Expert Commentary: Surveillance Versus Ablation for Patients with Low-Grade Dysplasia

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An estimated 25–40% of patients with Barrett's esophagus (BE) will be diagnosed with low-grade dysplasia (LGD) at some point in their lifetime [1]. Progression to high-grade dysplasia (HGD) or esophageal adenocarcinoma (EAC) is difficult to quantify but may occur at a rate of up to 13.4% per person-year [2]. Identifying those at risk for malignant transformation is challenging, partly because the diagnosis of LGD is difficult. A high degree of interobserver variability exists between pathologists [3], which has significant clinical implications. One report revealed that 85% of patients previously diagnosed with LGD were downgraded to non-dysplastic BE after evaluation by an expert gastrointestinal pathologist [2]. This underscores the importance of expert consultation to establish a firm diagnosis before proceeding with treatment.

Prior to the development of ablation therapy, patients and physicians lacked suitable treatment options for LGD and therefore adhered to a strict regimen of endoscopic surveillance [4]. Although this remains a viable option, endoscopic ablation technology has expanded the management of LGD by allowing for eradication of dysplastic mucosa, thereby minimizing the chances of carcinogenesis. Of the various ablation techniques available, radiofrequency ablation (RFA) has emerged as the most common and best-studied modality. A growing body of evidence supports RFA as a safe, effective, and durable treatment for LGD.

Among the most compelling evidence for RFA in patients with LGD is the AIM Dysplasia trial – a multicenter, randomized, sham-controlled trial that compared RFA plus endoscopic surveillance to endoscopic surveillance alone in patients with dysplastic BE. At 12 months, 90.5% of RFA-treated patients had complete eradication of LGD, compared to 22.7% of controls ($p < 0.001$). Patients who received

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ablation also had significantly less disease progression (3.6% vs. 16.3%, $p = 0.03$). Few serious adverse effects were noted, but RFA was associated with a significant increase in chest pain and a 6% stricture rate; all strictures were successfully managed with endoscopic dilation [5]. The 2- and 3-year results of the trial revealed a durable effect of RFA with a low rate of disease progression. Complete eradication of LGD and IM was observed in 98% of patients at 2 years. Follow-up at 3 years revealed complete eradication of dysplasia in 98% and complete eradication of intestinal metaplasia (IM) in 91% of patients. Predictors of complete response were sought, but none were statistically significant [6].

A recent randomized controlled trial published by Phoa et al. corroborated these findings. They compared RFA to endoscopic surveillance for patients with LGD and found that RFA significantly reduced the rate of progression to HGD and EAC over a 3-year follow-up period. Radiofrequency ablation reduced progression to HGD or EAC by 25% and reduced progression to EAC by 7.4%. Complete eradication of dysplasia was observed in 92.6% of patients after RFA. Treatment-related adverse events occurred in 19.1% of patients who received ablation. Stricture was the most common adverse event (11.8%) and was all treated successfully with endoscopic dilation. The data and safety monitoring board terminated the trial early due to superiority of ablation [7].

Radiofrequency ablation is a safe and effective treatment for LGD with a risk profile appropriately matched to the natural course of the disease. However, it does not provide indefinite eradication in all patients, and therefore, post-ablation surveillance is required [5–9]. With regard to cost-effectiveness, some evidence suggests RFA may be a cost-effective treatment for LGD, but a better understanding of its long-term efficacy is needed before drawing firm conclusions [10]. From a patient perspective, RFA improves disease-specific health-related quality of life secondary to a perceived decrease in the risk of cancer development [11]. Because patients face a diagnosis with an uncertain course, quality of life and psychological stress may play a significant part in their management decisions. Fortunately, endoscopic ablation technology has allowed the field to evolve past mere surveillance. In today's era, RFA should be discussed with, and considered in, all patients with LGD given its safety, efficacy, and durability.

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