Barrett's Esophagus Eradication with Radiofrequency Ablation Dependent on Length of Barrett's Segment

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Abstract

Objectives: Radiofrequency ablation (RFA) is an effective and proven therapeutic treatment modality for Barrett’s esophagus (BE), with complete eradication rates upwards of 80%. We aim to investigate factors that may contribute to failure of eradication among patients undergoing RFA for treatment of dysplastic BE.

Methods: A retrospective review of patients undergoing RFA for treatment of Barrett’s was performed. Data including patient demographics, medical history, maximum Barrett’s esophagus (cm), number of RFA sessions, and pre and post histopathology was collected and analyzed. Based on results of endoscopic mucosal biopsy, histopathology was then divided into complete eradication (CE) of dysplasia (CE – D) or intestinal metaplasia (CE – IM). Subsets of patients achieving complete eradication were compared with those not achieving CE. Patients were considered lost to follow-up if post-treatment biopsies were not obtained.

Results: A total of 71 patients (mean age 64 - 13 years) underwent RFA for BE, the majority white (85%), overweight (mean BMI 29.6), and male (85%). Of 61 records, 52 patients (85%) had a history of gastroesophageal reflux. Before treatment, 43 patients (61%) had low-grade dysplasia (LGD), and 28 patients (39%) had high-grade dysplasia or carcinoma (HGD). 12 patients (17%) were lost to follow-up. CE ? IM was achieved in 63% of patients (60% of HGD and 65% of LGD cohorts). CE ? D was achieved in 81% of patients (72% of HGD and 88% of LGD cohorts). Failure of eradication was experienced in 19% of patients (28% of HGD and 12% of LGD cohorts). The average number of RFA treatments in patients achieving CE was 4.0 ? 2.3 sessions, while the average was 4.5 ? 1.8 sessions for patients with failure of eradication (p = 0.55). The maximum-length of BE was recorded as the length between the top of gastric folds to the top of intestinal metaplasia (cm). Overall, the average maximum-length of BE in patients achieving CE was 5.5 ? 4.4 cm compared to patients not achieving CE was 7.3 ? 5.8 cm (p = 0.21). On multiple logistic regression, Barrett’s length > 6 cm [OR: 21.5; SE 0.56; p=0.006], history of GERD [OR: 7.2; SE 0.49; p=0.042], and no prior tobacco history [OR: 33.3; SE 0.59; p=0.003] were all significant predictors of CE. Undergoing less than 4 RFA procedures trended toward significance [OR: 7.66; SE: 0.53; p=0.053].

Conclusions: RFA for dysplastic BE is a proven and effective treatment modality, associated with a high rate of complete eradication. Our rates of eradication from a center starting an ablation program are comparable to previously published studies. Length of Barrett’s segment > 6 cm was found to be predictive of failure of eradication in patients undergoing RFA.