

Relationship between saddle pressure measurements and clinical signs of saddle soreness at the withers

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Objective

Local high pressure points caused by non-fitting saddles induce perfusion disturbances of different degrees resulting in alteration in sweat production up to pressure ulcers.

The aim of this study was to relate the different clinical manifestations of saddle soreness to the magnitude of saddle pressures at the location of the withers.

Materials and Methods

Horses: Patients presented to the Equine Hospital between 2006 and 2009 with different clinical signs of saddle soreness at the withers were compared to a healthy control group.

Group A: 17 horses with dry spots at the withers after riding and muscle soreness in this area (Fig.1).

Group B: 7 horses with signs of saddle sores. The respective area was warm, swollen and painful.

Group C: 17 healthy horses with no back and saddle problems.

Protocol: Horses were examined orthopaedically with emphasis to the back. Saddle pressure was measured at walk, trot and canter (Pliance X, Novel GmbH, Munich). Horses were ridden by their own rider.

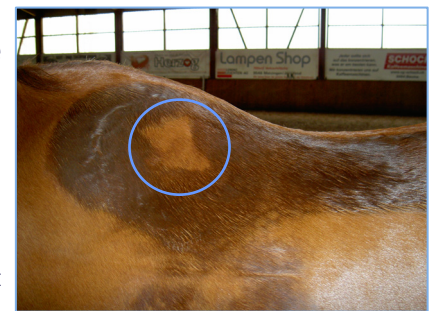


Fig.1: Horse with a dry spot at the withers.

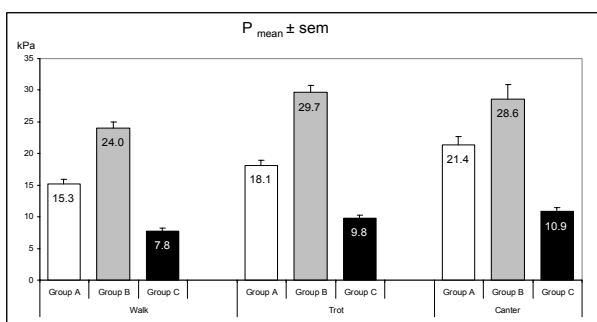
Data Analysis & Statistics: Mean and maximal pressures in the area of interest were compared between groups in each gait. In group C the pressure of a rectangle of 4 sensors (37.5cm²) on both sides at the respective location at the withers was chosen as reference.

Groups were compared with a 1-way ANOVA or a non-parametric equivalent. Statistics were done with SigmaStat 3.5. Significance level was set to P=0.05.

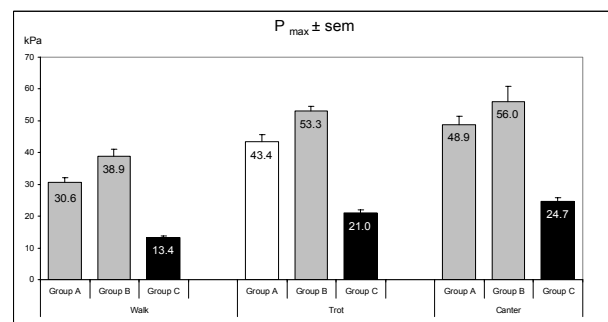
Results

Fig.2:

The different colours indicate significant differences between the groups within each gait. Group A: Horses with dry spots. Group B: Horses with saddle sores. Group C: Control group.



a) Mean pressure (kPa) of the area of interest at the withers: All groups differed significantly from each other in all gaits.



b) Maximal pressure (kPa) of the area of interest at the withers: At trot the three groups differed between each other, whereas at walk and canter only group C differed significantly from group A and B, respectively.

Conclusion and Clinical Relevance

Based on mean and maximal pressure values, the 3 groups could be clearly distinguished from each other. The clinical appearances of saddle soreness of group A and B were closely pressure related. Dry spots can be seen as an early stage of saddle sores.

The threshold values of tolerated or harmful saddle pressure can be used as a guideline when assessing saddle fit in practice.

Horses change their body condition with training and saddle panels alter their shape over time due to compression, therefore the assessment of saddle fit has to be repeated periodically. Riders have to be sensitised, that dry spots in the saddle area are a serious hint for an ill fitting saddle.