Electrosurgery and Electrocautery for Patients and Caregivers

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Electrosurgery is a dermatological technique that uses electrical currents to control bleeding and destroy skin tissue. The electric current used in electrosurgery can damage, dehydrate, and vaporize the affected skin tissue, thereby treating cancerous skin conditions. Electrosurgery is effective for treating new skin cancers, and can be used on recurrent skin cancers as well. During electrosurgery, a high frequency electric current is used on the skin through electrode(s) which creates heat that breaks down the skin tissue and causes cell death.

Some of the main types of electrosurgery are electrodesiccation, electrofulguration, electrocoagulation, and electrosection. Electrodessication damages superficial tissue through dehydration. It involves an active electrode touching the outer area of your skin or being inserted into your skin. Electrofulguration is similar to electrodessication, but the electrode is instead held slightly away from the skin in order to form a spark between the electrode and the skin. Electrofulguration also creates damage to just the top layer of skin. Electrodessication and electrofulguration are commonly used for superficial lesions, such as superficial skin cancers (like basal cell carcinoma or squamous cell in situ), as well as small angiomas or actinic keratosis.

Electrocoagulation is used to damage deeper tissue and stop the bleeding of blood vessels. It uses electrodes to produce a current at lower power than electrodessication and electrofulguration. Electrocoagulation is often used to treat skin cancers (like basal cell carcinoma and squamous cell carcinoma) and vascular skin conditions like pyogenic granuloma.

Electrosection involves using an active electrode to simultaneously cut the skin and minimize bleeding through cauterization of damaged blood vessels. It is often used for many applications in skin surgery.

Electrocautery is sometimes incorrectly used interchangeably with electrosurgery. However, electrocautery is not truly electrosurgery since a direct current heats the cautery probe, but no current flows through the patient.

The complications of electrosurgery include the potential for delayed bleeding, scarring with a light or dark spot, a burn, electric shock, fire, and inhalation of surgical smoke. Electric currents from electrosurgery can also cause implanted cardiac devices, such as cardiac pacemakers or defibrillators, to malfunction; it is important to share with your skin surgeon if you have any of these devices so that this can be considered when setting up your surgery.

You should visit a doctor if you notice any marks or areas of your skin that are out of the ordinary or changing. Based on the doctor's findings and diagnosis, electrosurgery may be provided as a treatment option. You can expect minor, manageable pain and discomfort after electrosurgery. It can take 3-6 weeks to recover after, depending on the procedure and device used. You should keep the treated area clean with ample amounts of petroleum jelly.

References

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