

Dear Dr. Jin-Lei Wang,

Re: Manuscript NO.: 72245, Case Report, entitled “Spontaneous dissection of proximal left main coronary artery in a healthy adolescent presenting with syncope: A case report”

Thank you very much for your appreciations and constructive comments on our manuscript!

We have revised the manuscript according to your instructions and the comments from the reviewers. We hope the current version would fulfill your editorial requirements. Please contact me if you have further questions.

Best wishes,

Feng Gao

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POINT-BY-POINT RESPONSES TO THE COMMENTS OF SCIENCE EDITOR

I have reviewed the Peer-Review Report, full text of the manuscript, and the relevant ethics documents, all of which have met the basic publishing requirements of the World Journal of Clinical Cases, and the manuscript is conditionally accepted. I have sent the manuscript to the author(s) for its revision according to the Peer-Review Report, Editorial Office’s comments and the Criteria for Manuscript Revision by Authors. Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor. Authors are required to provide standard three-line tables, that is, only the top line, bottom line, and column line are displayed, while other table lines are hidden. The contents of each cell in the table should conform to the editing specifications, and the lines of each row or column of the table should be aligned. Do not use carriage returns or spaces to replace lines or vertical lines and do not segment cell content.

Comment 1: Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor.

Response: Thank you very much. The original figure documents in PowerPoint format have been attached.

Comment 2: Authors are required to provide standard three-line tables, that is, only the top line, bottom line, and column line are displayed, while other table lines are hidden. The contents of each cell in the table should conform to the editing specifications, and the lines of each row or column of the table should be aligned. Do not use carriage returns or spaces to replace lines or vertical lines and do not segment cell content.

Response: Thank you very much. The tables have been checked and corrected.

POINT-BY-POINT RESPONSES TO THE COMMENTS OF REVIEWER #1

This reviewer thinks that this case is rare and very interesting. Its clinical manifestation may afflict physicians. Thus, this case report would be also educative for general physicians as well as cardiologists. However, this reviewer has several concerns about this case report. Major: 1. Line 91 Please describe the race in detail. Which kind of race? Exercised at all-out intensity? 2. Did the stent cover the entire dissected segment without crossover the bifurcation? Please explain it in the procedural section. 3. Why did not you perform catheter or coronary CTA on admission despite the typical ischemic change in ECG, LV dysfunction in UCG, and troponin positive result? What was your diagnosis on admission and what did you do for 15 h after admission? 4. Please discuss about what were the differences between this case and the other two LMT spontaneous dissection cases. Why dissection sopped within the LMT ? Minor: 1. Line 79 and may has a unique clinical feature→may have? 2. Line 87 “18 h history of syncope” Meaning is ambiguous. Please correct this description. 3. Line 97 “The patient had no cardiovascular risk factors and was taking no oral medications at the time. ” This sentence should not be included in this paragraph. 4. Figure 3A The frame showing the most narrow should be presented. Longitudinal view covering the entire LMT would be helpful to know the range of spontaneous dissection 5. Figures 5 A and B Please indicate the dedicated site with the arrows (difference between A and B) 6. Figure 5 C Please explain the difference between WT and Mut in red and yellow parts with arrows.

Comment 1: Line 91 Please describe the race in detail. Which kind of race? Exercised at all-out intensity?

Response: Thank you very much for your comments. The patient had collapsed from exhaustion during an intense race. We have revised the paragraph to make it clear for reading (Page 3 Line 90).

Comment 2: Did the stent cover the entire dissected segment without crossover the bifurcation? Please explain it in the procedural section.

Response: Thank you very much for your comments. The stent was deployed from the ostium of LMT to the proximal portion of LAD to fully cover the lesion. We have explained it in the procedural section (Page 4 Line 135).

Comment 3: Why did not you perform catheter or coronary CTA on admission despite the typical ischemic change in ECG, LV dysfunction in UCG, and troponin positive result? What was your diagnosis on admission and what did you do for 15 h after admission?

Response: Thank you very much for your comments. In our patient, despite troponin positive result and LV dysfunction in UCG, the diagnosis of SCAD was established hours later after taking into account typical angina symptoms and dynamic changes in the ECG. On admission, considering the young age, low coronary risk profile and atypical symptoms, the patient was initially diagnosed with suspected acute myocarditis after upper respiratory infection. She was scheduled for cardiac magnetic resonance imaging (MRI) and coronary computed tomography angiography (CTA) after 2 days. She had continuous ECG monitoring, while a low dose of β -blocker was used to lower her heart rate. We have revised the paragraph (Page 4 Line 113).

Comment 4: Please discuss about what were the differences between this case and the other two LMT spontaneous dissection cases.

Response: Thank you very much for your advice. When compared to the other two LM spontaneous dissection cases, our case is unique in that it is the first reported case of SCAD presenting with syncope, a relatively uncommon manifestation. In addition, intravascular ultrasound is performed in our case for optimal diagnosis. It is helpful in diagnosing plaque rupture, dissection and in situ thrombus formation in atypical epidemiology such as adolescents. Thirdly, as for now, there are no available guidelines for adolescents regarding required workup and management. We performed PCI for the LMT lesion. A good long-term prognosis was confirmed at the 24-mo. Follow-up (Page 6 Line 200).

Comment 5: Why dissection sopped within the LMT ?

Response: Thank you very much. IVUS during angiography identified artery dissection starting from the LMT to the ostium of the LAD. The questions have been rectified (Page 4 Line 126 and Page 12 Line 386).

Comment 6: Line 79 and may has a unique clinical feature→may have?

Response: The word has been corrected (Page 3 Line 78).

Comment 7: Line 87 “18 h history of syncope” Meaning is ambiguous. Please correct this description.

Response: We are very sorry for our incorrect writing. The patient presented to our outpatient department after having a syncopal episode 18 h ago. We have corrected (Page 3 Line 86).

Comment 8: Line 97 “The patient had no cardiovascular risk factors and was taking no oral medications at the time.” This sentence should not be included in this paragraph.

Response: Thank you very much. This sentence has been deleted as suggested (Page 3 Line 96).

Comment 9: Figure 3A The frame showing the most narrow should be presented. Longitudinal view covering the entire LMT would be helpful to know the range of spontaneous dissection.

Response: Thank you very much for your advice. Figure 3A The frame showing the narrowest have been presented (Page 12 Line 383).

Comment 10: Figures 5 A and B Please indicate the dedicated site with the arrows (difference between A and B).

Response: Thank you very much for your advice. The arrows were added as suggested (Page 14 Line 396).

Comment 11: Figure 5 C Please explain the difference between WT and Mut in red and yellow parts with arrows.

Response: Thank you very much for your advice. The arrows were added as suggested (Page 14 Line 396).

POINT-BY-POINT RESPONSES TO THE COMMENTS OF REVIEWER #2

In this case report, entitled “Spontaneous dissection of proximal left main coronary artery in a healthy adolescent presenting with syncope: A case report” , the authors described a 16-year-old girl with spontaneous coronary dissection in whom a mutation in the ETHE1 gene was found. This case report of adolescent was important and interesting. This reviewer has several comments as follows: 1.The manuscript had much redundant information. The authors need to focus on adolescent presentation and the paper needs to be concise and clear. 2.It would be interesting if authors could provide the details about pre-interventional intravascular ultrasound (IVUS) image. Was the IVUS findings used to guide percutaneous coronary intervention (PCI)? 3.In this case report, the authors focused on the adolescence in spontaneous coronary dissection and reviewed previous case reports. It would be great if the authors could discuss about the differences between the adolescent group and the others in detail. 4.In the legend of figure 2 in page 12, the description of ‘aortic root aortography using a pigtail catheter’ is not corresponding to the image A in which selective left coronary angiography was performed.

Comment 1: The manuscript had much redundant information. The authors need to focus on adolescent presentation and the paper needs to be concise and clear.

Response: Thank you very much for your comments. We have revised the discussion section, deleted the redundant information to make it concise and clear (Page 35 Line 168).

Comment 2: It would be interesting if authors could provide the details about pre-interventional intravascular ultrasound (IVUS) image. Was the IVUS findings used to guide percutaneous coronary intervention (PCI)?

Response: Thank you very much for your comments. IVUS during angiography identified intramural hematoma severely compressing the true lumen which extended from the LMT to the ostium of the left anterior descending artery (LAD) suggesting SCAD (Fig. 3) (Page 4 Line 126 and Page 12 Line 386). IVUS was used to guide PCI in our patient. The use of IVUS helped us with lesions assessment, device selection and diagnosis of complications after PCI (Page 4 Line 135).

Comment 3: In this case report, the authors focused on the adolescence in spontaneous coronary dissection and reviewed previous case reports. It would be great if the authors could discuss about the differences between the adolescent group and the others in detail.

Response: Thank you very much for your comments. There are obvious differences between adolescent group and adult group with SCAD. First, an intriguing finding is that 5 of 7 adolescent patients were of male gender, while in adults, SCAD occurs overwhelmingly in female. According to the small sample size, this could be a casual phenomenon. Secondly, adolescent group is not well studied and has a unique risk profile with less traditional cardiovascular risk factors compared with adult group. SCAD has been described in 2 case reports of adolescent patients with neurofibromatosis type I and systemic lupus erythematosus (SLE) . Acute triggering event involving the consumption of a caffeine -containing beverage [18], heavy exercise and use of methylphenidate are the suspected causes of SCAD. We have revised the paragraph (Page 6 Line 190).

Comment 4: In the legend of figure 2 in page 12, the description of ‘aortic root aortography using a pigtail catheter’ is not corresponding to the image A in which selective left coronary angiography was performed.

Response: We are very sorry for our incorrect writing. The questions have been rectified (Page 12 Line 379).