

Changes of esophageal and lower esophageal sphincter length in gastroesophageal reflux disease

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Author contributions: All authors contributed equally to the work.

Original title: *China National Journal of New Gastroenterology* (1995-1997) renamed *World Journal of Gastroenterology* (1998-).

Received: August 11, 1995

Revised: January 21, 1996

Accepted: July 19, 1996

Published online: September 15, 1996

Abstract

AIM: We want to define the changes of esophageal and lower esophageal sphincter length and to research the mechanism of gastroesophageal reflux disease (GERD).

METHODS: We used manometry system to measure intraluminal pressure on 63 normal cases and 53 GERD cases with 4 lumen tube assembly in the esophagus, to record the esophageal length from nose to respiration reverse point, the length of LES and the tummy length of LES. The 4 lumens had side opening tips 5 cm apart and perfused with distilled water at a constant rate of 0.6 mL/min.

RESULTS: (1) The length of LES in normal young, middle aged group and old aged group was 2.79 ± 0.53 cm, 2.84 ± 0.64 cm, 3.08 ± 0.49 cm, respectively ($P > 0.05$); The tummy length of LES in 3 groups was 2.00 ± 0.47 cm, 2.03 ± 0.66 cm, 2.23 ± 0.72 cm, respectively ($P > 0.05$); (2) The length of LES in normal group and GERD group was 2.87 ± 0.33 cm, 0.46 ± 0.67 cm, respectively ($P < 0.001$). The tummy length of LES in normal group and GERD group was 2.06 ± 0.61 cm, 0.63 ± 0.43 cm ($P < 0.001$). (3) The related coefficient between esophageal length and body length in normal group and GERD group was 0.6997 and 0.798, respectively ($P < 0.001$).

CONCLUSIONS: (1) In normal group LES length is not changed with age. (2) LES length and tummy LES length are obviously decreased in GERD group. But esophageal body length is not shortened in GERD group.

Key words: Gastroesophageal reflux disease; Lower esophageal sphincter

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Zou L, Zhao JX, Zhao JT. Changes of esophageal and lower esophageal sphincter length in gastroesophageal reflux disease. *World J Gastroenterol* 1996; 2(Suppl1): 173 Available from: URL: <http://www.wjgnet.com/1007-9327/full/v2/iSuppl1/173.htm> DOI: <http://dx.doi.org/10.3748/wjg.v2.iSuppl1.173>

E- Editor: Liu WX



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