

Peer Review File

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Reviewer A

Comment 1: please include a figure of the system/scanner and of a typical result

Reply 1: We added a picture of the MCG system and the MCG result of a positive case to the article.

Changes in the text: The above pictures were marked on page 5, line 8, by figure 1.

Reviewer B

Comment 1: No sample size calculation for the control and study subjects.

Reply : Thank you for your suggestion. The sample size was estimated based on test of one ROC curve using a PASS 11 software.

Changes in the text: The sample size was estimated based on test of one ROC curve using a PASS 11 software, at significance level of 5% , power of 90%, AUC_{H0} of 0.7 and AUC_{H1} of 0.5. (see Page 7, line 1.)

Comment 2: The study population and inclusion criteria is poorly defined. Were these undifferentiated chest pain patients referred from the emergency department? Office or clinic? Did the patients first rule out for an acute myocardial infarction? If so, how? (e.g. biomarkers, ECG). Other important cardiac risk factors were not included in the

patient clinical features (Table 1) such as family history of (early) CAD and history of hyperlipidemia. How was the need for PCA determined?

Reply: Thank you. We understand your concern on the study population and inclusion criteria. Another reviewer also put the same question. And we have realized the importance to elaborate the characteristics of study population and inclusion criteria. We included additional baseline data to illustrate the characteristics of enrolled patients. This study focused on patients with symptoms of angina pectoris that required coronary angiography to assess whether to undergo PCI. After modification, we elaborated on angina-like symptoms. Coronary angiography was needed in patients with these symptoms. We enrolled patients who had those symptoms and agreed to undergo coronary angiography. Because patients with ST-segment elevation myocardial infarction often require emergency surgery, MCG examinations before the surgery were not appropriate. In addition, some patients who were stable at the time of enrollment and successfully enrolled, but developed severe chest pain before MCG examination, should also receive emergency PCI surgery and be excluded from this study.

Changes in the text: we elaborated inclusion criteria in this article (see page 4, line 12 to page 5, line 2). The baseline data were listed in table 1.

Comment 3: Although patients had an ECG before and after the PCA, the results of the ECGs are not mentioned. Did they show ischemic changes? It is difficult to know whether the ECG itself or abnormal biomarkers in these patients could have suggested

a need for PCA.

Reply: We added the data of 12-lead ECG and Tni of the enrolled patients, and the definition of myocardial infarction was that the troponin I level was greater than 0.5ng/ml (according to the reagent standard used in our hospital).

Changes in the text: The diagnosis of MCG and ECG is described in the result section and table 3. (See page 9, line 1 to 8)

Comment 4: Lack of comparison magnetocardiography studies evaluating accuracy in patients also requiring coronary angiography for evaluation of chest pain.

Reply: The aim of this study was to identify patients in need of revascularization in those with chest pain. All patients were suspected of having coronary heart disease because of angina-like symptoms. Therefore, it is difficult to judge whether a patient needs revascularization based on symptoms alone.

Comment 5: What risk category were the study patients? Low, Intermediate, High??

Reply: The patients involved in this study were those with angina-like symptoms problems and stable enough to run the MCG examination. Although some of them were diagnosed with NSTEMI, the chest pain had already relieved.

Comment 6: Needs grammatical revision overall.

Reply: we are sorry for the grammatical mistakes in this article. We have revised the grammar problems and examined the draft text.

Reviewer C

Comment 1:Where was the sample size calculation for this study?

Reply:Thank you for your suggestion. The sample size was estimated based on test of one ROC curve using a PASS 11 software. According to the estimated sample size, the study required 39 subjects for each group. We doubled the sample size.

Changes in the text: The sample size was estimated based on test of one ROC curve using a PASS 11 software, at significance level of 5% , power of 90%, AUC|H0 of 0.7 and AUC|H1 of 0.5. (see Page 7, line 1.)

Comment 1:The authors state in the introductions " In this study, we introduced a new method based on MCG equipment" how is the equipment new? a newer technology? or new software to interpret the technology.

Reply:The method to analyze MCG data was new in this study. We quantified the differences of T waves by Pearson's correlation coefficients, and established a logistical model for diagnosis.

Changes in the text: we replaced "new method " by "new diagnosis model".(See page 4, line 3)

Comment 2:The inclusion criteria are ? please elaborate on angina-like symptoms and what does "suited" for MCG mean? Suited can be interpreted as hand picked for the best accuracy for the machine, based on body habitus, no claustrophobia, known

severe CAD. Based on this lack of detail it would be difficult to reproduce this type of study. It is also unclear how "we retrospectively analyzed 203 patients" Was everyone getting an MCG in the cardiac cath lab area and then you included some of these patients? It seems as though you would have to prospectively find patients?

Reply: We are sorry that we did not make inclusion criteria clear enough. Angina-like symptoms were defined as crushing, gripping, tight, dull, burning or heavy chest discomfort or pain, which associated with exertion or emotional stress and relieved within about 5 to 20 minutes by rest.

"Suited for MCG" means that the MCG examination will not be affected by the patient's condition. If a patient has a metal implant, especially near the chest, then the curve of the MCG will drift with the patient's breathing. These patients were excluded from the study.

We did not consider the impact of moderate to severe valve disease on the study at the beginning of the study. However, we realized that cardiomyopathy caused by moderate to severe valvular disease could affect ventricular repolarization. In addition, Coronary angiography is routine required before valve replacement to determine whether coronary artery bypass surgery should be performed together. Therefore, we excluded 3 patients with moderate or severe valvular disease in the analysis, which we thought had little impact on the overall results in this study. Therefore, when we submitted the paper for the first time, we excluded the 3 patients at the end of this study, so we used the word retrospective.

Changes in the text: We added the explanation for the exclusion of patients with metal

implants.(See page 4, line 21) We added the patients that were excluded from this study.(See page 7, line 17)

Comment 3:How do you perform "simultaneous recordings of ECG and MCG" The ECG would interfere with the MCG so the patients couldn't have the ECG at the same time? What did you do with the ECG? how did it compare to ECG and Cardiac cath?

Reply: we did perform 12-lead ECG before PCA and revascularization, the results were added in the result section. It was a II-lead of ECG that performed with MCG at the same time, one limb electrode were placed on the patient's left leg. It was helpful to identify the the beginning and end of MCG curve according to signal of II-lead of ECG.

Changes in the text: we made an explanation for 12-lead ECG and II lead of ECG in the article.(See page 5, line 2 to 5) The ECG data were detailed in result section and Table3.(See page 9, line 1 to 8)

Comment 4:SQUID is not defined

Reply:SQUID is the abbreviation for superconducting quantum interference device.

Change in the text: The full name has been defined in the article.(See page 5, line 9)

Comment 5:There are grammatical issues.

Reply: Thanks for your consideration of the paper. We have revised the grammar

problems and examined the draft text.

Comment 6:Needs statistical review.

Reply: We reviewed the entire statistical work again, and two mistake were found in table 3. The accuracy of MCG in all patients was 69.9%, not 70.0%. And sensitivity was 72.9%, not 72.7%. All mistakes have been corrected.

Change in the text: The accuracy and sensitivity of MCG in all patients have been corrected in sections of result and discussion and table 3.(See page 8 and line 21; page 11, line 21)