P1828

Aortic calcification detected by computed tomography and aortic vulnerable plaques: aortic angioscopy study

K. Kojima, Y. Ebuchi, S. Migita, T. Morikawa, T. Mineki, T. Tamaki, N. Akutsu, N. Murata, D. Kitano, M. Sudo, D. Fukamachi, T. Takayama, T. Hiro, A. Hirayama, Y. Okumura

Nihon University School of Medicine, Tokyo, Japan

Background: Aortic calcification is associated with atherosclerotic risk factors and an increased risk of death and cardiovascular disease. However, the relationships aortic calcification and aortic plaque instability are not yet elucidated. Recently, some reports showed non-obstructive aortic angioscopy seemed to visualize atherosclerotic changes of aortic wall more clearly compared with computed tomography (CT). The purpose of this study was to evaluate whether aortic calcification is associated with aortic vulnerable plaques in patients with cardiovascular disease.

Methods: We investigated 60 consecutive patients with confirmed or suspected coronary artery disease who underwent both aortic angioscopy and CT. The AC volume (ACV) was measured using the volume-rendering method by extracting the area $>$130 HU within the whole aorta. ACV index (ACVI) was defined as ACV divided by the body surface area. We evaluated the number of ruptured plaque (RP), ulceration and fissure by aortic angioscopy in the whole aorta. We excluded 4 hemodialysis patients. All patients were divided into the median value of ACVI.

Results: The mean age of patients was 68±10. The median of ACVI was 10.7 ml/m^2 [3.9–22.7]. High ACVI patients had significantly greater number of RP, ulceration and atheromatous plaques detected by aortic angioscopy compared with those of low ACVI (2.2±2.7 vs 0.8±1.1, p=0.033, 1.6±1.2 vs 0.9±1.0, p=0.041, 4.0±3.1 vs 1.9±1.8, p=0.009, respectively). Furthermore, the patients without aortic calcification did not have RP at all. In a multivariate model, the number of the atheromatous plaques was independently associated with high ACVI (odds ratio 1.57, 95% confidence interval 1.07–2.69, p=0.018)

Conclusions: Aortic calcification detected by CT was related to aortic vulnerable plaques in patients with cardiovascular disease.