This special issue of *Endoscopy* is dedicated to the subject of total Barrett eradication, that is the complete removal of Barrett esophagus and associated neoplasia by endoscopic resection and/or endoscopic ablation techniques. Many leading experts in the field have contributed to this important issue. Drs. Shaheen and Spechler discuss the relevant methodological issues and pitfalls in studies of Barrett esophagus eradication [1], Drs. Curvers and Bansal offer recommendations for the endoscopic work-up of patients with Barrett esophagus-related neoplasia (BERN) [2], and Drs. Odze and Lauwers clearly describe how pre- and post-treatment histology should be evaluated [3]. Subsequently, leaders in the field of therapeutic endoscopy discuss the different available endoscopic treatment modalities for BERN: endoscopic resection, argon plasma coagulation (APC), cryotherapy, photodynamic therapy (PDT), and radiofrequency ablation (RFA) [4–7]. Finally, Drs. Peters [8] and Falk [9] look into the crystal ball to predict the future of endoscopic treatment of BERN from a surgeon’s and an endoscopist’s viewpoint, respectively.

Why has a special issue of *Endoscopy* been dedicated to this topic? The evidence is now accumulating that endoscopic treatment of BERN is safe and effective, suggesting that this approach should be preferred over esophagectomy in selected patients [10–12]. New endoscopic tools, most recently endoscopic resection and RFA, appear to be effective not only in removing BERN but also in completely eradicating all associated Barrett mucosa in the majority of treated patients [13–16]. As a result, many expert centers have adopted advanced imaging, endoscopic resection, and ablation as their management strategy for BERN.

In our opinion, the past five years have yielded a number of very promising advances for our field in the endoscopic diagnosis, staging, and management of BERN. We have moved from an era of “survey most lesions and operate on those with high grade dysplasia and cancer,” to an era where we have the option to “survey all lesions, endoscopically treat selected lesions, and reserve surgery only for patients with invasive cancers involving the submucosa.” We are witnessing a significant paradigm shift—one that is accompanied by new challenges that we must be prepared to address. These challenges include: maintaining technical excellence and safety with all procedures, via robust training programs; ensuring that visible lesions are detected and properly staged prior to initiation of an endoscopic treatment regimen; preparing the patient for endoscopic management; evaluating the evidence critically to determine ideal patient selection criteria, and which disease states should be treated; and evaluating the financial realities of cost-effectiveness and reimbursement.

Regarding technical excellence, endoscopic resection and ablative therapies for BERN generally encompass multiple endoscopic modalities for diagnosis, staging, and treatment. Done properly, we believe they are highly effective and quite safe for the patient. We need to develop training programs for physicians and our advanced trainees so that currently reported efficacy and safety profiles are maintained. Extracurricular training courses (see www.endosurgery.eu for examples) aimed at the entire spectrum of endoscopic management are being developed to achieve these objectives.

Endoscopic detection and proper staging of patients with BERN prior to therapy, are essential. Most available studies come from expert centers with standardized endoscopic staging algorithms, high quality therapeutic interventions, rigorous endoscopic follow-up, and expert histopathological evaluation. Respectfully, a general endoscopist may not see as many cases of BERN as endoscopists in expert centers and therefore may not be as likely to recognize the subtle
changes that accompany early neoplastic alteration in Barrett esophagus. With the current quality of white light endoscopy, our eyes have become the weakest link in the detection chain [17]. The International Working Group for Classification of Oesophagitis (www.iwgo.org), the same group that developed and validated the Los Angeles (LA) classification for erosive esophagitis and the Prague circumferential and maximal (C&M) criteria for grading the extent of Barrett esophagus [18], is currently working on teaching materials to aid in the standardization of BERN recognition. All the experts involved in this issue of Endoscopy agree that endoscopic resection is a cornerstone for endoscopic management of BERN since it allows histological correlation thus enabling optimal patient selection. Patients with submucosal invasion should be referred for surgery because they have a 15%–30% risk of positive local lymph nodes whereas this risk is minimal in patients with intramuscular cancer or high grade intraepithelial neoplasia (HGIN) [19].

The patient must be prepared for an intense regimen of endoscopic staging, treatment, and continued surveillance, as a number of endoscopic procedures may be required before complete eradication of Barrett esophagus has been achieved and the patient allowed to re-enter a possibly modified surveillance program. One or two mapping procedures are generally required before an endoscopic resection is performed [20]. After healing of the endoscopic resection site most patients require multiple ablation sessions (median 3) performed at 2-month intervals [13–16]. Even then, approximately 10%–15% of patients may require an endoscopic resection as an “escape treatment” for complete removal of all Barrett mucosa [13,14]. The impressive success rates recently reported thus require between five and nine endoscopic procedures and the endoscopic work-up and treatment may cover a period of 12 to 15 months. The psychological impact of such a prolonged endoscopic treatment on patients is probably underestimated. Certainly, the surgical alternative is more expensive, more risky and more demanding for patients. Nevertheless, we need to improve the practicality of our current algorithms for endoscopic management of BERN and not close our eyes to the negative psychological impact of being treated for a stigmatizing disease such as esophageal cancer.

Which patients with Barrett esophagus should be offered endoscopic treatment? The progress made in this field is possibly best illustrated by the fact that discussions about who should be treated have moved away from BERN, with endoscopic therapy now accepted as the treatment of choice for that condition, to debate about the treatment of non-neoplastic Barrett esophagus. This debate is fuelled by the controversies relating to lifelong endoscopic surveillance of Barrett esophagus (cost-effectiveness, negative impact on the quality of life of patients) and the promising results of recent RFA studies. RFA appears to have many of the features of an ideal ablation technique. Its reported efficacy and safety profile is impressive in a range of study designs [7], the neosquamous mucosa that develops after the ablation has been shown to be free of genetic abnormalities [21], and the occurrence of residual areas of columnar mucosa underneath the neosquamous mucosa ("buried Barrett’s") is found to be extremely low [13–16]. Recent cost-effectiveness data indeed suggest that complete eradication of non-neoplastic Barrett esophagus is more cost-effective than lifelong surveillance [22]. Despite these promising results, we believe that it is too early to broadly embrace RFA for treating patients with non-neoplastic Barrett esophagus [23]. Compared with patients with BERN, patients with non-neoplastic Barrett esophagus have a lower rate of progression to adenocarcinoma (approximately 0.5% per patient per year of follow-up). Longer follow-up is required to show that complete eradication actually persists and to prove that endoscopic surveillance of these patients indeed can be stopped once total Barrett eradication has been achieved. All the largest published prospective series on RFA in Barrett esophagus have included fewer than 150 patients. Although these have all shown absence of severe complications and esophageal scarring, studies on a larger scale are necessary to provide reliable point estimates for rare complications. Treatment of this patient group should therefore only be considered in the setting of a prospective registry or clinical trial, with the informed consent of patients, to allow collection of long-term safety and efficacy data on a wide scale.

Finally, we need to consider the economics of endoscopic management for BERN. Several decision analyses have shown that surveillance for BERN is not cost-effective because of recurring lifelong costs related to endoscopy and biopsy, plus the potential for cancer progression. Recent studies have also shown that endoscopic therapy (PDT and RFA) is more cost-effective than surgery and even surveillance for BERN [24]. We must consider this evidence in light of the fact that endoscopic management for BERN might be cost-effective but it is simultaneously resource-intensive, like surveillance and surgery, and it might not (yet) be adequately reimbursed for all patients by third-party payers, depending on the region. If the scientific evidence supports endoscopic management, we should be prepared to perform the studies and do the work necessary to support payment for services for those patients that we deem eligible for treatment.

Selecting the right patient, accurately grading and staging the Barrett segment, and access to expertise in pathology and endoscopy—these form the ingredients for achieving complete Barrett eradication. We hope that you will find this special issue of Endoscopy useful and informative for managing your patients with BERN.

Competing interests: None

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