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The Use of the Prague Classification System in the Reporting of Barrett's Surveillance Endoscopies

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Authors' contributions

This work was carried out in collaboration between both authors. Author SJ designed the study and wrote the protocol. Author RB managed the literature searches, analysed the data and wrote the first draft of the manuscript. Both authors read and approved the final manuscript.

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Short Research Article

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ABSTRACT

Aims: The Prague classification for the reporting of Barrett's oesophagus has been validated in previous studies and is recommended by the British Society of Gastroenterologists (BSG) in their latest guidelines. In this short study we aim to audit the adherence to the use of this system in endoscopy reports produced in a busy teaching hospital in the UK.
Methods: We retrospectively audited all the reports for endoscopies performed as surveillance for patients with known Barrett's oesophagus within a six month period. These reports were examined as to whether or not the Prague classification system was employed.
Results: Sixty-seven reports were inspected and six were excluded as Barrett's was not seen. Twenty-six of the 61 reports studied (43%) used the Prague classification system. The remainder used descriptions and length measurements felt appropriate by the endoscopist.
Conclusions: The BSG guidelines emphasise the importance of measuring Barrett's using a standard methodology. The rationale for this include aiding communication, increasing the level of diagnostic confidence and providing an estimate of the risk of adenocarcinoma development based on segment length. The use of the Prague classification is validated, explicit and consensus driven.

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However our study demonstrates that only 43% of endoscopy reports use the Prague system. The reason for this lack of adherence is unclear and may benefit from further study.

Keywords: Barrett's oesophagus; Prague classification; C & M criteria; endoscopy; endoscopic surveillance.

1. BACKGROUND

Barrett's oesophagus (BO) is common pathology of the oesophagus characterised by the displacement of the squamocolumnar junction proximal to the gastro-oesophageal junction (GOJ) with the presence of intestinal metaplasia [1]. The BSG add that this should be clearly visible endoscopically [1]. In response to chronic injury caused by the reflux of gastric contents the normal squamous epithelial lining of the lower oesophagus becomes neoepithelialised with intestinal epithelium. This columnar lined epithelium has a predisposition to progression through dysplasia to adenocarcinoma and thus BO is a well-established premalignant condition [2]. In doubling the segment length of BO there is a 1.7x increased risk of oesophageal adenocarcinoma (OAC) [3]. The incidence of OAC has risen six fold in Western countries in recent decades [2]. In the United States the incidence has risen from 0.4/100000 in 1975 to 2.6/100000 in 2009 [2]. Despite the increase in incidence prognosis for oesophageal adenocarcinoma patients remains dismally low with a 5 year survival of <20% [4]. The prevalence of BO is unknown due to its often asymptomatic nature and the need for endoscopy to make the diagnosis. BO is detected in approximately 10-14% of patients undergoing endoscopy for gastro-oesophageal reflux disease (GORD) [5]. Estimates for the prevalence of BO in asymptomatic individuals varies widely between 0.6 and 25% of the population [5]. Risk factors for the development of BO include GORD, white race, male sex, increasing age, tobacco smoking and central obesity [2]. Repeat surveillance endoscopies are offered to all patients with BO with the simple rationale that this will enable the earlier detection of OAC with a more favourable outcome and possibility of cure.

The British Society of Gastroenterology (BSG) guidelines on the management of BO stress the importance of using a standard methodology in its measurement [1]. Standard methodology has the benefit of aiding communication, increasing the level of diagnostic confidence and has a role in the perceived risk of OAC development, which alters with length [1]. The Prague C&M criteria for the reporting of BO endoscopies were first presented in September 2004 in Prague at the United European Gastroenterology Week and was developed by the International Working Group for the classification of oesophagitis (IWGCO). The criteria involve identifying the GOJ and measuring the maximal circumferential extent of suspected columnar epithelium (C) before measuring the maximal extent of the columnar epithelium (M) [6]. The Prague system is explicit, quick, easy and can be used on an everyday basis. Subsequently this criterion has been validated and is now recommended for use by the British, American, Australian and French guidelines amongst others.

2. AIMS

In this short article we aim to audit the proportion of BO surveillance endoscopy reports produced in a busy teaching hospital in the UK that utilise the Prague criteria as per BSG guidelines.

3. METHODS

In this audit we retrospectively audited all the endoscopy reports produced for Barrett's oesophagus surveillance within a six month period. The period of study was June to December 2014 and all endoscopies were performed within the University Hospital of Coventry and Warwickshire (UHCW) NHS Trust, Coventry, UK. Only endoscopies performed for the purpose of Barrett's oesophagus surveillance were included within the study. The electronic endoscopy reports were reviewed using the hospital's IT system. Each report was assessed as to whether the Prague C&M criteria were used and if not the description used was noted.

4. RESULTS

Sixty-seven BO surveillance endoscopies were performed within the study period. Six reports were excluded from the audit as BO was not seen in these endoscopies. Of the 61 remaining reports 26 (43%) included the Prague criteria within them. The remainder used descriptions and length measurements felt appropriate by the endoscopist.

5. DISCUSSION

As previously mentioned the BSG guidelines emphasise the importance of measuring Barrett's oesophagus using standard methodology for three reasons. These are that such methodology aids communication, increases the level of diagnostic confidence and gives an estimate of risk of adenocarcinoma development according to segment length [1]. Standardised measurement is also the key to assessing efficacy of treatment, classifying patients in clinical trials and developing algorithms in clinical practice [6]. For these reasons the use of the Prague criteria is recommended not only by the BSG but also by the American Gastroenterological Association (AGA), the French Society of Digestive Endoscopy and Australian Cancer Council guidelines among others. Previous systems of defining lengths as long, short, ultra-short had no established cut-off or clinical significance and previous systems had shown considerable variation in detection and measurement of extent of BO [7,6].

The Prague criteria were developed and validated via the use of 29 standardised video clips of BO endoscopies [6]. These clips were viewed by an international panel of 29 expert endoscopists and scored using the Prague criteria [6]. The values for agreement within 1 cm for the C criterion were 88% and for M were 82%; agreement within 2 cm rose to C= 97% M=95% [6]. Reliability coefficients were 0.95 for C and 0.94 for M [6]. Endoscopic recognition of BO ≥1 cm was 0.72 but for segments less than 1 cm dropped to 0.22 [6]. This finding formed the basis of the recommendation in the BSG guidelines that 1 cm is the minimum length that should be labelled as BO [1]. There are two important limitations to the reliability data for the Prague criteria. First it was based on recorded video clips selected by the panel and not on live endoscopies [6]. The clips were screened for how well the demonstrated endoscopic landmarks and this could have provided a level of bias that falsely increased the criteria's reliability. More over the criteria were validated by expert endoscopists with an interest in BO. The reliability of the criteria was not assessed on less experienced endoscopists and this too may have given rise to a falsely high reliability [6]. Despite these potential drawbacks the Prague criteria still appears to be a reliable standardised system which is suitable for everyday use and recommended by multiple national bodies in the assessment of BO.

Our short audit shows that despite the reliability of the Prague criteria and its recommendation by the BSG it is used in only 43% of BO endoscopies in our hospital. The reason for this is currently unclear. This apparent non adherence to national guidelines may result in adverse patient outcomes via inconsistent reporting and the subsequent stratification of risk. If this is the case then the reason for this non-adherence would benefit for investigation. Possible future investigation may include the dissemination of a questionnaire to endoscopists assessing the understanding of BO guidelines. If the guidelines are well understood then the reason for non-use of the Prague criteria could be assessed. Possible reasons for non-adherence may include a lack of confidence in the calculation of a C&M score or a conscious decision due to a perceived lack of evidence in the criteria's reliability. There are several potential flaws in this short audit. The first is the relatively limited sample size used. The reliability of this data would be improved by collecting data over a year. The second issue is that of the use of reports only from our hospital UHCW. There may be issues with education or culture that account for the relatively low use of the Prague criteria here. The third issue is that endoscopies on which BO was initially diagnosed were not included in this audit. It is possible that endoscopists may have been more likely to use Prague on these initial endoscopies. The findings of this audit would benefit from follow-up with a multicentre study over a greater time period with the inclusion of endoscopies on which BO was first diagnosed. If these finding as reproduced by such a larger study the dissemination of questionnaires to endoscopists to ascertain the reason for this deviation from guidelines would be informative. Solutions to this issue would be tailored to the questionnaire results and may include a greater emphasis on the Prague criteria in teaching and training, dissemination of evidence surrounding the topic or practical prompts such as the inclusion of a box on the endoscopy report for the Prague score.

6. CONCLUSION

In conclusion our small audit of BO surveillance endoscopies has revealed that the recommended Prague criteria are only used on 43% of endoscopy reports in our hospital. If similar conclusions are drawn from larger studies the reason for this non-adherence to BSG guidelines would benefit from investigation. Simple solutions may then be implemented with

the benefit of improved communication for the more accurate stratification of a patient's risk of developing OAC.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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