

Cell proliferation in the transplanted autologous fascia Into the human vocal fold

Koichi Tsunoda, M.D., Kimitaka Kaga, M.D.

Department of Artificial Organs, National Institute of Sensory Organs, Tokyo, Japan

Kenji Kondo, M.D.

Department of Otolaryngology & Head and Neck Surgery , Graduate School of Medicine,
University of Tokyo, Tokyo, Japan

Correspondence to :Koichi Tsunoda. E-mail: tsunodakoichi@kankakuki.go.jp

ABSTRACTS

HYPOTHESIS : Treatment of sulcus vocalis (SV), a pathological condition of the vocal fold in which the normal lamina propria is lost and replaced with scar tissue. In SV, the resulting incomplete glottal closure during phonation leads to the presenting symptoms of breathy hoarseness. We have developed a new surgical procedure called autologous transplantation of fascia into the vocal folds (ATFV) for SV cases.¹ We speculate that ATFV may lead to the regeneration of the lamina propria, perhaps through a mechanism that is similar to the process that occurs during stem cell transplantation in other organs.²

METHODS : We had an opportunity to remove a specimen for pathological study, one week after the autologous transplantation into the vocal fold (ATFV) in successful case. For comparison, fascia samples obtained before the ATFV in the same case as well as from other cases and ear surgery cases were included (total : 13cases).We investigated the histological changes and cell proliferation activity in human temporal fascia before and after ATFV.

RESULTS : Before the ATFV, immunohistological staining with the anti Ki-67 antibody showed no obvious Ki-67-positive cells in this fascia specimen. Fascia specimens obtained in other ATFV cases and from the ear surgery cases also showed no nuclear immunostaining, with the exception of a very slight staining pattern in a few capillary epithelial cells. In contrast, the fascia specimen after the transplantation showed many Ki-67-positive cells were observed.

CONCLUSIONS We speculated that some of the proliferating cells in the transplanted fascia may be from a stem cell population.

REFERENCES

1. Tsunoda K, Takanosawa M, Niimi S. Autologous transplantation of fascia into the vocal fold: a new phonosurgical technique for glottal incompetence. *Laryngoscope*.1999; 109: 504-508.
2. Tsunoda K, Niimi S, Baer T. Autologous transplantation of fascia into the vocal fold Long-term results of a new phonosurgical technique for glottal incompetence. *Laryngoscope*. 2001; 111: 453-7.