

Feasibility of Angiography to Intravascular Ultrasound Co-registration for Percutaneous Coronary Intervention

The University of Tokyo Hospital, Japan
Jiro Ando

[Purpose] The purpose of this study was to evaluate the accuracy of prototype software designed to co-register angiographic and IVUS images. The software ("Angio IVUS Co-registration," Siemens AG; Forchheim, Germany) may improve efficiency by allowing operators to intuitively understand the relationship between angiographic and IVUS images.

[Methods] IVUS images were collected with ECG-triggered fluoroscopy following coronary angiography, prior to stenting, during 18 PCI cases performed at the University of Tokyo Hospital. Co-registration accuracy was evaluated using landmarks that were identifiable on both angiography and IVUS images.

[Results] The average accuracy of co-registration was 2.02 ± 1.90 mm (mean \pm SD). During 5 of the 18 cases, the IVUS catheter did not move freely within the vessel. Excluding these cases, the average accuracy was 1.02 ± 0.24 mm.

[Conclusion] Our results suggest that this technology has the potential to contribute to more accurate stenting. Further study is needed in order to quantify improvements in accuracy, efficiency and image interpretation.

