

Coronary Artery Disease

Accordion Music From the Heart: Dynamic Coronary Artery Compression.

--Manuscript Draft--

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Abstract:	<p>A 35-year-old woman was admitted to our hospital with unstable angina. During her last holidays, she had suffered an anterior myocardial infarction (MI). Her available medical records described a totally occluded mid left anterior descending (LAD) coronary artery treated with two overlapped stents.</p> <p>The new coronarography revealed a very tight systolic coronary stenosis at the proximal edge of the stents, secondary to severe dynamic shortening of the LAD in an accordion-like fashion.</p>

First of all, we would like to note that we sincerely appreciate the valuable comments and suggestions provided by the reviewer. Below, we proceed to respond to each of the points and to comment the changes incorporated in the document.

Reviewer Comments:

Interesting case. A few minor revisions and clarifications suggested.

- 1. Can you add the image after de additional stenting to show that the accordion resolved?**

Considering this comment a new video (video 4) has been added to demonstrate the “changes” (compared with video 3) after stenting.

- 2. It would have been somewhat interesting to show the stent edge with IVUS or OCT prior to additional stenting--was this done? If yes, would include these images.**

As mentioned in the text, we did not find any plaque or dissection at the stent edge with IVUS. However, unfortunately we regret to inform you that the available IVUS images do not have the enough quality to be consider for publication.

- 3. Finally, did you have objective evidence of anterior ischemia—myocardial bridging with systolic compression only would not cause ischemia. Some comment on ischemia causes (if diastolic only compression) is warranted.**

Regarding the etiology of ischemia in our case and in others with systolic compression, we have included a new comment and a recent reference (1. Tarantini G, et al. J Am Coll Cardiol 2016).

- 4. Can you change the title to reflect the case better: “Accordion Music From the Heart: Dynamic Coronary Artery Compression”.**

Done. Thanks for the suggestion.

Coronary Artery Disease

Manuscript Title: *Accordion Music from the Heart: Dynamic Coronary Artery Compression*

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This statement is to certify that all Authors have seen and approved the manuscript being submitted. We warrant that the article is the Authors' original work. We warrant that the article has not received prior publication and is not under consideration for publication elsewhere. On behalf of all Co-Authors, the corresponding Author shall bear full responsibility for the submission.

This research has not been submitted for publication nor has it been published in whole or in part elsewhere. We attest to the fact that all Authors listed on the title page have contributed significantly to the work, have read the manuscript, attest to the validity and legitimacy of the data and its interpretation, and agree to its submission to Coronary Artery Disease.

TITLE:

Accordion Music from the Heart: Dynamic Coronary Artery Compression.

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A 35-year-old woman was admitted to our hospital with unstable angina. During her last holidays, she had suffered an anterior myocardial infarction (MI). Her available medical records described a totally occluded mid left anterior descending (LAD) coronary artery treated with two overlapped stents.

The new coronarography revealed a very tight systolic coronary stenosis at the proximal edge of the stents (arrow), secondary to severe dynamic shortening of the LAD in an accordion-like fashion (Video 1 and 2).

No relationship with the respiratory cycle was observed, and no plaque or dissection was identified with intravascular ultrasound. We consider that our findings might be probably related to post-MI hyperdynamic basal systolic contraction against a fixed coronary stented segment (Video 3). Like shown in myocardial bridging¹, we believed that in our case ischemia might be driven by “intramural steal” or “branch steal”. Given her previous intolerance to small doses of beta-blockers, and the presence of severe angina during the angiography, another short overlapped stent was implanted (Video 4). Three months later the patient remains asymptomatic.

FIGURE LEGEND:

Figure 1: Panel A: During diastole no lesion was detected along the left anterior descending (LAD) coronary artery. **Panel B:** During systole a severe dynamic shortening of the mid LAD was observed, resulting in symptomatic lumen compression (arrow).

VIDEO LEGEND:

Video 1: LAO-Cranial (15° 30°) view.

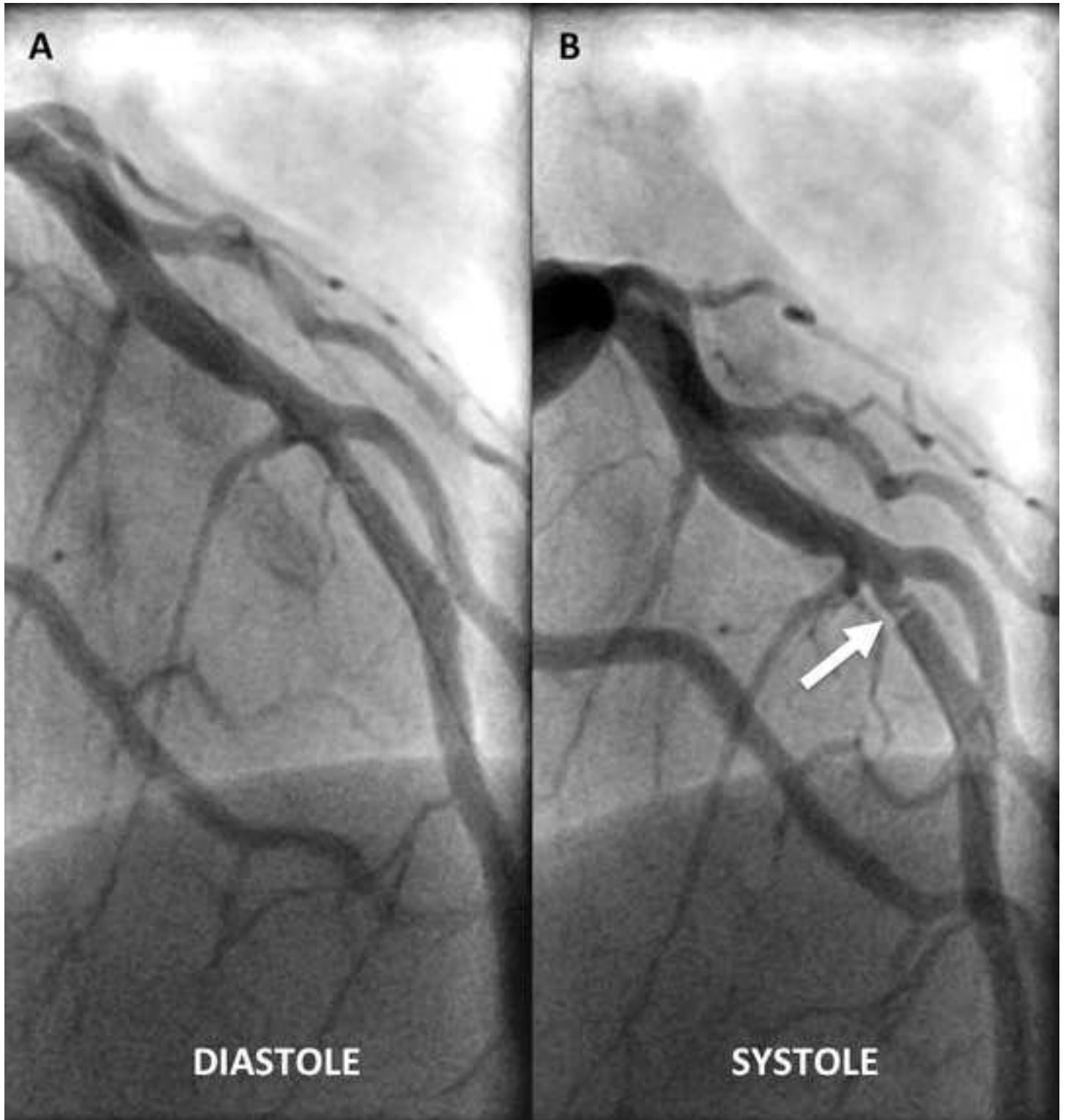
Video 2: PA-Cranial (0° 30°) view.

Video 3: Lateral (90°) view.

Video 4: Lateral (90°) view after stenting.

REFERENCES:

1. Tarantini G, Migliore F, Candemartiri F, Fraccaro C, Iliceto S. Left Anterior Descending Artery Myocardial Bridging. A Clinical Approach. J Am Coll Cardiol. 2016;68:2887-2899.





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