Clinopathological analyses of 50 supracricoid laryngectomized specimens: Evidence base supporting minimal margins

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ABSTRACT

Supracricoid laryngectomy with Cricothyroidopidigostopigystomy (SCL-CHEP) is a laryngeal preservation surgery indicated for early and selected advanced glottic cancers. In SCL-CHEP, thyroid cartilage is removed along with its intrinsic tissues and the intrinsic muscles to preserve the larynx. However, due to the limited anatomy of the larynx, it is inevitable that some surgical margins may be relatively close. The clinical significance of close margins is still unclear.

INTRODUCTION

Details of the clinocopathological findings were tabulated in Table 1. There were 48 male and 2 female patients in a mean age of 63 years old. pT1, pT2, pT3 and pT4 were 8, 18, 30%, 21 (43%) respectively. pT1 was the shortest with a micro measurement of 4 mm to the resected end. Paraglottic space, pyriform sinus, and arytenoid cartilage are the key anatomical structures to be managed at this site. By approaching the larynx from behind, SCL-CHEP was capable of removing the paraglottic spaces in an average (mm) of 9 mm to the resected end. This was the only site at which the inferior margin was the longest among the four ends with a micro measurement of 9 mm to the resected end. Tumor invaded the contralateral glottis via anterior commissure in a relatively high percentage (50%) of patients. This fact may defend this choice against the claim that SCL-CHEP unnecessarily removes the uninvolved glottal structure.

METHODS AND MATERIALS

Between 1997 and 2008, 50 patients with glottic cancers (squamous cell carcinoma) underwent SCL-CHEP at our institute.Macro margin, the distance between tumor edge and resected end, was measured at the anterior, posterior, superior, and inferior ends using gross surgical specimens. The surgical potential of SCL-CHEP was confirmed to be able to cope with tumor extension with a few millimeter margins at the anterior, posterior, and superior ends. Accurate assessment and management at the inferior margin is the key to stable local control.

RESULTS

On comparison of clinical and pathological stagings, accurate diagnosis, overstimation and underestimation were observed in 70%, 16%, and 14% of the patients. Overestimation occurred in 33% of pT1, 16% of pT2, and 14% of pT3 and pT4 cases. Inaccurate staging was most prominent in pT3 and pT4 cases. The inferior margin was underestimated in the 14% of the pT3 and 50% of pT4 cases. However, close surgical margins are often inevitable. Based on clinopathological analyses of supracricoid laryngectomized specimens, we evaluated the evidence base supporting minimal margins.

TABLE 1

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<th>Objectives</th>
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<td>Supracricoid laryngectomy is a reliable laryngeal preservation surgery for early and selected advanced glottic cancers. In SCL-CHEP, thyroid cartilage is removed along with its intrinsic tissues and the intrinsic muscles to preserve the larynx. However, due to the limited anatomy of the larynx, it is inevitable that some surgical margins may be relatively close. The clinical significance of close margins is still unclear.</td>
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CONCLUSIONS

The surgical potential of SCL-CHEP was confirmed to be able to cope with tumor extension with a few millimeter margins at the anterior, posterior, and superior ends. The inferior margin was the only edge at which some overestimation occurred. The inferior margin was underestimated in 33% of the pT3 and 50% of pT4 cases. This fact may defend this choice against the claim that SCL-CHEP unnecessarily removes the uninvolved glottal structure.