Mistakes in the endoscopic diagnosis and management of Barrett’s oesophagus and how to avoid them

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Barrett’s oesophagus is the precursor to oesophageal adenocarcinoma, which carries a poor prognosis, and it is likely that all endoscopists and gastroenterologists will encounter Barrett’s oesophagus in their clinical practice. Careful assessment and management of patients who have Barrett’s oesophagus with endoscopic surveillance and endoscopic endotherapy aims to reduce the risk of progression to invasive adenocarcinoma. Advances in endoscopic diagnosis and therapy should, therefore, help to reduce the risk of progression. As with all premalignant conditions and surveillance programmes, careful multidisciplinary management of the patient is important to reduce the risk of causing them to become unduly concerned. Here, we present some mistakes that in our experience are commonly made in the endoscopic diagnosis and management of Barrett’s oesophagus and give advice on how to avoid them.

Mistake 1 Overdiagnosis of Barrett’s oesophagus

Overdiagnosis of Barrett’s oesophagus can cause unnecessary endoscopic surveillance and many patients have a higher than accurate perception of their risk of cancer. Barrett’s oesophagus should be defined by accurately recognising the proximal limit of the gastric folds with moderate air insufflation at endoscopy. Patients who have tongues of columnar epithelium that are shorter than 1 cm and no confluent columnar segment should not be given the diagnosis of Barrett’s oesophagus, but instead be defined as having an irregular Z-line (figure 1). Patients who have an irregular Z-line should be reassured and should not enter into a surveillance programme.

The extent of Barrett’s oesophagus should be described using the Prague classification, and the maximal circumferential length (C) and maximal extent of tongues or islands (M) recorded (figure 2). This allows determination of endoscopic intervals and, should dysplasia be found in a random biopsy sample, the area can be accurately relocated at repeat endoscopy.

Mistake 2 Not allowing sufficient time for careful inspection of the oesophagus during endoscopy

16.4–38.0% of oesophageal adenocarcinomas are diagnosed within 12 months of the index endoscopy, highlighting the particular importance of the index endoscopy. It is likely, given the natural progression of this disease, that most of these adenocarcinomas will have developed in missed lesions. As the time spent inspecting the Barrett’s segment increases so the detection of neoplasia improves, and at least 1 minute should be spent inspecting each centimetre segment.

Other factors are also known to improve the quality of the oesophageal inspection. The mucosa should be cleaned with a mucolytic agent and the patient made comfortable (sedation is often needed to achieve this) because retching can impair the endoscopist’s view. We perform most of our Barrett’s surveillance endoscopies under sedation rather than local anaesthetic throat spray to reduce artefact caused by motion if the patient is uncomfortable and to allow longer, comfortable inspection time. Particular attention should be paid to the right wall and proximal segment as this is where early cancers are most commonly found.

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A systematic review has also shown that 25% of oesophageal adenocarcinomas are diagnosed within 12 months of the index endoscopy, highlighting the particular importance of the index endoscopy. It is likely, given the natural progression of this disease, that most of these adenocarcinomas will have developed in missed lesions. As the time spent inspecting the Barrett’s segment increases so the detection of neoplasia improves, and at least 1 minute should be spent inspecting each centimetre segment.

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Figure 1 | Diagnosing Barrett’s oesophagus. a | An irregular Z-line only. b | Barrett’s oesophagus.
The detection of early neoplasia is the rationale for endoscopic assessment of Barrett’s oesophagus. Therefore, available adjuncts to aid neoplasia detection should be considered by the endoscopist, in particular high-definition endoscopes, as advised by the ESGE. Most endoscopes now available have image enhancement modes with virtual chromoendoscopy that can help to detect neoplasia (e.g. narrow-band imaging [NBI; Olympus], i-scan [Pentax], blue light imaging [BLI; Fujinon]).

Endoscopists should familiarise themselves with these techniques and use them during Barrett’s oesophagus endoscopies. In addition, acetic acid 1.5–3.0% sprayed onto the mucosa via a spray catheter is a safe method to detect areas of rapid loss of aceto-whitening, which can be a sign of dysplastic tissue (figure 3), in some analyses improving the diagnostic yield by over 14-fold.

**Mistake 4 Not following biopsy protocols correctly**

Following careful inspection of the oesophagus, targeted biopsy samples should be taken from areas identified as potentially dysplastic, with which the above-mentioned techniques can help. The location of these areas should be marked and the samples sent to the histopathology laboratory in separate pots, so that if dysplasia is identified in a sample the location it was taken from can be found more easily at a later endoscopy if therapy is to be considered.

The Seattle protocol should then be used to take samples around the four quadrants of the mucosa, starting at the gastro-oesophageal junction and then every 2cm to the proximal limit of the Barrett’s segment (figure 4). However, it should be noted that this probably represents sampling of only 3.5% of the mucosa. Large capacity forceps may help to sample a larger area. Newer techniques including ‘Watts-3D’ may also, in future, aid sampling a larger area.

**Mistake 5 Taking biopsy samples from an inflamed segment of Barrett’s oesophagus**

If, on inspection, the Barrett’s segment appears inflamed, there is a risk of misdiagnosing a patient with dysplasia if biopsy samples are taken. Such a misdiagnosis clearly has the potential to distress the patient and also risk unnecessary intervention. Patients should not have biopsy samples taken when an inflamed Barrett’s segment is found, but instead they should be placed on maximal acid suppression. A repeat endoscopy should be performed at a later date and biopsy samples should then be taken. In our experience, we would usually double the current dose of acid suppression and perform a repeat endoscopy in 2–3 months.

**Mistake 6 Commencing endotherapy without confirming the presence of dysplasia**

If low-grade dysplasia (LGD) is identified in biopsy samples, the patient should have a second endoscopy to confirm its presence before endotherapy is commenced. This second endoscopy avoids exposing patients unnecessarily to the risks of endotherapy, which include bleeding and stricture formation. The identification of LGD should be carefully considered as there is significant intraobserver and interobserver variability in its pathological diagnosis, with one series demonstrating a 73% downgrading of LGD at expert histological review. In complex cases, the histology findings and the patient’s case should ideally be discussed in a multidisciplinary team meeting with expert pathologists and endoscopists to help decide on the course of action. Patients should have the opportunity to discuss the potential benefits and risks of therapy with an experienced health professional, ideally in an outpatient-clinic-based setting.

**Mistake 7 Performing endotherapy inconsistently**

Endotherapy should be undertaken by those with sufficient experience to select the correct treatment modality and to deal with potential complications. Visible lesions should be identified and removed by endoscopic mucosal resection (EMR). Careful staging should be performed by an experienced endoscopist to assess the lesion and consider endoscopic ultrasound (EUS) or cross-sectional imaging if there is any concern regarding the presence of invasive carcinoma (figure 5). All visible lesions should be removed and at subsequent endoscopies radiofrequency ablation (RFA) used to treat the remaining Barrett’s mucosa. Argon plasma coagulation (APC) can also be
Mistakes in...

### Mistake 8 Not following up patients who have Barrett’s oesophagus

Patients with Barrett’s oesophagus will often have long intervals (3–5 years) between endoscopies and it is important not to lose them to follow up. Having a database to record patients on a surveillance programme is crucial, and accurate communication with the patient and their general practitioner can help reduce the risk of losing them. Surveillance should follow guidelines on intervals. 1,3,10,30,31

### Mistake 9 Continuing surveillance in patients for whom it is no longer appropriate

Patients with Barrett’s oesophagus may develop other comorbidities during a surveillance programme that make them less suitable to continue with surveillance. Consideration of the patient as a whole at each interaction with health professionals and informed discussion with the patient is important to avoid surveillance in patients for whom it is no longer suitable, due to life-limiting illness or a condition that would make endoscopy unsafe or very uncomfortable for the patient.

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**References**