
4.16. Stepwise radiofrequency ablation of Barrett's esophagus preserves esophageal inner diameter, compliance, and motility

H. Beaumont, J.J. Gondrie, B.P. McMahon, R.E. Pouw, H. Gregersen, J.J. Bergman, G.E. Boeckstaens

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Background & Aims: Stepwise endoscopic circumferential and focal radiofrequency ablation is safe and effective for the eradication of Barrett's esophagus. In contrast to other techniques, radiofrequency ablation appears to avoid significant esophageal scarring or stenosis. Our aim was to evaluate whether radiofrequency ablation has an adverse effect on esophageal function in patients treated for Barrett's esophagus containing intramucosal cancer and/or high grade dysplasia.

Methods: Twelve patients with Barrett's esophagus containing intramucosal cancer or high grade dysplasia were included in the study. After endoscopic resection of visible abnormalities, stepwise circumferential and focal ablation were performed every 2 months up to a maximum of five sessions. Measurement of the inner diameter was performed at 1-cm intervals in the distal esophagus. Manometry was performed using a water perfused sleeve catheter. Compliance was evaluated using the functional lumen imaging probe (FLIP), measuring eight cross-sectional areas within a saline filled bag with two pressure side holes, one proximal to and one inside the bag. Esophageal sizing, manometry, and compliance were recorded in patients at baseline and at least 2 months after the final ablation session. In addition, FLIP and manometry measurements were performed in 10 healthy volunteers.

Results: All patients achieved complete eradication of dysplasia and Barrett's esophagus, without severe complications or ablation related stenoses. The esophageal diameter was unchanged by the ablation. Lower esophageal sphincter pressure and length and esophageal contraction amplitude before and after ablation were not significantly different. Baseline compliance was significantly different between healthy volunteers and Barrett's esophagus patients. Compliance was not, however, significantly changed by ablation.

Conclusions: Stepwise circumferential and focal ablation of Barrett's esophagus is an effective and safe treatment modality for early Barrett's neoplasia that appears to preserve the functional characteristics of the esophagus.