INTRODUCTION

We have an optional procedure of videolaryngoscopy for the endolaryngeal microsurgery, which has some advantages, but has a definitive demerit (two-dimensional 2D images) as compared to conventional microsurgery.

In order to overcome the drawback of 2D videolaryngoscopy, we have developed a newly devised 3D videolaryngoscope, and we evaluated the usefulness of this device by comparing between our 3D videolaryngoscope and the conventional binocular microscope system.

METHODS AND MATERIALS

A 3D high vision camera of 5mm in diameter (Shinkohkohki, Japan) was attached to a usual 2D laryngoscope. Real time images of the laryngeal surgical field was monitored by a dome-shaped 3D monitor (Panasonic Health Care). We performed endolaryngeal microsurgery on some patients with voice disorders, and compared usefulness between 3D and conventional binocular system.

RESULTS

Using 3D videolaryngoscopy, we observed some advantages like easier and better manipulation in grasping and cutting the lesion, and smaller operative laryngeal mucosa because of its stereoscopic visual effect as compared to 2D scope. In comparison to the conventional binocular microscope, 3D videolaryngoscope offered equivalent stereoscopic imaging and an advantage in nearer positioning to the patient, bringing about accurate surgical operation.

CONCLUSIONS

We found that 3D imaging offers novel advantages in the performance of endolaryngeal microsurgical skills to every surgeon. In the near future, the conventional binocular microscope can be replaced by 3D videolaryngoscopy.

REFERENCES