

Efficiency and Durability of Hyaluronic Acid with Different Viscosity as an Injectable Material for Vocal Fold Augmentation

Yoo Seob Shin¹, Jae Won Choi^{1,2}, Ju-Kyeong Park^{1,2}, Chul-Ho Kim^{1,2}

¹Department of Otolaryngology, ²Molecular Science & Technology, Ajou University, Suwon, Korea

Injection laryngoplasty is an option for treatment of glottic insufficiency following vocal fold paralysis, vocal fold atrophy or scarring. We intended to evaluate the durability and efficiency of hyaluronic acid (HA) of different particle size for vocal fold augmentation. Three kinds of HA, restylene[®], low viscosity and bead type HA was injected into the right vocal folds (VF) of three groups of four rabbits. Six and ten weeks postoperatively, the site was evaluated endoscopically, histologically, radiologically, and functionally. None of the twelve rabbits showed signs of respiratory distress. Comput-

ed tomography images and endoscopic evaluation revealed sufficient augmented volume of the injected VF in all treated groups. Histologic data showed bead type HA did not migrate from their original insertion site. Videokymography analysis showed more favorable vibrations of bead type HA injected VF mucosa, compared to the other treatment group. The results of the present investigation suggest that modification of HA could extend efficiency and durability of injection laryngoplasty of VF augmentation.