

THE EFFECT OF LAPAROSCOPIC ADJUSTABLE GASTRIC BANDS ON THE OESOPHAGUS AND GASTRO OESOPHAGEAL JUNCTION

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Background

Laparoscopic adjustable gastric bands (LAGB) are a safe and effective treatment for obesity. Conflicting data exists concerning their effect on the oesophagus, gastro-oesophageal junction and mechanism of action. These patients will increasingly require accurate assessment of their esophageal function.

Methods

27 LAGB patients underwent high resolution video manometry with the LAGB empty, 20% under, 20% over and at their optimal volume. 40 obese controls were also studied. Effects on oesophageal motility, the lower esophageal sphincter (LOS) and the gastro-esophageal junction were measured. Transit during liquid and semi-solid swallows was assessed.

Results

LAGBs produce a mean intraluminal pressure of 26.9 (19.8) mm Hg beneath the LES. This varies with the volume within the LAGB. The LES was attenuated compared to controls (10 mm Hg vs 18 mm Hg $p<0.01$) although relaxed normally. Esophageal motility was well preserved at optimal volume compared to 20% overfilled with 77% normal swallows vs 51% $p=0.008$. Repetitive esophageal contractions were observed in 40% of contractions at optimal volume compared to 16% in controls, $p=0.024$. In comparison to controls transit of liquid 21 seconds vs 8 seconds ($p<0.001$) and semisolids 50 seconds vs 16 seconds ($p<0.001$) was delayed.

Conclusions

In LAGB patients the LES is attenuated although relaxes normally. Esophageal motility is preserved although disrupted by overfilling the band. In the optimally adjusted LAGB a delay in transit of liquids and semi-solids through the esophagus and band is produced, along with an increase in repeated esophageal contractions.