



# Correlation and interventional embolization therapy of posterior intercostal arteries-induced hemoptysis

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Genet. Mol. Res. 13 (2): 4252-4259 (2014)

Received May 13, 2013

Accepted September 4, 2013

Published June 9, 2014

DOI <http://dx.doi.org/10.4238/2014.June.9.10>

**ABSTRACT.** The incidence of posterior intercostal arteries-induced hemoptysis, its correlation with primary diseases, and the value of interventional embolization therapy were investigated. Clinical data, multislice spiral computed tomography (MSCT), digital subtraction angiography (DSA), and other imaging data of 143 cases of hemoptysis were retrospectively analyzed. After the offending vessels were subjected to interventional embolization therapy, patients were followed-up for observations of clinical efficacies and complications. Thirty-one patients (21.7%) showed 65 branches of posterior intercostal arteries as the non-bronchial systemic arteries involved in hemoptysis; pleural thickening was evident in 25 (80.6%) cases. Posterior intercostal arteries-induced hemoptysis was observed in 16 of the 27 (59.3%) patients with pulmonary tuberculosis, and in 9 of the 10 (90.0%) patients with pulmonary tuberculosis and pulmonary damage. Posterior intercostal

arteries-induced hemoptysis was correlated to pleural thickening ( $P < 0.05$ ), which differed significantly among different underlying diseases ( $P < 0.05$ ). Twenty-eight cases of 58 branches of posterior intercostal arteries were found to be involved in hemoptysis by preoperative chest CT angiogram (CTA); the intraoperative matching rates were 90.3% (28/31) and 89.2% (58/65), respectively. Thirty-one patients received transcatheter arterial embolization (TAE), of which 29 (93.5%) showed immediate hemostasis; 1 case had surgical treatment for ineffectuality, and 2 cases showed recurrence without serious complications. The posterior intercostal arteries were commonly involved in hemoptysis, and were closely associated with pleural thickening and pulmonary tuberculosis, especially when accompanied by pulmonary damage. Complete TAE could improve the treatment effect of hemoptysis and preoperative chest CTA was helpful for interventional embolization therapy.

**Key words:** Hemoptysis; Embolism; Therapeutic; Pleural thickening; Posterior intercostal arteries