

# OCULAR SURGERY NEWS<sup>®</sup>

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## For the treatment of trichiasis, radiosurgery appears to be a quick and effective method

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Trichiasis is defined as normal eyelashes that have a normal location in the anterior lamella, but are misdirected and rub against the cornea and conjunctiva. Although trichiasis may be present at birth, it is much more commonly an acquired condition. Trichiasis is often the result of chronic blepharitis, trachoma, cicatricial pemphigoid and Stevens-Johnson syndrome. Trauma resulting from vertical eyelid lacerations or alkaline burns also can induce misdirected lashes.

Trichiasis should be distinguished from distichiasis, which implies an accessory row of abnormal lashes

Patients with distichiasis and trichiasis present with similar symptoms of watery, red and irritated eyes. The discomfort is caused by the offending lashes rubbing on the cornea and conjunctiva, resulting in corneal irritation and abrasion. In more severe cases, corneal damage may progress to ulceration and perforation.

The treatment of distichiasis and trichiasis is similar and is based on the extent of lid involvement. If the affected area is limited to a few lashes, simple periodic epilation or electrolysis may suffice. More extensive involvement limited to a localized area of the lid may be treated by focal cryotherapy application. Care must be taken with darkly pigmented patients due to the risk of skin depigmentation following cryotherapy. Diffuse lid involvement may require more extensive cryotherapy treatment.

### Case report

The authors discuss a case of trichiasis in trachoma treated by radiosurgery. The patient was a 67-year-old female who contracted trachoma at the age of 2. At the first visit to the Eye Center (San Giuseppe Hospital, Empoli, Italy), she was found to have vascularized corneal pannus, nuclear cataract, upper lid entropion and trichiasis in both eyes.

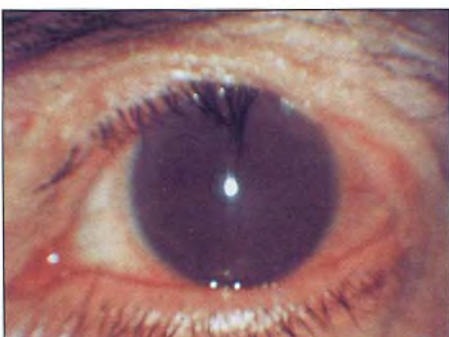
**“The treatment of distichiasis and trichiasis is similar and is based on the extent of lid involvement.”**

— Maurizio Santella, MD

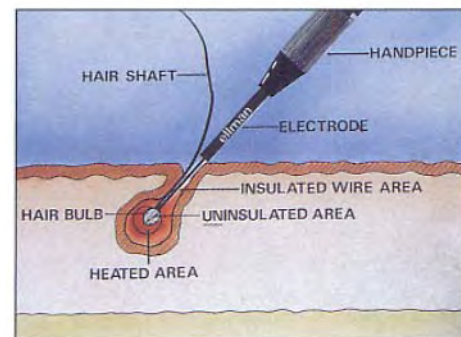
emanating from the meibomian gland orifices. Distichiasis is commonly a congenital disorder, with autosomal dominant inheritance and variable expressivity.



Treatment of trichiasis under slit lamp control.



Eye before (left) and after (right) penetrating keratoplasty.



Penetration of electrode inside the follicle.



Eyelid rim after partial removal of eyelashes (before keratoplasty).



Trichiasis was treated, after local anesthesia, with a radiosurgical unit, the Surgitron EMC (Ellman International Inc., Oceanside, NY), under slit lamp control. Local anesthesia was performed using Xylocaine 0.50% (lidocaine HCl, Astra) with adrenaline 1:200,000 and hyalase. The anesthetic was injected along the upper eyelid margin using a 30-gauge needle. After 10 minutes, the epilation was initiated with the Ellman radiosurgical unit, which transforms the electric current in an ultra high frequency radio wave in the 3.8 MHz portion of the electromagnetic spectrum. Special electrodes

underwent 2 weeks of penetrating keratoplasty and cataract extraction with an IOL implant in both eyes. At the end of all of the procedures, the best corrected visual acuity was 20/30 in the right eye and 20/25 in the left eye, from 20/400 and 20/200 respectively.

### Quick and effective method

Radiosurgery appears to be a quick and effective method for the treatment of trichiasis with the advantages of being highly effective, and of causing virtually no lateral damage to the eyelid margin. In addition, the electrode tip is self sterilizing, the machine is easily transportable and is relatively inexpensive compared with other treatment options. The only relative contraindication in the employment of radiosurgery is with respect to those



Trichiasis was treated, after local anesthesia, with a radiosurgical unit, the Surgitron EMC (Ellman International Inc; Oceanside, NY) [right] under slit lamp control.

Ellman insulated needle electrodes [left] were used for this particular procedure: they were 0.007-inch diameter insulated needles. The entire length of these needles was covered by an insulating material, leaving only the distal 1 mm exposed. The purpose of the insulation is to protect the overlying cells from the coagulating effects of the radio signal.



were used for this particular procedure: they were 0.007-inch diameter insulated needles. The entire length of these needles was covered by an insulating material, leaving only the distal 1 mm exposed. The purpose of the insulation is to protect the overlying cells from the coagulating effects of the radio signal. The unit setting was on “partially rectified” waveform and the power was set to 1.5, increasing up to 2.5 if necessary. The energy produced by the radiosurgical unit destroyed the follicles through coagulation, producing little lateral heat and minor eyelid margin damage. During the first step of the procedure, performed under slit lamp control, the electrode penetrates the skin and reaches the follicle. The second step consists of activating the unit for 1 to 1.5 seconds, resulting in the destruction of the follicle through coagulation, and therefore preventing a regrowth. The eyelashes generally fall off when removing the electrode, or are removed easily with forceps.

About 20% of the treated eyelashes recurred, but were completely resolved with a second treatment. After the treatment, the patient was topically treated with tobramycin. After the resolution of trichiasis, the patient

patients that carry an unshielded cardiac pacemaker.

The capability afforded by radiosurgery allowed her to undergo epilation comfortably while seated on the chair of the ophthalmic office and has undoubtedly contributed in reducing her emotional stress. ■

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