Abstract

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Title: The influence of foot position on the size of the Q angle in patients with painful knee joint syndromes

Objectives: This master thesis aims to assess the effect of the foot on the position of the knee joint, particularly whether the degree of flat-footedness affects the Q angle and whether an active foot correction can change this angle. Furthermore, this thesis aims to compare whether painful knee joint syndromes affect these parameters in any way.

Methods: A group of 40 probands with a total average age of 27 years and a unilateral painful knee joint syndrome, at least 6 months apart from incidental injuries/surgeries, underwent a complex clinical examination with a focus on the researched aspects associated with knee joint problems. This was followed by the making of a plantogram -- an examination of the pressure distribution of the foot by a machine from the company Pedikom, taking a photograph to evaluate the Q angle and the orientation of the talus position, complementing the qualitative evaluation of the sole image. An active correction of the foot position was then performed along with a simple exercise to support the longitudinal arch of the foot by activating the myofascial chains associated with it. The two examinations were then repeated. The evaluation of the Q angle was done with the software Scodiac, the qualitative evaluation of the barometric image of the plantogram was supplemented by a calculation of the foot arch index Chippaux - Šmiřák. The static analysis was done with the software RStudio.

Results: It was confirmed, that an active correction of the sole has a statistically significant effect on the size of the Q angle, which means, that a correction of the sole through an activation of the myofascial chains may, to a certain extent, correct the size of the Q angle. A significant effect of the degree of flat-footedness on the size of the Q angle or the presence of an increased degree of flat-footedness and a larger size of the Q angle in the lower limb with painful knee syndrome was not statistically proven.

Conclusion: The effect of an active correction of the sole using myofascial chains on the position of the knee joint was confirmed. The association between an excessive Q angle size and the degree of flat-footedness with the occurrence of painful knee syndrome wasn't established.

Keywords: flat feet, pes planus, fallen arches, knee joint pain, myofascial chains, plantogram