Author’s response to reviews

Title: May Thurner Syndrome revealed by left calf venous claudication during running, a case report.

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CORRECTIONS POINT-BY-POINT

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Dear Editor,

We would like to thank you for the reviewing of our manuscript entitled "May Thurner Syndrome revealed by left calf venous claudication during running, a case report". We appreciate the opportunity to be published in your journal promoting the link between vascular medicine, exercise physiology and field applications. We would like to warmly thank the reviewers for their constructive comments and the time spent undertaking their helpful revision. We have addressed all the major concerns raised by reviewers and have detailed our responses point-by-point.

Yours sincerely,

Samuel Béliard

REVIEWER 1

The manuscript however needs to be reviewed by a vascular physician for accuracy and the English, especially in the abstract, introduction, discussion and conclusion needs reviewing.

>>Thank you for this comment.
We tried to substantially improve the English throughout the document.

REVIEWER 2

Since the readers of BMC sports science have in general no background on vascular medicine you may improve the article by some more explanation.

>> Thank you for this remark.

In order to clarify within the manuscript we have tried to describe more definitions within the text so that the reader better understands specific terms used throughout vascular medicine (p2 lines 26 – 29 – 30 / p4 lines 15-16 – 29 / p5 lines 7-8 – 16 / p7 lines 1-5 – 20-24).

eg figure 1 Can you also add a figure with the normal situation and explain the difference
also figure 2 Can you also add a figure with the normal situation and explain the difference

>> Thank you for this important aspect, which was not included in the previous version of the manuscript. The presentation of normal and pathological conditions has been included within the figures and we hope this will help the reader better visualize and understand the importance of anatomical variations in the context of the MTS.

page 2 line 45 can you describe the venous drainage position in more detail

>> Thank you for that useful comment. We have included more details and referenced another manuscript to explain the venous drainage position as suggested by the reviewer: “Often this involves elevating the lower limbs to 45 ° relative to horizontal when in the supine position (Le Roux P. et Planchon B. 1994)”


page 7 and figure 3 I think you can explain it a bit better and leave room for overlap. This will add the clinical usefullness of the article.

maybe first step does it appears at exercise and disappaear at rest.

second step relief after venous drainage (no = suspect for arterial disease yes suspect for compartment and posttrombotic)

second step diiferentiation compartment syndrome -post trombotic syndrome end potentially also overlap (posttrombotic also swelling and location of pain) potentially there is overlap since venous obstruction may increase compartment pressures.

>> Upon reflection we fully understand the reviewer and agree that our reasoning was incomplete.
To achieve clarity and accuracy, we have entirely rewritten this section (p8, lines 7-31) and we redrew the decision tree (Figure 3):

- “Medical history: a history of venous thromboembolism, acute symptoms (left proximal DVT), chronic symptoms (post thrombotic syndrome PTS, recurrent DVT, venous claudication, unilateral varicocele (Bomalaski et al. 1993)). PTS is defined by the presence of symptoms (pain, heaviness, pruritus) and/or chronic venous signs (C1 – C6 of CEAP (Clinical, Etiologic, Anatomic, Pathophysiologic) classification: telangiectasia, reticular veins, varicose veins, edema pigmentation, eczema, lipodermatosclerosis, white atrophy, venous ulcer) secondary to lower limb deep venous thrombosis (Galanaud 2015).

- Clinical: With MTS, pain is mainly located in the calf. This pain is deep and constrictive. It appears during exercise and disappears at rest. Unlike arterial claudication, MTS pain does not yield immediately after activity and is relieved by assuming a venous drainage position. All characteristics of this pain often mirror those of chronic exertional compartment syndrome (Joubert et Duarte 2016). To differentiate both entities, a compartment pressure test must be carried out. Sometimes, more than one aetiology for exertional leg pain can coexist in an athlete (Garlanger et al. 2016).

- Hemodynamic: Doppler ultrasound Duplex ultrasound scan (Labropoulos et al. 2007) (PTS with analysis of the reflux, compressive syndrome with asymmetry respiratory modulations, venous stenosis), +/- plethysmography (evaluation of reflux) +/- intravenous ultrasound (Ahmed et Hagspiel 2001) (intra luminal damaged, pretreatment evaluation) needs to be performed and must involve specific evaluation of the respiratory modulation of venous flow bilaterally.

- Morphological (Donatella et al. 2015) (angio TDM CTA +/- angio MR +/- venography): Evidence of compression, more highly developed collatorally, the presence or absence of thrombosis and intra luminal spurs.”

The treatment was done with venous stenting.

page 7 line 45-46. Please explain a bit more the benefits and risks at the long term. How long are the patency rates ..., how long is anticoagulation necessary. IN the current wording potentially you are over optimistic concerning benefits and risks.

>> Thank you for this insightful comment as this was not clear within the first manuscript. To clarify we have included literature and data related this patency and other treatments required. This is described below:

“The main risk of this therapeutic management is recurrence. However, medium- and long-term patency have been evaluated and are highly in favor of treatment (Knipp et al. 2007) with primary patency rates of 74.1% at 1 year (SE, 6.3%) and 38.1% at 60 months (SE, 12.4%); and secondary patency rates of 85.8% at one year (SE, 5.0%) and 73.8% at 60 months (SE, 9.7%).
There is no consensus concerning the duration of platelet therapy after the surgical procedure. In our practice, we continue this treatment after the first year by re-evaluating the risk benefit ratio.”