Supplementary

3D fusion quantitative analysis using CTA-PET images

^{18}F-fluorodeoxyglucose positron emission tomography (^{18}F-FDG PET) is considered the gold standard for the detection of myocardial viability (1-3). The method proposed in this paper is applicable to both ^{18}F-FDG PET and SPECT images. However, the quality of ^{18}F-FDG PET imaging is affected by glucose metabolism, which can result in reduced effectiveness, and affect the availability of data acquisition (4). The high cost and complexity of current PET scanners limit their widespread use. We only used ^{18}F-FDG PET scans in the animal studies. Despite increasing myocardial ^{18}F-FDG uptake using glucose clamp, high-quality PET images were only available for 8 of the 20 subjects. Infarct size was quantified according to the procedure presented in this paper. A linear regression analysis showed a good correlation between the IR determined by CTA-PET and histological staining (r^2=0.99, P<0.01). The Spearman analysis revealed a significant correlation between the IR derived from CTA-PET and CTA-SPECT [24.1% (IQR, 14.7–32.5%) *vs.* 27.6% (IQR, 17.1–34.7%), P<0.01]. As SPECT is more economical and easier to perform in clinical settings than PET, SPECT was only adopted to assess infarction in the clinical study.

Patients' images and data

In this section, we provide images and data of all the patients included in the study. *Figure S1* shows the 3D fusion analysis of 8 patients' data. The IRs are summarized in *Table S1*.

http://dx.doi.org/10.21037/qims-20-702

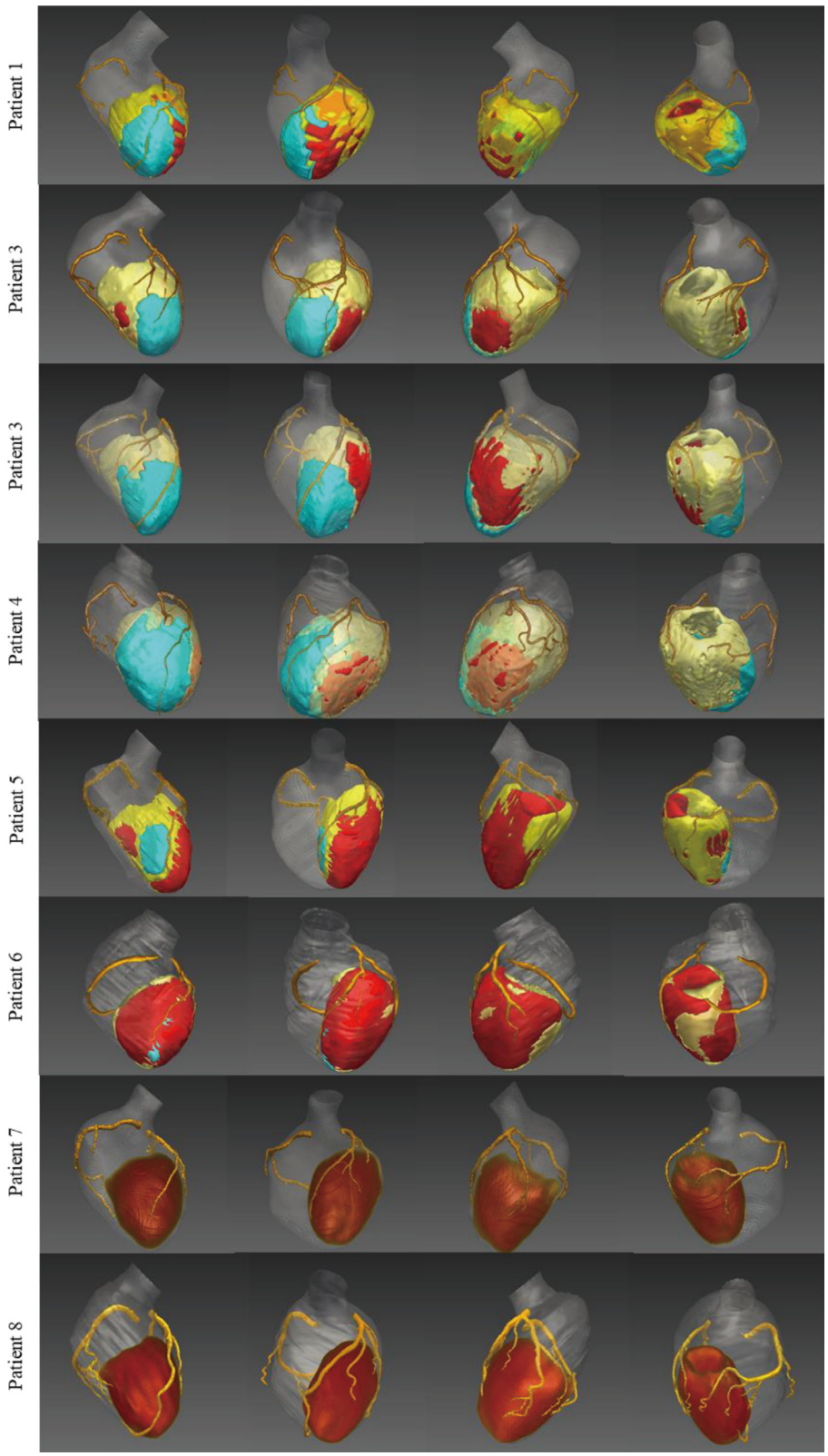

Figure S1 3D fusion analysis of 8 patients. The blue area indicates the region of the infarct, the yellow area, the adjacent area, and the red area, the normal myocardium.

http://dx.doi.org/10.21037/qims-20-702

Table S1 The infarct ratio of 8 patients derived by 3D fusion quantitative analysis

Patient number	Infarct ratio (%)
1	19.35
2	14.83
3	27.33
4	17.27
5	5.80
6	0.54
7	0
8	0

References

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