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Change in the activity of the upper and lower esophageal sphincter during changes in respiratory and postural conditions

Abstratct:

Background
The upper and lower esophageal sphincter are essential units of the gastrointestinal ract. The upper esophageal sphincter (UES) is formed from the cricopharyngeus muscle and in the area of the lower esophageal sphincter (LES) it is the diaphragm.

Question: Is it possible that the functions of the esophageal sphincters can affect the disorders and functions of the motor system?

Purpose: Is it possible to influence and treat dysfunctions of these sphincters with rehabilitation methods and techniques other than diaphragmatic breathing?

Method: The group of 62 patients (20-77 years). Patients were subjected to a functional esophageal examination using High resolution manometry.

Sphincter activity was measured during: triple flexion of the lower extremities, manual stabilization of the chest and traction of the cervical spine.

Results: During triple flexion of the lower limbs above the mat during simultaneous manometric probing, there is a significant increase in pressure in both esophageal sphincters. During manual caudalization of the chest, there is a decrease in tone in the area of the UES and an increase in pressure in the area of the LES. During manual therapeutic traction of the cervical spine, there is a significant decrease in the UES area and a statistically significant increase in pressure in the LES area.

Summary: The results show that the change in postural and respiratory conditions leads to significant changes in the area of both esophageal sphincters.Given the significant influence of these rehabilitation techniques, it is possible to postulate that rehabilitation can lead to the treatment of some functional disorders of the GIT.

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Biography:

Dr. Petr Bitnar is an experienced physiotherapist and academic specializing in rehabilitation, kinesiology, and the interplay between respiration, posture, and esophageal function. He earned his master's degree in Physiotherapy from Charles University, Prague, in 2007. He later completed a doctoral degree in Kinanthropology in 2018, followed by a PhD in Rehabilitation and Kinesiology in 2022. His dissertation focused on "Respiration and posture influence on the activity of upper and lower esophageal sphincters."

Since 2007, Dr. Bitnar has served as a specialist physiotherapist at University Hospital Motol in Prague and has been an active educator at the Faculty of Medicine, Clinic of Rehabilitation and Sports Medicine.

Since 2009, he has also worked as an international lecturer, delivering physiotherapy training courses worldwide, including in the USA, Taiwan, Australia, Chile, India, South Korea, and other countries. His teaching topics include myofascial pain syndrome, viscerosomatic relationships, and viscerofascial manipulation.

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