Author's response to reviews

Title: Noncompaction Cardiomyopathy: a substrate for a thromboembolic event

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Author's response to reviews: see over
Author's covering letter for initial submission

Title: Noncompaction Cardiomyopathy: a substrate for a thromboembolic event

Authors:

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Comments: see over
São Paulo, December 16th, 2014

Timothy Shipley,

Executive Editor, BMC Cardiovascular Disorders

Dear Dr. Shipley:

We are resubmitting a case report titled “Noncompaction cardiomyopathy: a substrate for a thromboembolic event” to Case Report in BMC Cardiovascular Disorders after considering the suggestions made by reviewers, for which we are grateful.

It is an interesting case of a male patient with diffuse and serious noncompaction cardiomyopathy. The main issue in describing this case is to show a rare patient with huge biventricular thrombus and to discuss the lack of evidence-based treatment of this disease, mainly considering the indication for anticoagulation in noncompaction patients.

None of the images have been published previously, and they are not under consideration elsewhere. Moreover, the authors have read and approved the manuscript, and none of them have a financial or other conflict of interest.

We hope our case will merit publication in BMC Cardiovascular Disorders.

Best regards,

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Revision of the paper
We would like to thank the reviewers for the suggestions

**Responses to the reviewers are below:**

**Reviewer Angelos Rigopoulos:**

**Major revision:**

*The presented echocardiographic images give no suspicion of noncompaction cardiomyopathy and the diagnosis as well as the thrombus detection is made with MRI. It is essential that, instead of not so important Doppler images, the authors provide high quality 2-dimensional echocardiographic images supporting the diagnosis of noncompaction. After all, echocardiography is the first line diagnostic tool for this cardiomyopathy.*

- We strongly agree that echocardiography is a first line diagnosis method and we included the 2-dimensional apical view at the supplemental file. However, as we can see, the patient presented a limited echocardiographic window and the trabeculations are poorly visualized.

*The referred ‘Zaheer et al’ (line 33) does not exist in the references (No 3 reference is something else).*

- We included the correct name of the authors of reference 3: Yousef et al instead of Zaheer et al.

*It would be prudent to include any former knowledge on the issue in the discussion. There are some papers and cases in the literature that has already discussed the issue.*
We included 3 papers about anticoagulation in noncompaction cardiomyopathy and the discussion of this issue, as follows:

‘In 2008, according to Fazio et al, NCC does not present thromboembolic risk and there is no indication for anticoagulation [4]. On the other hand, nowadays, the indication for anticoagulation treatment in NCC is still debatable. Almeida et al recommended anticoagulation only in cases of left ventricular dilation and dysfunction or with previous embolic events [5] Recently, Stöllberger and Finsterer stated that thrombi may also develop in patients with NCC even with preserved systolic function [6].’

Minor revision:

Not all presented MRI images show delayed gadolinium enhancement (line 115).

The authors should clearly state what exactly is shown in every image.

Gadolinium enhancement should however be commented in the image legend where appropriate.

We changed the image legend accordingly:

Figure 2. Cardiovascular magnetic resonance short axis cine images showing LV wall and trabeculation, with maximum non-compacted to compacted thickness ratio of 3.2 (normal < 2.3) (A); delayed enhancement long-axis five-chamber view showing left ventricular apical thrombus (B); multiple long-axis four-chambers disclosing
biventricular thrombus (C); multiple short-axis two-chambers illustrating the same biventricular thrombus (D). LV (left ventricle).

Reviewer Matthias Pauschinger:

The manuscript would improve, if the excellent review by Almeida et al. would be cited. In addition, in the discussion section the author should discuss in more detail the problem that patients even on an anticoagulation therapy can develop thromboembolic events.

• We included the reference of the paper Almeida et al and a discussion about anticoagulation indication therapy, as follows:

‘In 2008, according to Fazio et al, NCC does not present thromboembolic risk and there is no indication for anticoagulation [4]. On the other hand, nowadays, the indication for anticoagulation treatment in NCC is still debatable. Almeida et al recommended anticoagulation only in cases of left ventricular dilation and dysfunction or with previous embolic events [5] Recently, Stöllberger and Finsterer stated that thrombi may also develop in patients with NCC even with preserved systolic function [6].’

Reviewer Grégoire Girod
Echocardiographic pictures don't well illustrate the biventricular noncompaction: we could hope pictures from left and right apical 4 chambers view with color Doppler showing the sinusoids.

- First of all, thank you for your suggestion, we made a short case description as it is a case report with limited space for the Journal and the focus of this case is to discuss anticoagulation indication. We did not show the apical echocardiographic images because the patient presented a limited echocardiographic window and the trabeculations are poorly visualized. The image is included in the supplemental file. This was the reason why the patient was submitted to CMRI to clarify the diagnosis.

The discussion is not supported by solid scientific references (the reference from NEJM doesn't mentioned any patient with noncompaction cardiomyopathy).

- We excluded the NEJM reference and included 3 more suitable references.