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Background

Pulmonary hemorrhage (PH) is a serious adverse event for patients treated with bevacizumab (BV). Previous studies have identified PH risk factors as tumor cavitation, location, and endobronchial invasion confirmed by computed tomography (CT). However, for endobronchial invasion, we believe confirmation should be judged by bronchoscopy. The aim of this study is to demonstrate the relevance of bronchoscopic findings for patients with PH and treated with BV.

Methods

Retrospective analysis of non-small cell lung cancer was performed on patients treated with combination therapy including BV, as a first line chemotherapy at St. Marianna University Hospital between April 2010 and November 2013. Clinical data were retrieved from medical records and criteria from previous studies were used to identify tumor locations. Bronchoscopic findings were classified as follows; epithelial, subepithelial, extraluminal, and normal.

Results

Of the thirty-two patients analyzed in this study, 27 patients underwent bronchoscopy before BV treatment. The median age was 62 years (range 38-78), and adenocarcinoma was confirmed in all patients histologically. PH was present in 12.5% patients (4/32, all Grade1), and the location of tumors (central vs. peripheral), was not a significant risk factor for PH. Bronchoscopic classification of patients for epithelial, subepithelial, extraluminal, normal were; 0, 20, 0, 7, respectively. Dilatation findings of subepithelial vessels were seen in 3 cases (3/27). There was no significant difference for PH in bronchoscopic classifications (subepithelial vs. normal); however, patients with dilatation findings of subepithelial vessels were at significantly higher risk for PH ($p<0.01$).

Conclusion

It might be possible that patients were safely treated with BV in spite of central lesions confirmed by CT. However, dilatation finding of subepithelial vessels should be observed carefully under bronchoscopy, since these findings may predict PH risk factors for BV.