

Intracordal Cartilage Injection For Vocal Fold Augmentation : Results for 2 Years

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Objectives : Vocal fold augmentation using injectable material is an easy and simple operation. This study is to evaluate the histology of minced and injected autologous auricular cartilage and fat graft in the augmentation of unilateral vocal fold paralysis using a canine model for two years.

Study Design : A prospective study with the contralateral side of the larynx used as the control

Methods : Twelve dogs were operated. At first, a piece of auricular cartilage was harvested from ear and minced into tiny chips with a scalpel and scissors. And also, a piece of fat tissue was harvested from inguinal area and minced into tiny chips with a scalpel and scissors. The minced cartilage and fat-paste (0.2ml) was injected using a pressure syringe into the paralyzed thyroarytenoid muscle under direct laryngoscopy. Two animals were sacrificed at 3 days, three at 3 weeks, two at 3 months, one at 6 months, one at 12 months, three at 24 months. Each dog underwent laryngectomy and serial coronal sections of paraffin blocks from the posterior part of the vocal fold were made.

Result : There was no significant complication perioperatively and during follow-up. There was acute inflammatory findings in the graft at 3 days and 3 weeks. Only a very small proportion of the injected cartilage was absorbed due to the degenerative change and the overall volume was preserved even when the cells died out. The injected cartilage remained in the larynx until 24 months.

Conclusion : The autologous cartilage implant using auricular cartilage was the ideal vocal cord augmentative material for the treatment of glottic incompetence.

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