DISCUSSION

In this investigation, we compared hyoid displacement among three groups: one group of controls with normal oral and pharyngeal swallowing function and two groups of patients with head and neck cancer (one group of patients complaining of dysphagia with aspiration or penetration defined as whether or not contrast entered the supraglottic space; one group of patients complaining of dysphagia without aspiration or penetration). No significant difference was found in hyoid displacement between 5 mL and 10 mL boluses. There was a statistically significant difference in hyoid movement between the controls and patients with dysphagia without aspiration or penetration (p<0.05). There was also a statistically significant difference in hyoid movement between patients with dysphagia and aspiration or penetration and patients with dysphagia without aspiration or penetration (p<0.05).

Hyoid movement is clearly a critical component of swallowing. This study has clearly shown that hyoid bone displacement is significantly reduced in patients with head and neck cancer compared with dysphagia with evidence of aspiration or penetration. Therefore, hyoid movement can be used as a reliable tool for predicting aspiration in head and neck cancer patients and for guiding clinicians in providing improved treatment for their patients.

CONCLUSIONS

Based on the results obtained from this study, hyoid movement in post-treatment head and neck cancer patients can accurately predict the risk of aspiration and may serve as a parameter for treatment goals and implementing prophylactic measures in the treatment.

REFERENCES


Figure 1. Hyoid position at hold (left) and maximal displacement (right).

ABSTRACT

Objective: 1) Quantify the differences in hyoid displacement among elderly patients with and without dysphagia. 2) Determine whether reduced hyoid displacement is a significant predictor of aspiration in patients with dysphagia. Method: Data on hyoid displacement and presence of aspiration was collected from patients who underwent videofluoroscopic swallow studies (VFSS) at the USC University Hospital from the past 6 years. Patient studies were selected with 5 mL (n=10) and 10 mL (n=10) total volume with age (≥60 yrs), and self-reported dysphagia symptoms at the time of the study. Results: Subjects: Videofluoroscopic examination results of 19 male patients were analyzed. The patients were divided into three groups: Group 1 (n=6) consisted of individuals determined to have normal oral and pharyngeal swallowing function; Group 2 (n=6) consisted of post-treatment head and neck cancer patients determined to have no aspiration or penetration; Group 3 (n=7) consisted of post-treatment head and neck cancer patients determined to have aspiration or penetration. Hyoid movement was measured on lateral views for all three groups. Hyoid movement: Table 1 lists the range and mean hyoid displacement using 5 mL and 10 mL boluses for each group. There was a statistically significant difference in hyoid displacement between the controls and patients with dysphagia without aspiration or penetration (p<0.05). There was also a statistically significant difference in hyoid displacement between patients with aspiration or penetration and patients with dysphagia without aspiration or penetration (p<0.05). Table 1. Hyoid displacement range of three groups under 2 bolus conditions. Group 1: patients with normal oral and pharyngeal swallow; Group 2: patients with dysphagia without aspiration or penetration; Group 3: patients with dysphagia with aspiration or penetration. RESULTS

In this investigation, we compared hyoid displacement among three groups: one group of controls with normal oral and pharyngeal swallowing function and two groups of patients with head and neck cancer (one group of patients complaining of dysphagia with aspiration or penetration defined as whether or not contrast entered the supraglottic space; one group of patients complaining of dysphagia without aspiration or penetration). No significant difference was found in hyoid displacement between 5 mL and 10 mL boluses. There was a statistically significant difference in hyoid movement between the controls and patients with dysphagia without aspiration or penetration (p<0.05). There was also a statistically significant difference in hyoid movement between patients with dysphagia and aspiration or penetration and patients with dysphagia without aspiration or penetration (p<0.05). Hyoid movement is clearly a critical component of swallowing. This study has clearly shown that hyoid bone displacement is significantly reduced in patients with head and neck cancer compared with dysphagia with evidence of aspiration or penetration. Therefore, hyoid movement can be used as a reliable tool for predicting aspiration in head and neck cancer patients and for guiding clinicians in providing improved treatment for their patients.

CONCLUSIONS

Based on the results obtained from this study, hyoid movement in post-treatment head and neck cancer patients can accurately predict the risk of aspiration and may serve as a parameter for treatment goals and implementing prophylactic measures in the treatment.

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