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A case of resuscitated sudden cardiac death due to coronary artery spasm

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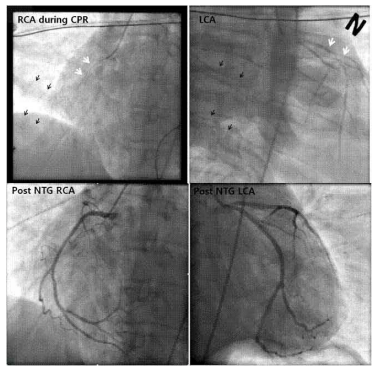
A 50 year old woman was admitted to the hospital because of unexplained shock associated with resting chest pain. One day before admission, the patient was hospitalized to another hospital for the knee arthroscopic surgery. The day after the procedure, she had nonexertional squeezing chest pain in the morning. Sublingual nitroglycerin relieved her chest pain. She, however, had a shock with blood pressure 60/40 mmHg. She had been admitted for recurrent morning chest pain 5 years ago, at which time coronary angiography revealed no specific lesion. Electrocardiography (ECG) upon admission revealed no ischemic change. Computed Tomography (CT) coronary angiogram showed normal coronary arteries and aortic dissection or pulmonary embolism was excluded by chest CT. On the second day of admission, she complained severe resting angina and went into a cardiopulmonary arrest. Advanced cardiopulmonary life support (ACLS) failed to restore the spontaneous circulation. Coronary spasm was suspected as the cause of the arrest. Coronary angiography was performed immediately while ACLS was continued. Emergent coronary angiogram showed diffuse severe coronary spasm involving the left main, left anterior descending, left circumflex and right coronary arteries(Figure 1;White arrow:Coronay a. spasm, black arrow: Hands of medical staff resuscitating CPR). After the intracoronary administration of 100ug of nitroglycerine into each right and left coronary arteries, spasm was resolved(Figure 1) The patient was finally resuscitated. We present a case of sudden cardiac death due to coronary artery spasm who was resuscitated by intracoronary infusion of nitroglycerine. The prognosis of coronary artery spasm is usually benign but might be associated with sudden cardiac death. So doctor should pay attention on coronary artery spasm and consider it as a possible cause of sudden cardiac death especially for Asian subjects without underlying heart disease. This report support our claim which is intracoronary nitroglycerine infusion has a value in the resuscitation of refractory sudden cardiac death due to CAS



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Comparison of whole blood viscosity between during hospital course and follow up

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Background/Aims: Although shear stress is determined by the product of whole blood viscosity (WBV) and shear rate, there have been few studies for the direct measurement of WBV. The aim of the study was to compare WBV between during hospital course and follow up in acute coronary syndrome (ACS) and non-ACS patients. **Methods:** Consecutive 38 patients who underwent diagnostic coronary angiography were enrolled (62.2±9.2, 22 males) and were divided to two groups [group I=non-ACS (n=16), group II=unstable angina (n=13) and acute myocardial infarction patients (n=9)]. Three blood samples were obtained from each patient at femoral artery before diagnostic coronary angiography(at least 10-second after test injection of contrast medium) and at peripheral artery one month later after discharge. Diastolic WBV was measured at a shear rate of 1 s-1 by a scanning capillary viscometer (BVD-PRO1, Bio-Visco Inc., South Korea). **Results:** The diastolic WBVs between during hospital course and follow up in acute coronary syndrome (ACS) and non-ACS patients were not significantly different. (246.3±57.2 vs 250.0±32.0, *p*=0.867 and 296.3±68.3 vs 251.1±82.6, *p*=0.074) **Conclusions:** Comparing the diastolic viscositys after one month with those observed at the initial stage, no statistical variation was found. Such result is different from that which was observed in other studies, although other research has described similar findings. Further study are needed to clarify the present results.

Table 1. Diastolic whole blood viscosity comparison between during hospital course and follow up

	Peri-CAG	1 month later	*p-value*
Non-ACS(mP)	210.2±57.5 (246.3±57.2)	225.0±45.2 (250.0±32.0)	0.534 (0.867)
ACS (mP)	282.3±75.2 (296.3±68.3)	239.4±90.3 (251.1±82.6)	0.119 (0.074)