

CAHA Redistribution in the Human Vocal Fold after Injection laryngoplasty: Retrospective CT Observation

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Background and Purpose: Calcium Hydroxylapatite is the only FDA approved vocal fold injectable and used for augmentation laryngoplasty for various purposes. Calcium component of this injectable enables us to observe the material in the x-ray based imaging tests such as CT scan. This study is aimed to observe the redistribution pattern of CAHA in the human vocal fold after injection laryngoplasty. Three major observation were performed: 1) calcium absorption pattern, 2) glottic redistribution pattern and 3) extraglottic migration, **Method:** A retrospective analysis of 851 injections for 671 patients diagnosed to have glottal insufficiency and augmented with CAHA at SNUH from January 2005 through December 2013. All injection laryngoplasties were performed by one physician (T-K.K.) via transcutaneous approach through the cricothyroid membrane in the office without hospitalization.

Among 671 patients, 44 patients who had taken CT including laryngeal cut, were included for this study. **Results:** Immediate after vocal fold injection the CAHA remains at the original position and starts resorption process over time except redistribution to the anterior redistribution in the paraglottic space. The resorption pattern shows centripetal direction as we expected leaving injection epicenter at the end stage of resorption, which suggests the material does not seem to migrate once the initial redistribution process ends in the vocal fold. **Conclusions:** CAHA can redistributed in the vocal fold early after injection probably due to muscle and aerodynamic effect, but does not seem to migrate off the glottis late after the injection

Keyword: injection laryngoplasty; redistribution; CAHA