Effect of radiofrequency ablation on gastric dysrhythmias in patients with gastroesophageal reflux disease (GERD) and functional dyspepsia

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Gastric neuromuscular dysfunction has a role in GERD and in functional dyspepsia symptoms. Gastric dysrhythmias have been recorded in patients with dyspepsia who also have GERD. Radiofrequency ablation (RFA) is used to treat GERD and may work by ablating vagal sensory neural pathways. The AIM of this study was to determine the effect of RFA treatment of the lower esophageal sphincter/cardia region on 1) gastric myoelectrical activity and 2) gastric capacity in patients with GERD plus dyspepsia (GERD+). METHODS: 45 patients (32 women and 13 men, ages 19-78 yr.) referred to a community-based GI practice for refractory GERD underwent endoscopy and electrogastrogram (EGG) with water load tests (WLT) prior to RFA (Stretta procedure). Endoscopies showed Grade 1 esophagitis or normal mucosa. EGG with water load test was performed in standard fashion and diagnoses (bradygastria, tachygastria, mixed dysrhythmia or normal) were made on the basis of EGG rhythm strips and computer analysis. RESULTS: Stretta procedure was performed successfully in each of the 45 patients. Pre-procedure EGG diagnoses were: tachygastria in 47%, bradygastria in 11%, mixed dysrhythmia in 15% and normal in (12/45) 27%. The EGG with WLT was repeated 7.3 months after the RFA treatment. Post-procedure diagnoses were: tachygastria in 31%, bradygastria in 4%, mixed dysrhythmia in 14% and normal in (23/45) 51% ($P<0.03$). Overall, 36% of the patients with baseline gastric dysrhythmias converted to normal EGG patterns after RFA. Tachygastrias were most affected by RFA with normalization in 9/21(43%). Normal baseline EGGs were found in 12 patients and remained the same in 11/12 (92%) patients after RFA; one patient (8%) had a tachygastria after RFA. Pre-procedure WLT volume was 444 +/- ml and post-procedure volume was 389 +/- ml ($P<0.01$). CONCLUSIONS: 1) Gastric dysrhythmias converted to normal 3 cpm rhythms in about 1/3 of patients with GERD+ after RFA procedure; 2) Tachygastrias appear most susceptible to RFA treatment; and 3) Decreased gastric capacity for water loading suggests RFA-induced changes in gastric compliance. In a subset of GERD + patients RFA represents a new treatment modality for gastric dysrhythmias.