

Surgical Pearl

Novel cryotherapy techniques using liquid nitrogen

Ahsan Hameed

Department of Dermatology, Shifa College of Medicine, Islamabad

Cryotherapy or cryosurgery, as it is commonly known, is an essential tool in a dermatologist's armamentarium. It is useful in the treatment of a variety of skin diseases like, warts, skin tags, basal cell carcinoma, molluscum contagiosum, and keloids, just to name a few. The procedure is simple and effective, and is usually done as follows:

1. Cotton bud soaked with liquid nitrogen
2. Liquid nitrogen spray gun

Both the procedures have been shown to be equally effective.¹

1. Cotton bud technique

The conventional technique employs using a cotton bud soaked with liquid nitrogen which is then applied to the lesion till frosting of the lesion takes place. This is the most economical method as it does not require any equipment other than liquid nitrogen. The size of the lesion generally determines the size of the cotton bud, while increasing the duration of contact increases the depth of cryotherapy. For very small lesions like a molluscum contagiosum, the cotton bud, however, proves to be too large and the operator ends up freezing the

perilesional skin as well, which is not only unnecessary but has two drawbacks. Firstly, it makes the procedure more painful and therefore scary, as molluscum contagiosum most commonly affects the children. Secondly, it leaves behind perilesional hyperpigmentation which takes a long time to disappear causing distress to the parents.

Both these problems can be taken care of by a simple and novel modification. Once the cotton bud is soaked and charged with liquid nitrogen, a common pin is thrust into the cotton bud from the distal end leaving the head and 2-3 mm of the shaft exposed.

(**Figure 1a**). The exposed common pin soon gets frosted and works like a fine cryo-probe, just the size of the lesion. The cotton bud serves as a reservoir of liquid nitrogen keeping the pin frosted, so that multiple lesions can be treated before recharging it. The lesion is touched with the head of the frosted pin for as long as is required without causing much pain, and certainly no perilesional pigmentation. This modification is also useful in treating difficult areas like the nasolabial folds, margins of the nostrils, concha and on the eyelids, without damaging the surrounding skin. It is important that the pin is thrust in after the cotton bud is soaked in liquid nitrogen. This gives the cotton bud a firm grip on the

Address for correspondence

Dr. Ahsan Hameed
Associate Professor of Dermatology
Shifa College of Medicine
H-8/4 Islamabad – Pakistan
E-mail: ahsanhameed23@hotmail.com

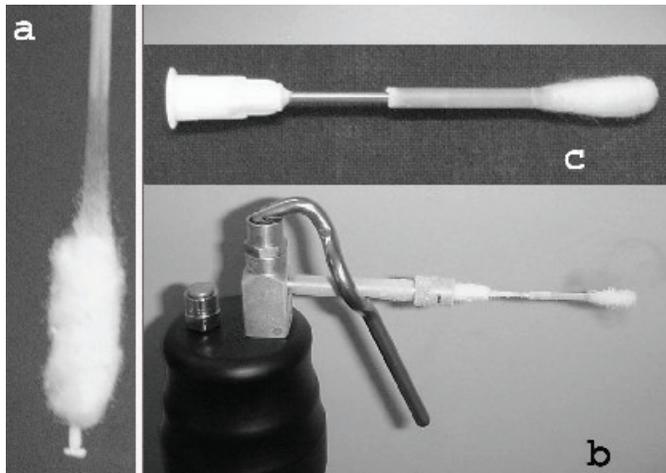


Figure 1 a) Cotton bud with the common pin in place, b) Cotton ear bud cut and slid onto the cryospray gun nozzle ready for use, c) a close up view of the modification in

common pin, so that it does not slide in when pressure is applied during treatment.

2. Liquid nitrogen spray gun

The liquid nitrogen spray gun comes with different accessories, like nozzles and probes of various sizes. The nozzle attachment produces lot of fumes and a hissing noise which can be frightening to the patient. The probes, on the other hand, have the disadvantage of being reused on a number of patients without sterilization raising undue concerns among the patients. If sterilization of the probes, however, is desired, then an adequate number of probes need to be purchased. A lot of liquid nitrogen is also wasted when used in a spray gun

A convenient modification is the use of ear buds for this purpose. Ear buds are cheap, disposable and easily available. The plastic shaft of the ear bud, which is hollow, is cut in half with scissors, and the cut end is slid over one of the nozzles to secure a tight fit.

Figure 1b The lever of the spray gun is pressed thus soaking the cotton bud with liquid nitrogen. The liquid is kept flowing till droplets start dripping from the bud. The system is now ready for use. Multiple lesions can be treated and the bud recharged periodically from the spray gun without wasting time and liquid nitrogen. This system allows a new bud to be used for every patient, and at the same time saves liquid nitrogen. The bud can be made fluffier and bigger according to one's needs, by wrapping more cotton on to it.

Both these procedures have been used extensively in my clinical practice and I have found them very useful, convenient and easy.

References

Ahmed I, Agarwal S, Ilchyshyn A, *et al.* Liquid nitrogen cryotherapy of common warts: cryo-spray vs. cotton wool bud. *Br J Dermatol* 2001; **144**: 1006-9.