Predictors of Tracheobronchial Invasion of Suprabifurcal Oesophageal Cancer

Abstract:

Background: Factors possibly predicting airway invasion of oesophageal cancer in the absence of frank oesophagotracheal fistulas have not been studied. Objectives: To identify possible predictors of airway invasion by oesophageal cancer that are readily accessible in the preoperative setting. Methods: We prospectively investigated 148 patients with newly diagnosed oesophageal cancer located at or above the level of the tracheal bifurcation and without any evidence of oesophago-respiratory fistulas or distant metastases. Demographic variables, respiratory parameters, results of bronchoscopy and other staging procedures (oesophagoscopy, swallow oesophagography, endosonography, CT and histology) and findings at surgery were compared between the patients with (n = 30) and without (n = 118) proven airway invasion and entered into a stepwise logistic regression model to evaluate their independent predictive roles. Results: Univariate analysis indicated that the incidence of airway invasion increased with the presence of suspect CT findings, the presence of respiratory symptoms, tumour length, T stage on endoscopic ultrasonography, and histopathologic grading of the primary cancer. A multivariate logistic regression model indicated that suspect CT findings (odds ratio, 4.4; 95% confidence interval 1.7–11.1, p = 0.002) and
maximal tumour length >8 cm (odds ratio, 3.7; 95% confidence interval 1.4–9.6, p = 0.007) were associated independently with airway invasion. The accuracy of predicting airway invasion was 82.5% with both variables combined. Conclusions: The high incidence of airway involvement by oesophageal cancer and the difficulty to predict it accurately with clinical data or other staging procedures justifies the routine use of bronchoscopy in all patients with the tumour located at or above the level of the tracheal bifurcation. A particular effort to objectively prove or exclude airway invasion should be made in patients with tumours longer than 8 cm and/or with CT findings suggesting airway invasion.

Stichworte: Bronchoscopy; Oesophageal neoplasms; Oesophagectomy; Tumor staging; Trachea

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