed. The open spray technique is the most widely used method; the spray is applied from 1-2 cm distance with a 90-degree angle. It is preferred for large and irregular areas. In the closed spray technique, the spray reaches the skin through a funnel-shaped apparatus. It is preferred in small lesions to protect the normal skin area^{1,2}.

Cryoprobe technique: It is applied directly to the lesion with a metal tip; it is preferred when the freeze is wanted to reach deep inside^{1,2}.

Intralesional cryotherapy: Special needle-shaped cryotherapy probes are inserted inside tissues to achieve more effective freezing^{1,2}.

From these methods, I would like to discuss particularly the intralesional cryotherapy method and our experiences with it. We can achieve quite successful results in the treatment of hypertrophic scars and keloids that are resistant to other treatments. Here, we use a shortened serum set as an

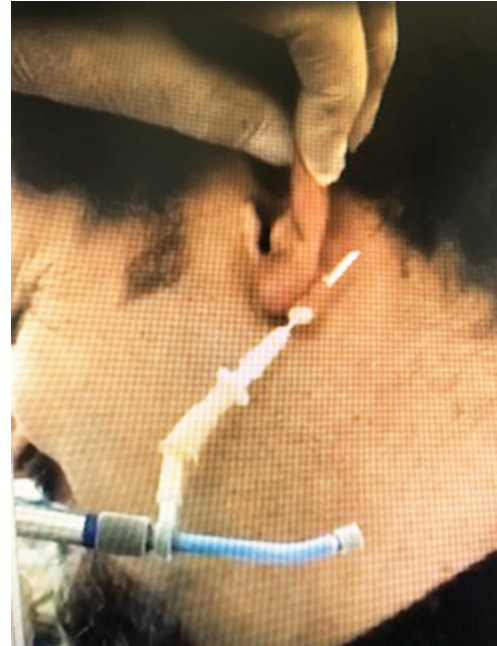


Figure 1. Intralesional cryotherapy, initial

Address for Correspondence/Yazışma Adresi: Ali Karakuzu MD, İzmir Katip Çelebi University Faculty of Medicine, Department of Dermatovenereology, İzmir, Turkey
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ORCID ID: orcid.org/0000-0002-9962-9137



Figure 2. Intralesional cryotherapy, freezing cycle completed apparatus. We connect the set we prepared to a cryotherapy gun. After inserting the injector needle (21 G) right into the center of the lesion,

we start spraying the liquid nitrogen (Figure 1). We create a freezing cycle in each application (Figure 2). Depending on the size of the lesion, 2-5 cycles of application will usually be sufficient. As you can see in the images, quite successful results can be obtained in keloids developing after an ear-piercing procedure. It can also be combined with other treatment methods. No anesthesia is required for the application in adult patients.

4-What are the diseases for which cryotherapy is contraindicated?

Cryotherapy is contraindicated for patients diagnosed with cryoglobulinemia, cold urticaria, cryofibrinogenemia, collagen disease, and platelet deficiency, and for patients using immunosuppressive drugs^{1,2}.

References

1. İçke İ, Başak PY: Cryotherapy in Dermatology. *Turkiye Klinikleri J Med Sci* 2004;24:383-95.
2. Çalikoğlu E, Gürgey E: The Range of Use of Cryosurgery in Dermatology. *Turkiye Klinikleri J Dermatol* 1999;9:104-11.
3. Prohaska J, Bermudez R: Cryotherapy. Treasure Island, StatPearls Publishing, 2018.
4. Zouboulis VA, Zouboulis CC: Small cryotherapy devices for the treatment of skin warts. *J Dermatolog Treat* 2017;28:745-50.