



Comparison of the lower esophageal sphincter in healthy young and elderly subjects

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Abstract

AIM: Previous studies have shown that resting lower esophageal sphincter (LES) pressure and length of the intra-abdominal (IAL) segment of the LES are important factors in competency of gastroesophageal reflux barriers. However, the effect of aging on this

barrier has not been systematically studied. The aim of this study was to determine what differences exist in the gastroesophageal reflux barrier between healthy young and elderly subjects.

METHODS: We studied 10 healthy young (mean age 33 ± 1.8 years) and 8 healthy elderly volunteers (mean age 74 ± 1.5 years) in supine position after overnight fasting. Manometry was performed according to the "rapid pull-through" (RPT) and "station pull-through" (SPT) technique and withdrawn from the stomach back into the esophagus at 0.5 cm increments every 10 s. A pneumograph was used concurrently and recorded at 10 mm/s. The total length (TL), intra-abdominal length (LAT), intra-thoracic length (ITL), and ratio of IAL to ITL were measured.

RESULTS: A comparison of the measurements of LES length between young and elderly are shown in Table 1.

CONCLUSIONS: (1) In both young and elderly, TL is similar; (2) IAL is shorter in healthy elderly subjects, the ratio of IAL to ITL was decreased in elderly compared to that of the young, possibly due to age-related physiologic changes. These finding may partially explain why GER is common in the elderly.

Key words: Elderly; Esophageal manometry

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Table 1 Lower esophageal sphincter length (CM) Mean \pm SE

	TL(RPT)	LT (SPT)	IAL	ITL	Ratio IAL/ITL
Elderly ($n = 8$)	3.3 ± 0.16	3.1 ± 0.24	1.3 ± 0.13	1.8 ± 0.20	0.8 ± 0.13
Young ($n = 10$)	3.6 ± 0.16	3.7 ± 0.19	2.4 ± 0.17	1.3 ± 0.06	1.9 ± 0.15
P value	> 0.05	> 0.05	< 0.01	> 0.05	< 0.01

TL: Total length; RPT: Rapid pull-through; SPT: Station pull-through; IAL: Intra-abdominal length; ITL: Intra-thoracic length



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