Study evaluates pressure device worn on the ear at night as treatment for scar tissue

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A study of seven patients examined use of a pressure device worn overnight to supplement other therapy for auricular keloids (scar tissue buildup of the ear), as reported in an article published Online First today by *Archives of Facial Plastic Surgery*.

Keloids are a type of scar tissue that develops after skin trauma in people with a genetic predisposition, according to background information in the article. The tissue extends beyond the original wound's boundaries and encroaches upon healthy skin, sometimes causing pain, itch, functional impairment, restricted movement, possible uncontrolled growth, cosmetic nuisance and adverse psychological effects. Therapies may include wound dressings, compression, steroid injections, surgery, radiation, interferon and medicated cream. The authors explain that often treatments are used together to reduce the risk of recurrence. "Treatment of auricular keloids is a unique challenge owing to the complex anatomy of the auricle [ear], from a cartilaginous [connective tissue] skeleton underneath a delicate layer of skin to a fat pad enveloped in thicker skin that forms the earlobe," the authors explain. Because auricular keloids may invade the cartilage and make surgical removal of the scar tissue difficult, treatment with steroids is frequently used. The authors examined use of a new pressure device as potential treatment for this condition.

Gregor M. Bran, M.D., from the University Hospital of Mannheim, Germany, and colleagues studied the auricular pressure device in seven patients being treated for auricular keloids between December 2007 and

March 2009. Four were male and the mean (average) age was 22.6 years. Patients underwent surgical removal of the keloids and injection of corticosteroids. Then they were instructed to wear the pressure device overnight at least five nights per week until the scar level matched the level of the healthy skin surrounding it or after two consecutive adjustments in the device failed to produce improvement. The device, custom-designed for each patient, was made of acrylate (a polymer) in two portions which were held in place by magnets along the rim of the ear.

Patients treated with the device reported no problems wearing it for the prescribed amount of time, and none interrupted or stopped the treatment. After a mean follow-up of 24 months, keloid recurrence was not observed in any patient. All of those treated reported satisfaction with the results and no itch, pain or abnormal sensations.

"Within this study we demonstrated the safety and efficacy of a combination of surgical excision and steroid injection with a newly designed, custom-fitted device for optimized pressure therapy of auricular keloids," the authors write. They add that while the use of pressure devices in the treatment of keloids of the ear is not new, the device included in this study more adequately meets the requirements of an ideal auricular pressure device. Larger, center-based trials with long-term follow-up would enhance understanding of the role the device could play in the improvement of scar management, the authors conclude.

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