

Electrogastrography Accurately Detects Functional Gastric Outlet Obstruction with Associated Gastroparesis: Results of Detection and Resolution of Abnormalities by Balloon Dilation of Pylorus.

Increase in normal 3 cycles per min (3cpm) activity in the electrogastrogram (EGG) patterns has been reported in gastric outlet obstruction. The etiology of gastroparesis is frequently not evident. Patients with idiopathic gastroparesis often have gastric dysrhythmias such as increased 3cpm activity, bradygastria or tachygastria. Aims: 1) To determine the incidence of increased 3cpm EGG activity in patients with idiopathic gastroparesis, 2) To determine the effect of balloon dilation of the pylorus on EGG activity, gastric emptying and symptoms. Methods: Between July 2000 and July 2004, 265 subjects with dyspepsia, underwent standardized EGG with water load testing and solid phase nuclear gastric emptying studies (NGES). Patients with elevated 3cpm EGG activity, consistent with gastric outlet obstruction, and abnormal NGES underwent 2 minute, pyloric dilation with a 20 mm TTS balloon by a single operator. 2-6 months post-dilation the EGG and NGES were repeated, and results were compared to a previously established normal patient group. Results: Of 265 subjects evaluated, 65(24.5%) of subjects had delayed gastric emptying. 40 of 65 patients (61.5%) had high amplitude sustained 3cpm activity before and after the water load test, suggestive of gastric outlet obstruction. Endoscopically, the pylorus was normal and permitted passage of a standard 8.3 mm endoscope. No complications occurred post-dilation. After dilation, the 3cpm EGG activity changed. The percentage of 3cpm EGG activity at baseline before dilation was increased at 62.6% compared with after dilation (42.8%, $P=0.12$). The percentages of 3cpm activity at 10 and 20 min after the water load were 68.4% and 64.8% before pyloric dilation, and decreased significantly after dilation to 25.8% and 38.2%, respectively ($P<0.01$). The NGES showed normalization of emptying after dilation. The percentage of meal emptied at 60 min and 120 min was 15.0% and 39%, respectively, before dilation, and improved significantly after dilation to 48% and 80.0%, ($P<0.01$). Symptoms of post-prandial bloating and early satiety resolved and remained controlled at a mean follow-up of 36 months (4-48 months). Conclusions: In a subset of patients with increased 3cpm EGG activity, gastroparesis, and dyspepsia: 1) EGG is a useful tool to identify functional pyloric outlet obstruction, 2) Gastroparesis with EGG diagnosed functional pyloric outlet obstruction responds to pyloric balloon dilation, and 3) Dilation results in normalization of EGG abnormalities, delayed gastric emptying, and symptoms.