10091

The assessment of CTO lesion with MRI, CT, and CAG

Background: Detection and assessment of CTO lesion is sometimes difficult. We used three different modalities for a CTO lesion, and assessed the feasibility. Case: 68 year-old male patient with effort angina pectoris underwent cardiac MRI and suspected stenosis in proximal LAD. He underwent CAG and revealed to have CTO lesion in the proximal LAD with good collateral from conus branch. He then underwent coronary CTA to assess the CTO lesion. We compared the three modalities and assessed the characters in four levels; Excellent/Good/Poor/Impossible. Results: Each modality had its own character (Chart). Coronary CTA provided important information that the CTO lesion did not include calcification. Cardiac MRI was underpowered mostly according to its poor resolution, and assessment of the plaque was impossible in this case. Conclusion: Using only one modality was not enough for assessment of CTO lesion. Combining modalities, we can make better strategies for CTO-PCI. Cardiac MRI can be a stronger modality when the resolution is improved.

	CAG	Cardiac MRI	Coronary CTA
1) Detection of CTO	Excellent	Poor (Difficult to differentiate CTO lesion from stenosis.)	Excellent (CTO re-entry was clearer than CAG.)
2) Assessment of the collateral	Excellent (Conus branch gave Rentrop grade 3 collateral to distal LAD.)	Poor (According to the resolution)	Good (Volume rendering view gave the 3D image of the collateral running epicardium.)
3) Assessment of the CTO plaque	Impossible	Impossible (According to the resolution)	Excellent (Slab MIP image revealed the CTO lesion did not include calcification.)
4) Others	LVG revealed the anterior wall was mild hypokinesis.	Stress perfusion proved inducible ischemia in the anterior wall. LGE revealed small endomyocardial scar (non-Q MI).	Simulation of X-ray projection angle revealed deep LAO spider view is ideal to see the orifice of the CTO.