Is exercise always good for you? 
An arterial thrombosis due to excessive Crossfit exercise

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Disclosure

Speaker name: Samuel N. Steerman

I have the following potential conflicts of interest to report:

☒ Consulting – Medtronic, Bard/BD, Abbott, Penumbra
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
Background

CrossFit is recognized as one of the fastest growing modes of high-intensity functional training.

13,000 CrossFit locations worldwide.
Criticism

Two Cases of CrossFit®-Induced Rhabdomyolysis: A Rising Concern

5 cases of Rhabdomyolysis
A portion (30.5%) of the participants surveyed reported experiencing an injury over the previous 12 months because of their participation in CrossFit training.
Literature?

Impact of CrossFit-Related Spinal Injuries
Hopkins, Benjamin S., BSc.; Cloney, Michael B., MD, MPH†; Kesavabhotla, Kartik, MD†; Yamaguchi, Jonathon, BSc; Smith, Zachary A., MD†; Koski, Tyler R., MD†; Hsu, Wellington K., MD†; Dahdaleh, Nader S., MD†
Clinical Journal of Sport Medicine: November 16, 2017 - Volume Publish Ahead of Print - Issue - p

Case Report
Retinal Detachment due to CrossFit Training Injury
Stephanie A. Joondeph and Brian C. Joondeph

CrossFit-Associated Allergic Contact Dermatitis
Jennifer A. Ledon; Antonella Tosti

Figure 1: Elastic exercise band.
56 y.o. male who is an avid cyclist and Crossfit enthusiasts who developed coolness to his left hand while doing pull ups earlier today. He has had intermittent hand numbness in the past while cycling, which is reversible. He recall occasional Raynaud's type symptoms in the past.
**Physical Exam**

<table>
<thead>
<tr>
<th>Pulses</th>
<th>Right</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brachial</td>
<td>2+</td>
<td>2+</td>
</tr>
<tr>
<td>Radial</td>
<td>2+</td>
<td>Biphasic signal</td>
</tr>
<tr>
<td>Ulnar</td>
<td>2+</td>
<td>Biphasic signal</td>
</tr>
</tbody>
</table>

No decreased motor or sensory to hand

Slightly cool

Slight delayed capillary refill
Operative course

- Brachial arteriotomy with Fogarty catheter thrombectomy
- Angiogram – patent vessels with spasm
- Intra-arterial papaverine delivered, spasm improved
- Radial signals also improved with resolution of spasm
Post-operatively

Echocardiography is negative. Normal ejection fraction. No valvular abnormality. Negative bubble study.

CTA – no source of embolism

6 weeks of Rivaroxaban, then ASA
No recurrence at 18 months
What was he doing?

- He reports doing "Thrusters" and Pull-ups
  - 21 thruster, then 21 pull-ups
  - then 15 thrusters, then 15 pull-ups
  - then 9 thrusters, then could not complete his final 9 pull-ups due to forearm cramping
Conclusion

- Patient who practice high-intensity functional training can develop injuries related to the unique nature of the exercise.
- Radial and Ulnar artery thrombosis was found, in this case, to correlate with repetitive, high-intensity exercise with forearm contraction.
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