Author’s response to reviews

Title: Cardiac computed tomography imaging Follow-Up of Iatrogenic Aorto-Corony Dunning” Dissections

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Version: 1 Date: 21 Jun 2017

Author’s response to reviews:

Editor comments:

Thank you very much for your re-submission to BMC Medical Imaging. Your manuscript has been reviewed by the original reviewers but unfortunately they have a number of concerns remaining and so we cannot consider acceptance of your manuscript at this time. Reviewer 2 in
particular has raised a number of major concerns and recommends a re-write of the manuscript. Due to the fact that the manuscript has already undergone a round of revision and re-submission, we would only encourage re-submission for a second time if you feel you are able to fully address the reviewers comments.

In this situation we would generally recommend rejection of the manuscript with no offer to re-submit, however, since reviewer 1 has provided a more favourable report if you are able to fully address the reviewer 2 critiques and concerns then we would be willing to consider a revised version of your manuscript. We hope that the reviewer reports prove to be constructive.

Associate Editor Comments (Richard Castillo):

The reviewers have identified a number of issues with regard to the description of the methodology, as well as the readability of the text. These numerous concerns should be addressed by the authors before publication can be recommended.

BMC Medical Imaging operates a policy of open peer review, which means that you will be able to see the names of the reviewers who provided the reports via the online peer review system. We encourage you to also view the reports there, via the action links on the left-hand side of the page, to see the names of the reviewers.

Dear Editor,

We again revised our manuscript according to all of the reviewers´ proposals.

We would like to kindly let you know, that our initially submitted first version of our manuscript was already formatted as a pictorial essay per our initial intention.

However according to the first round of reviews, it was changed into a case series due to the critique of one of the reviewers that a pictorial essay would not be the adequate format for our article.
In contrast after changing the format as requested, the second round of review again demands resetting the format into a pictorial essay, as already set out within the initially submitted original manuscript version.

You might understand, that this appears somewhat confusing to us. However, we for sure do again accord to the reviewers´ comments and now changed the format into a pictorial essay again in its current form, now focusing even more on CTA-aspects, as requested.

We do hope sincerely, that you now feel able to accept our manuscript for final publication in BMC Medical Imaging.

Sincerely,

S. Baumann
M. Behnes
I. Akin

Reviewer reports: yang chen (Reviewer 1):

The paper has been improved after the first revision. The main limit of this paper is the small number of patient data and no statistical analysis on significance is given.

Careful language checking is still highly required.

1, p5,line 4, check "This monocentric, retrospective and observational study evaluates diagnostic and therapeutic regimens including imaging examples of patients developing iatrogenic aortocoronary DDs were collected for the present analysis.";
We thank the reviewer for this notice and deleted the last six words.

2, p5, line 31, what is the meaning of "at least"?

This sentence means, that we used only state-of-the art dual-source CT scanners, with a minimum of 64 rows. Thus, we changed the sentence in the manuscript to: “All cCTA examinations were performed by using dual-source CT scanners with a minimum of 64 detector rows”

3, p5, line 51, please define clearly the operations of "Image analysis";

The sentence “Image analysis was performed on a separate computer workstation.” was changed to: “Analysis of the cCTA images were performed on a separate workstation with a predefined high resolution screen.”

4, p6, line 5, "either conservative" should be "either conservatively"

The grammatical error was corrected.

Irene Bargellini (Reviewer 2):

GENERAL COMMENT

Despite some improvement, the paper still presents several limitation due to the poor study design, unclear objective and methods and not obvious conclusions. Clinical data are missing and follow-up is limited and inhomogeneous. Moreover, editing is still required in the entire manuscript.
Since the authors are presenting very nice images, I would suggest this paper to be entirely re-written as a pictorial assay on the role of CTA in detection and follow-up of DD.

We thank the reviewer for their detailed review and have taken aware of the reviewer’s criticism and reformatted the entire manuscript from a study to a pictorial essay. Moreover, we have focused on the follow-up with cardiac CTA and clarified the conclusion and hope to address all issues.

SPECIFIC COMMENTS

Abstract

- Materials and methods: delete "optimal"

The word optimal was deleted.

- Results: does 75% refers to the number of patients? delete "most of patients" and provide number and percentages of patients

We clarified the meaning by rearranging the sentence.

- Conclusions: the conclusions are unclear and not demonstrated by the results

We generalized the conclusion and followed the suggestion of the reviewer. “Independently of the type of DD (I-III), it was demonstrated that cCTA plays a valuable role for detection and follow-up of patients with DDs.”

Introduction

-Page 4 line 24: clarify or correct "beyond"

The meaning of the section was reworded to: “While surgical treatment is still under debate, it is discussed whether PCI with implantation of drug eluting stents (DES)…”

-Page 4 line 24: clarify or correct "accordingly"
“Accordingly” was changed to “Nonetheless”.

-Page 4 lines 34-44: delete or rephrase with a more generic sentence regarding the role of CTA
We deleted the sentence.

-Page 4 line 46: the term "reveal" is not appropriate
“Revealed” was replaced by “underlie”.

-Page 4 line 56: modify "in-house"
“in house” was replaced by “institutional”.

-Page 4: last two lines can be deleted
The sentence was deleted.

Materials and Methods

-The first paragraph needs to be re-written, describing number of PCI procedures in the study period and how patients of the study were identified from the database.
This information (number of PCIs in the study period and calculated incidence) is now mentioned in the result section. We added the sentence “Identification of the patients was performed retrospectively by reviewing our in-hospital electronic documentation system.”

-Page 6 line 12: please explain the meaning of "close-meshed" or modify the term
“Close-meshed up” means a careful watch-and-wait strategy (e.g on an ICU unit). However, we have decided to delete the term to avoid further confusion.
An explanation is needed on how exactly DD was detected (at angiography? At CTA?) and how management was decided: was it based on angiography or on CTA? Was it decided immediately at the time of detection of DD or after CTA? Was CTA performed immediately in all patients?

An immediately cCTA was performed in 6 of 8 patients as described in table 3. However, the initial diagnostic suspicion was always performed within coronary angiography during PCI.

Page 6 lines 27-28: "interdisciplinary discussion…was investigated" please rephrase

The sentence was rephrased to: “An interdisciplinary discussion of all cases within a heart team was performed in all cases.”

Page 6 statistical analysis: authors describe a statistical analysis that is not reported in the results (Fisher and chi-square tests for what kind of comparison? SEM when?) Please review

Results

The reviewer is right with this note. We deleted this part as a dedicated statistical analysis was not performed and not further needed as this manuscript is reformatted to a pictorial essay.

Page 7 line 7: please provide the precise number of PCI performed in the study period and the precise incidence of DD

The number of PCIs and incidence is now mentioned. "At our institution 3,600 PCI procedures were performed during the study period, resulting in an incidence of 0.22%.

Page 7 line 12: Since patients were admitted for PCI I would assume that all patients were at increased cardiovascular risk profile. Please explain better what is meant by "increased"

We have added the addition “…with at least one cardiovascular risk factor”. An overview of all cardiovascular risk factors is represented in table 1.

Were any of the patients symptomatic when DD was detected?
As this study had a retrospective design, it was not possible to reconstruct the exact symptoms at the time of the DD. The following sentence was added: “Usually patients presented with symptoms of acute chest pain when the DD occurred as a complication of PCI.”

-Page 8 line 12: please modify the term “intubation”

“Intubation of coronary arteries with a guiding catheter” is an accepted expression in the field of interventional cardiology and should be maintained.

-Page 8 line 14: please explain the term “singularly”

We used “rarely” instead of “singly.”

-Page 8: the entire paragraph regarding “diagnosis and therapy treatment of DD” needs to be re-written including clinical information. Besides imaging follow-up, clinical and laboratory data on follow-up are needed, as well as medications given.

The initial laboratory data is given in table 1 and the antithrombotic medication was added to table 1.

As the entire manuscript is now focused on a CT imaging follow-up, we have waived to add the information about laboratory follow-up and medications to follow a clear scope.

-What happened to those patients lost to imaging follow-up?

50% of patients did not present back to our clinic, because of subjective improvement of symptoms and stable cardiopulmonary status, and therefore clinical re-assessment by cCTA was not necessary in these patients, as being decided by clinicians during routine clinical care.

-What about longer follow-up?

The follow-up of patients as well as the treatment of DD patients totally relied on the physicians being involved in clinical routine care. Their decisions were based on clinical considerations implementing a stable course with until complete healing without further re-evaluation by cCTA. In case of more severe stages of DD and as well-being based on clinical decision-making cCTA was planned and re-investigated during follow-up.
-Did follow-up imaging modify patient’s management in any case? Did it influence patients’ survival?

In one case cCTA-guided angiography revealed a progression of the intramural aortic hematoma one day after initial ostial sealing with a residual dissection at the RCA ostium. Recurrent coronary angiography was performed to implant another stent covering the entry. This case was published by our study group (Baumann et al. Can J Cardiol 2014). All patients survived DD at 6 months of follow-up.

-Since this is supposed to be a clinical study the paragraph regarding imaging examples can be deleted and figures should be mentioned in the remaining text

As we reformatted the entire manuscript from a clinical study to a pictorial essay, we left the text as a detailed case description is obligatory needed for a pictorial essay.

Discussion

-The steps listed at the beginning of the discussion should be clearly explained in the materials and methods and the results should support the validity of these steps

-As already mentioned, the data presented in the study do not clearly support the conclusions

We followed the suggestion of the reviewer and rewrote the conclusion: “DDs are rare but serious complications of coronary interventions, while the extent of the dissection is defined at angiography. This pictorial essay demonstrates that cCTA plays a valuable role for detection and follow-up of patients with DDs. While using high-resolution scanners, cCTA can exactly provide precious information about the origin and extent of the dissection and is therefore a helpful tool for non-invasive follow-up.”

Tables

-Tables 3 and 4 can be unified in a single table

Table 3 and 4 are merged.