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Contrast-induced nephropathy(CIN) is a serious complication associated with increased morbidity and mortality, particularly in patients with chronic renal failure after percutaneous coronary intervention(PCI). There is no doubt that minimizing the dose of contrast media reduces the risk of CIN. We succeeded in effective revascularization by PCI with the use of less than 10ml of contrast media in patient with chronic renal failure. We describe the various techniques used in PCI which were performed to minimize the dose of contrast media. A 75-year-old man with diabetic nephropathy (serum creatinine level:1.9mg/dl, and creatinine clearance:19ml/min) had severe anginal attacks(CCS:I-B-1), we performed diagnostic coronary angiography under biplane fluoroscopy with the use of 17ml of contrast media. The angiogram showed 99% stenosis of the distal right coronary artery(RCA) with severe calcification, and a long(90%) stenosis through the mid to distal part of left anterior descending branch(LAD), and chronic total occlusion of the distal of left circumflex branch(LCx). We successfully completed the rotablation and stenting. Throughout the procedure, the positioning of the balloon and stent was determined by referring to the guidewire placed in the side branch and previous angiogram, calcification. Instead of regular angiography, we performed IVUS repeatedly to confirm the results of each intervention. Because of these efforts to minimize the dose of contrast media, PCI was safely carried out using 10ml of contrast media for RCA lesion, and using 6ml for LAD lesion. As a result, we succeeded in preventing from the development of CIN.