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PREDICTING CARDIAC RISK BY EVALUATING CORONARY ATHEROSCLEROSIS WITH CTA FOR NON-CARDIAC SURGERY

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Objectives While the coronary CT (CTA) has been used to judge coronary atherosclerosis, its value in predicting the cardiac risk before non-cardiac surgery remains controversial. The objective of the present study was to explore the role of CTA for predicting cardiac events in patients who were subject to undergo non-cardiac surgery.

Methods Eighty-nine patients (male 56, mean age 65.1) with suspected coronary heart disease (CHD) were scheduled to receive non-cardiac surgery. The luminal stenosis and calcification score were evaluated. Operative sites included chests (n=29), abdomens and pelvis (n=26), large vessels (n=3), bones and joints (n=19) and other regions (n=12).

Results In 89 patients, 75 patients (84.27%) were diagnosed as with atherosclerosis while 10 patients (11.24%) were without; 2 patients had coronary artery bypass surgery and 2 patients had implanted stents. According to the results of CTA, 12 operations (13.48%) were cancelled, and 8 (8.98%) were postponed after interventions. In practice, severe stenosis of coronary lumen had significant impact on surgery planning ($p=0.004$) while calcification score did not. In patients who underwent operation as scheduled, 1 had atrial fibrillation after operation.

Conclusions For patients with suspected coronary atherosclerosis, severity of coronary stenosis is a major factor that would determine whether the subject was eligible for non-cardiac surgery or not. From the view of reducing fatal cardiac events during peri-operative period, CTA may provide parameters that can be used along with other risk evaluations. In this regard, further and larger-scale investigation is warranted.