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Computerized Tomography is an Effective Modality to Evaluate Iatrogenic Aortocoronary Dissection with Acute Myocardial Infarction

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Conflict of Interest

The authors have no financial conflicts of interest.

Unfortunately, right coronary artery (RCA) of a 55-year-old man with unstable angina was spirally dissected from ostium into mid-RCA during manipulation of a guiding catheter and extended to coronary sinus of aortic root (**Figure 1**). A guidewire could not be introduced into the true lumen. Intravascular ultrasonography-guided wiring could not be attempted due to emergent situation. After initiating medical therapy, chest pain and ST-segment elevation were resolved and hemodynamic status was stabilized. Computerized tomography (CT) performed on the third day showed extended dissection of aortic root was localized at sinus of Valsalva without propagation into ascending aorta (**Figure 2**).

The 7-day follow-up angiography showed collateral flow (Rentrop grade 2) to distal-RCA (**Figure 3**). Conservative management was maintained for aortic root dissection and delayed percutaneous coronary intervention (PCI) was planned for RCA dissected and totally occluded without surgery.

After 3 months, angiography showed no significant change of RCA dissection with slit-like true lumen (**Figure 4A**). PCI was strugglingly performed from distal-RCA to ostium with 4 stents (Resolute Onyx™) (**Figure 4B and C**). Then, effort angina was completely improved.

Figure 1. (A, B) Baseline coronary angiogram showed significant stenosis at the proximal left anterior descending artery and the mid RCA. (C) Coronary angiogram showed spiral dissection (arrow) of the RCA from ostium to mid portion with total occlusion. The dissection was extended to the right coronary sinus of the aortic root. RCA = right coronary artery.

Author Contributions

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Figure 2. Cardiac computerized tomogram. A flap formed by the right coronary artery dissection was identified at the ostium (arrow). Extended dissection flap of aortic root was localized at sinus of Valsalva without propagation into ascending aorta.

Figure 3. (A) Follow-up coronary angiogram on the seventh hospital day showed no interval change of the spiral dissection of RCA. However, localized dissection of sinus of Valsalva was decreased. (B) Percutaneous coronary intervention was performed at the proximal left anterior descending artery with a drug-eluting stent (arrow) and left coronary angiogram showed collateral flow (Rentrop grade 2) from the left coronary artery to the distal RCA (dotted arrow).

RCA = right coronary artery.

Figure 4. (A) After 3 months, follow-up angiography showed no significant change of the spiral dissection of RCA with slit-like true lumen (arrow). (B) Percutaneous coronary intervention was strugglingly performed from the distal portion (dotted arrow) to the ostium (arrow) of RCA with 4 drug-eluting stents. (C) Completion angiogram showed no visible dissecting flap and no residual stenosis at RCA with thrombolysis in myocardial infarction flow grade 3.

RCA = right coronary artery.

Iatrogenic dissection of coronary artery is an uncommon but life-threatening complication.¹⁾ When dissection extends to the aortic root and ascending aorta, it should be meticulously evaluated and managed as quickly as possible.²⁾³⁾ CT is a helpful and effective tool to evaluate

a range of extended dissection flap. If dissection flap is localized and hemodynamic status is stable, conservative management and delayed PCI would be a treatment option for aortocoronary dissection despite acute myocardial infarction.⁴⁾⁵⁾

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