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ECR 2025 / C-21580

Ultrasound assessment of the posterior tibial tendon in horse riders

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Authors:

J. Martinho, L. P. V. Ribeiro, S. I. Rodrigues, A. Abrantes, B. Vicente, J. Pinheiro

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Purpose

The issue centers on posterior tibial tendon (PTT) injuries in equestrians, caused by physical strain leading to tendon alterations. Ultrasound, a non-invasive technique, is essential for detailed musculoskeletal injury evaluation. The PTT connects the posterior tibial muscle to the ankle, stabilizing the foot's arch and guiding movement. Injuries, common in show jumping, stem from overuse, trauma, biomechanical misalignment, or ankle stiffness. This study aims to assess PTT changes like tendon thickness and calcification in equestrians using ultrasound, comparing results with non-equestrian controls.

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Methods and materials

This study is quantitative and focuses on imaging changes in the PTT. It uses a descriptive-correlational approach to analyze ultrasound data with sample variables. The research was conducted in the Laboratory of ultrasonography at the School of Health, University of Algarve, Gambelas Campus, Faro. The target population consisted of equestrians specializing in dressage and show jumping. Inclusion criteria for the study group required participants to have practiced equestrian activities for at least five years, three to five times per week. The sample included 50 participants aged...

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Results

A total of 50 posterior tibial tendons were assessed, 25 from the control group and 25 from horse riders, of which 31 were female and the remaining 19 male. The patients' ages ranged from 18 years (minimum) to 43 years (maximum), with a mean age of 24.74 years and a median of 22 years with a standard deviation of 6.963 years. The female gender was predominant in both the study group of non-riders and riders of dressage or obstacles. None of the fifty subjects in the...

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Conclusion

About the significant results of this study, intriguing data on the thickness of the PTT was identified, revealing a convincing correlation in the group of horseback riders, in agreement with the established literature. The results reveal a significant difference in

tendon thickness in various parameters between the group of horse riders and the control group. The discernible trend towards increased tendon thickness in the horse-riding group, especially among dressage, highlights the potential influence of sport-specific activities on tendon morphology. This knowledge could have implications not only...

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Personal information and conflict of interest

J. Martinho: Nothing to disclose L. P. V. Ribeiro: Nothing to disclose S. I. Rodrigues: Nothing to disclose A. F. C. L. Abrantes: Nothing to disclose B. Vicente: Nothing to disclose J. Pinheiro: Nothing to disclose

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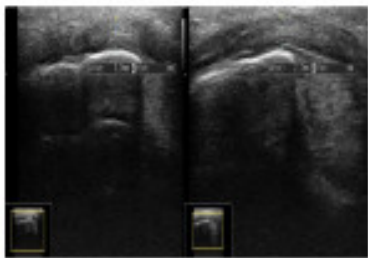


Figure 1 - Ultrasound images in longitudinal section of the measurement of the posterior tibial tendon thickness.
Source: Author, JCS

Fig 1

Table 1 - Descriptive statistics to see which groups had statistically significant differences in the measurement of the posterior tibial tendon

Dependent variable	At-risk group	Control group	Mean difference (d)	p-value
Right posterior tibial tendon thickness (mm)	Group: position	Posterior tibial tendon	0.07	0.000
	Not control group		0.00	0.000
	Posterior tibial tendon	Group: position	-0.07	0.000
	Not control group		0.00	0.000
Left posterior tibial tendon thickness (mm)	Group: position	Posterior tibial tendon	0.07	0.000
	Not control group		0.00	0.000
	Posterior tibial tendon	Group: position	-0.07	0.000
	Not control group		0.00	0.000

Table 2

Table 2 - Mean values (mm)

	Right posterior tibial tendon (mm)	Left posterior tibial tendon (mm)
1st Run (mm)	27.50	27.50
Mean IV	48.50	50.00
I	-3.00	-3.00
Agreement by 3 rats	3.00	3.00

Table 3