Multiple Spiral Lumens in the Coronary Artery

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A 42-year-old woman presented with acute myocardial infarction. Follow-up CAG on day 12 following primary PCI for the left coronary artery showed multiple channels in the right coronary artery (Picture 1). Intravascular ultrasound (IVUS) showed serial spiral round lumens with entry and re-entry (Picture 1), indicating that coronary flow had entered the soft plaque area at the positive remodeling site, forming multiple spiral lumens. Therefore, the etiology of this unique form was thought to be as follows: 1) positive remodeling with rich plaque, 2) entry into the soft plaque area induced by intimal injury, 3) serial round cavities induced by coronary blood flow, 4) re-entry. This phenomenon might be a subtype of dissection that occurred in a plaque-rich coronary artery with positive remodeling. The quality and amount of plaque would be important factors in maintaining the round shape of both true and false lumens. This case demonstrates the first report of unique multiple channels in the coronary artery, suggesting a new complication of atherosclerosis.