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Long-term follow-up of medically treated patients with spontaneous coronary artery dissection: a prospective, Swiss single-centre cohort study

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AIMS OF THE STUDY
Spontaneous coronary artery dissection (SCAD) is an increasingly diagnosed cause of acute myocardial infarction. However, there is still a limited number of larger cohorts with long-term follow-up. We report on the largest Swiss single-centre cohort to date, with follow-up of up to 22 years.

METHODS
We prospectively collected SCAD cases from June 1998 until December 2020. A strategy of systematic follow-up angiography was applied. Information on long-term follow-up was collected up to the end of 2020. Major cardiovascular events (MACE) were defined as all-cause death, non-fatal MI, and non-fatal cardiac arrest.

RESULTS
We identified 105 SCAD patients (mean age 53 ± 11 years, 98 female, 5 peripartum). Presentation was myocardial infarction in all patients. In 102 patients, there was one contiguous dissection. Three patients had two (n = 2) or three (n = 1) non-contiguous dissections. In the majority of patients (n = 97), the primary treatment approach was conservative (dual antiplatelet therapy for 12 months in 90% of patients, statins in 91%). Seven patients were treated with percutaneous coronary intervention (PCI) and one patient underwent bypass surgery. Elective follow-up angiograms were performed in 73 asymptomatic patients after a median follow-up of 6.0 months (interquartile range [IQR] 5.5-6.5). These showed healing of the dissection (n = 65) or a good result after PCI (n = 5) in 70 patients. Three patients had a persistent dissection but conservative treatment was continued. After a median follow-up of 7.5 years (IQR 3.6-12.5) (longest follow-up: 22.5 years) there were 15 MACE. Five MACE occurred within 30 days of the index event: death following catastrophic peripartum left main SCAD (n = 1), out-of-hospital cardiac arrest with successful resuscitation 16 days after SCAD (n = 1), ST-segment elevation myocardial infarction due to occlusion of the dissected artery 10 hours after the index angiogram with subsequent PCI (n = 1), SCAD of a second vessel 8 days

after the index SCAD (n = 1), and non-ST-segment elevation myocardial infarction with persistent, multisite SCAD 10 days after the index event (n = 1). There were 10 late MACE, including myocardial infarction and recurrent SCAD (different vessel/lesion) a median of 7.6 years (IQR 3.9-9.6) after the index event in eight patients and death with unclear cause in two patients.

CONCLUSION
This SCAD series highlights its highly variable clinical course during the acute phase and in the long term. Although most SCAD patients can be treated conservatively with subsequent healing of the dissection and good clinical outcome, there are also patients with dramatic acute presentation or MACE several years after the initial presentation.

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