

## Potential significance of midgastric transverse band and its relationship with gastric emptying in healthy subjects and functional dyspepsia

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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: November 1, 1995

Revised: January 21, 1996

Accepted: August 19, 1996

Published online: September 15, 1996

### Abstract

**AIM:** Although the existence of midgastric transverse band (MTB) has been described for many years, its physiological and pathophysiological roles remain unclear. The aim of this study was to explore the physiological significance of MTB and its relationship with gastric emptying in healthy subjects (HS) and patients with functional dyspepsia (FD).

**METHODS:** Eight HS ranging from 23-60 years and 19 cases of FD ranging from 15-78 years were investigated. A solid test meal consisting of fried EGG (490 Kcal, C:P:F = 4:1:5) labeled with 300  $\mu$ ci  $^{99m}$ Tc-Sc was used and images were taken by ECT for 150 min after meal. The regions of interest of total, proximal and distal parts of the stomach were drawn according to MTB when antrum had a

maximum filling.

**RESULTS:** The existence of MTB could be observed satisfactorily in all HS and FD by ECT imaging technique. (1) The percentages of gastric content remaining in total and proximal stomach at 150 min after meal were  $18.0\% \pm 8.0\%$ ,  $14.0\% \pm 7.3\%$  in HS, and  $41.3\% \pm 23.9\%$  ( $P < 0.01$ ),  $30.9\% \pm 18.5\%$  ( $P < 0.01$ ) in FD, respectively. (2) Lag phase and T1/2 were  $43.5 \pm 9.5$  min and  $44.9 \pm 13.4$  min in HS and  $60.9 \pm 24.4$  min ( $P < 0.01$ ) and  $73.9 \pm 29.8$  min ( $P < 0.01$ ) in FD, respectively. (3) The width of MTB was  $7.9 \pm 2.4$  cm in HS and  $11.3 \pm 4.7$  cm in FD ( $P < 0.05$ ). (4) The width of MTB was closely related to total gastric emptying ( $R = 0.63$ ,  $P < 0.01$ ) in HS but not in FD. (5) A very stable distribution pattern was found from 15-120 min during gastric emptying in healthy subjects but not in FD.

**CONCLUSIONS:** (1) MTB could be clearly demonstrated by ECT imaging technique. MTB may be a physiological functional maker in dividing the stomach into the proximal and distal. (2) MTB plays as a functional band in regulation of gastric emptying in HS, its dysfunction may be one cause of gastric dysmotility in functional dyspepsia.

**Key words:** Midgastric transverse band; Gastric emptying; Functional dyspepsia

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Gu CM, Ke MY, Zhu ZH, Chen LB, Li F. Potential significance of midgastric transverse band and its relationship with gastric emptying in healthy subjects and functional dyspepsia. *World J Gastroenterol* 1996; 2(Suppl1): 145 Available from: URL: <http://www.wjgnet.com/1007-9327/full/v2/iSuppl1/145.htm> DOI: <http://dx.doi.org/10.3748/wjg.v2.iSuppl1.145>

E- Editor: Liu WX



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