

Abstract:

The thesis examines the relationship between the level of intra-abdominal pressure and abdominal wall expansion. The theoretical part brings an overview of knowledge about the function of intra-abdominal pressure and about the possibilities of objectification of postural functions. There are described studies which dealt with the influence of intra-abdominal pressure on the stability of spine. Theoretical part also includes detailed description of individual invasive and non-invasive methods of measurement of intra-abdominal pressure and activation of abdominal muscles.

Work methodology: In the practical part the intra-abdominal pressure was measured using anorectal manometry and abdominal wall expansion by utilizing DNS brace device. 31 healthy examinees with average age of 26.77 (SD 3.01) were measured in five different standing postural situations: during resting breathing, Valsalva Maneuver, Müller's maneuver, diaphragm test and in the situation with added external load in the form of static holding of dumbbell.

Results of the thesis: Among the values of the pressure gathered from the DNS brace device and from anorectal manometry was proven statistically important correlation ($p < 0.001$) in all five tested situations. In all situations the Pearson Correlation Coefficient was higher than 0.6 which means that the correlation of values was very strong. The strongest correlation was shown by the last situation, static holding of dumbbell and the lowest by Müller's maneuver.

Conclusion: It was proven that during the increase of intra-abdominal pressure occurs proportional abdominal wall expansion in places above the inguinal ligament and in the area of trigonum lumbale superius. So it was proven that by palpation in those areas we can indirectly assess the level of intra-abdominal pressure.