

Collagen injections in otorhinolaryngology

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Key words: injectable collagen therapy, collagen type I, regeneration

Collagen is a natural material used in many areas of medicine. New applications of collagen in various medical specialties are more and more common. Use of collagen in otorhinolaryngology is a common practice in some indications, in others is still a matter of experiments.

Collagen is used in otorhinolaryngology for aesthetic effects. Patients after head and neck operations, mainly for oncological reasons (laryngectomy, neck lymphadenectomy), get collagen for scar smoothing and other corrective procedures. Trauma related scars (accidents, burns, radiotherapy) can be corrected with collagen. Skin defects of the nose after tumor excisions, like basal cell carcinoma, can be filled with collagen, to improve the aesthetic effect and patient's quality of life. Similarly, collagen may be used to fill in nasal septum defects, mainly after trauma or overuse of decongestive nasal drops.

Otolaryngologists and dental surgeons use collagen to fill tissue deficits and lift maxillary sinus bottom in cases of alveolar perforations penetrating maxillary sinuses. The procedure is very effective in closing the gaps and limiting the inflammation process, leading to faster recovery.

In patients suffering from dysphonia due to vocal folds damages (vocal abuse, radiotherapy, chronic inflammations, post intubation trauma) collagen is used to fill tissue defects. The volume of the tissue increases which improves phonation and leads to better voice quality.

Some experimental collagen applications are still subjects of research. Collagen used to build a scaffolding for regenerating a respiratory ciliary epithelium, sealing the upper wall of tympanic cavity or treatment of trigeminal or facial neuralgia, are the examples.

References

1. De Santis MM, Wagner DE. Collagen IV: a critical new starting point for engineering upper airways. *Eur Respir J* 2020; 55: 2001130, DOI: 10.1183/13993003.01130-2020.
2. Lim MH, Jeun JH, Kim DH, et al. Evaluation of Collagen Gel-Associated Human Nasal Septum-Derived Chondrocytes As a Clinically Applicable Injectable Therapeutic Agent for Cartilage Repair. *Tissue Eng Regen Med* 2020; 17: 387–399, DOI: 10.1007/s13770-020-00261-9.
3. Ohba S, Shido R, Asahina I. Application of hydroxyapatite/collagen composite material for maxillary sinus floor augmentation. *J Oral Sci* 2021; 63: 295-297, DOI: 10.2334/josnurd.21-0163.