

The quantitative microscopical modifications of the diaphragm and the periesophageal anatomical structures in hiatal hernias. Clinical correlations

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Abstract

In the last decade has seen an increase in hiatal hernia diagnosis. These issues led us to study and deepen the anatomic substrate of the changes that occur in the diaphragm muscle and periesophageal structures for optimum management of the disorder. The studied material was represented by fragments of the thoraco-abdominal diaphragm and tissues around the esophagus, biopsy sampling by classic open approach or celios-copic in patients with hiatal hernia, compared with a control group. Histological processing was carried out by current or special methods. After qualitative examining of the selected structures, quantification was performed using an interactive digital program. In the adult diaphragm with hiatal hernia was found in percentage volume reduction pillar of the diaphragm muscle fibers, increased the percentage of vascular lumina in the muscle portion of the crura, while the percentage volume of interstitial spaces increase. The changes of the percentage volume of connective tissue are significant, both crura suffering a fibrous transformation of muscle portions. Microanatomic changes are their quantitative objectivity suggest loss of elasticity and reduced functional capacity of diaphragm muscle in hiatal hernias.

Key words: diaphragm muscle, hiatal hernia, quantitative methods, periesophageal structures

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