

Can Injectable Lignocaine be Replaced by Topical Anesthesia in Melanocyte Transplant or Ultrathin Skin Grafting?

Sir,

Anesthesia of the recipient as well as donor areas is required while performing grafting procedures in vitiligo. This anesthesia is achieved in usual cases by infiltrating the skin with injection lignocaine or any other suitable local anesthetic solution. In addition, while performing ultrathin skin grafting or nonculture cellular transplantation for vitiligo, the local anesthetic solution is supposed to be infiltrated around the margins of the donor area to prevent any irregularity in the skin surface at the time of taking the graft. And this is a really painful injection and is not liked by the majority of the patients.

Many topical anesthetic creams have become available in India over the last few years, and they are claimed to provide a long-lasting anesthetic effect after topical use on the skin. These topical anesthetic creams are used routinely by dermatologists in cosmetological procedures such as laser treatments, botulinum toxin injections, filler injection treatments, and microneedling procedures.^[1,2] Other specialties also use these topical creams for different indications.^[3]

We started using topical anesthetic creams as alternative to injectable local anesthetics in ultrathin skin grafting in early 2011 and we were really encouraged by the results with the first few patients. This made us to think about a comparison study between the local anesthetic effect achieved with topical anesthetic cream application and that after infiltration anesthesia in patients undergoing vitiligo grafting.

We, thus, enrolled 10 patients in whom we knew we would be doing either ultrathin skin grafting or non-cultured epidermal cell suspension (NCES) transplantation on more than one occasion. In the first session, the grafting procedure was performed entirely under the influence of a topical anesthetic cream. The cream that we used in all these patients was eutectic mixture of lignocaine and tetracaine (Tetralid cream marketed by Ajanta Labs). The cream was applied as a thick film on the area to be operated and then covered with the transparent adhesive film provided with the kit. The cream was kept applied for at least one hour before the procedure was undertaken. For the comparison study, the patients were given no other oral drug including analgesics or anxiolytics before or during the procedure. The patients were asked to rate the overall anesthetic

effect on a 1 to 10 grading scale separately at the donor site where the ultrathin graft was taken and at the recipient site where dermabrasion was carried out by using either manual or electrical dermabrator. If the pain perception was too high for the patient to tolerate at any of these sites they were given the option of an additional infiltration anesthetic as well. The anesthetic effect was labeled as excellent if there was no pain or a very mild pain felt that was not uncomfortable to the patient at all. Similarly, the anesthetic effect was labeled as good or poor depending on whether the pain perceived was a bit uncomfortable or too uncomfortable for the patient undergoing the procedure.

In the next session of grafting, the patients were given injectable local anesthetic infiltration with 1% lignocaine solution (without adrenaline) at both the donor as well as recipient sites. The patients were again asked to rate the pain perception at the time of the injection and then during the procedure separately at the donor and recipient areas. They were then specifically asked to give their choice of anesthetic for any further next grafting procedure if it would be needed in them.

The age of the patients who were enrolled for this small study ranged from 15 years to 35 years with a mean age of 24 years. There were 3 males and 7 females in the group and all were grafted for resistant stable vitiligo. The procedures performed were ultrathin skin grafting in 6 patients and NCES transplantation in 4 patients. Sites where the grafting procedure was performed included the face, neck, forearms, and legs. Genital and acral lesions were not included in the comparison study.

All the patients (10 of 10) unanimously rated the pain associated with the infiltration of local anesthetic solution as much worse than that felt while the ultrathin graft was being taken under the influence of the topical anesthetic cream at the donor site. Thus, enrolled patients unanimously rated the topical anesthetic cream as 'much better' than the infiltration anesthesia for the donor area. Numerically, the mean anesthetic effect score with the use of topical and injectable anesthetic at the donor site was 8.8 and 2.8, respectively.

For the anesthetic effect at the recipient site dermabrasion, the results were a bit different. Of the 10 patients

enrolled, 8 felt that the anesthetic effect achieved with the topical anesthetic cream was good with the dermabrasion tolerable under its effect. They rated the anesthetic effect of the topical anesthesia as 6-9 (mean 7.375) on the 1 to 10 scale. After receiving lignocaine infiltration anesthesia at the recipient site in the 2nd session of grafting, all these patients gave an overall preference for the topical anesthetic over the injectable form. Two patients did not tolerate the dermabrasion procedure under the topical anesthesia and had to be given additional infiltration with 1% lignocaine injection. They rated the anesthetic effect with the topical anesthetic cream as 1 and 2 on the 1 to 10 scale. They rated the infiltration anesthesia as better than topical creams at the recipient site. Numerically, the mean anesthetic effect score with the use of topical and injectable anesthetics at the recipient site was 6.3 and 3.8, respectively.

Both topical as well as injectable anesthetics are used by dermatologists and even non-dermatologists in their day-to-day procedural practice.^[1-3] However, the chances of adverse effects with the injectable anesthetics, especially the risk of anaphylaxis, is always on the mind whenever such an agent is administered in a patient. In fact, ideal situation demands that all emergency drugs including adrenaline injections, ambu bag, oxygen cylinders as well as endotracheal tubes should be available whenever any local anesthetic solution is to be injected into a patient.^[4] Topical anesthetic creams provide an alternative to injectable anesthetics in patients undergoing cosmetological or even dermatosurgical procedures.^[5] While there are some reports of some local adverse effects with the use of topical anesthetic creams, the risk of serious side effects such as anaphylaxis is really negligible with these combinations.^[5-7] This makes the use of these local anesthetic creams safer to use than the injectable anesthetics. Additionally, as there are no injections and no needles to be used there is a definite positive psychological impact on the patient. Most of the dermatologists are still skeptical about the efficacy of these topical anesthetic creams in simple surgical procedures like vitiligo grafting. This small pilot study should dispel these doubts in the minds of all dermatologists who perform vitiligo grafting especially split-thickness skin grafting or NCES transplants routinely. What we have observed is that it is really easy to take a split-thickness or ultrathin skin graft under the effect of the topical anesthetic cream with

patients tolerating the procedure quite well at this site. And as there are no injections to be made there is no bumpiness of the skin surface at the donor site. Even for the dermabrasion at the recipient site, topical anesthetic creams provide sufficient anesthetic effect, but not to the same extent as that for taking a graft. Some patients do need an additional infiltration with injectable local anesthetics at the recipient site, but this constitutes a minority only. The most significant disadvantage with the use of topical anesthetic creams is the time taken for the local anesthetic effect. The patient has to wait for about 1 hour after the application of the topical anesthetic before the surgical procedure can be carried out.

Therefore, what our small study has demonstrated is that the use of injectable local anesthetics can be totally avoided in majority of patients undergoing ultrathin skin grafting or non-melanocyte transplantation procedure.

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