Role of CT in investigative management of Barrett's oesophagus with high grade dysplasia

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Introduction

The management of Barrett's oesophagus is at times complex and controversial. The requirement to diagnose and manage high grade dysplasia (HGD) as early as possible is vital given the high mortality of invasive oesophageal malignancy.

The British society of Gastroenterologists (BSG)[1] and West of Scotland Cancer Network (WSCN) have developed subtly different investigative and management guidelines for oesophageal HGD, dependent on local availability of expertise, but neither involves the routine use of CT. (figure 1)

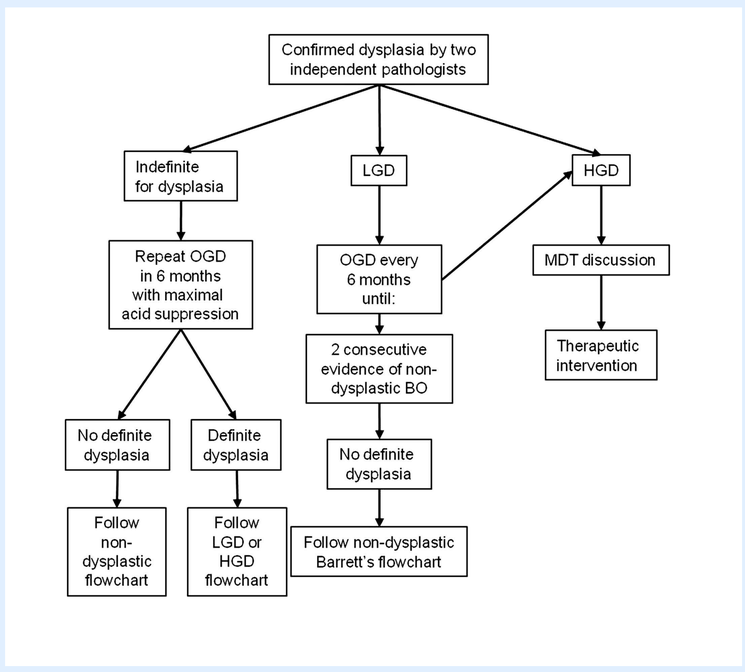
Aim

A significant number of patients with HGD within Greater Glasgow and Clyde are still undergoing staging CT of chest, abdomen and pelvis. There is currently no evidence to support this.

We wanted to evaluate how often this is happening and what benefit, if any, is offered.

Figure 1:

Clinical decision flowchart for the management of oesophageal dysplasia, as recommended by the British Society of Gastroenterologists (BSG). Note that there is no recommendation for CT scanning in the absence of malignant findings on biopsy.



Method

Using a keyword search on our radiology database, we collected all CT reports from 2016 and 2017 which were requested for HGD. We then reviewed pathology reports of all these patients and excluded those with a history of invasive malignancy or endoscopic features suggestive of invasion. (figure 2)

The scans were then reviewed to look for radiological evidence of oesophageal malignancy (local, nodal or metastatic) Any clinically significant incidental findings were also documented.

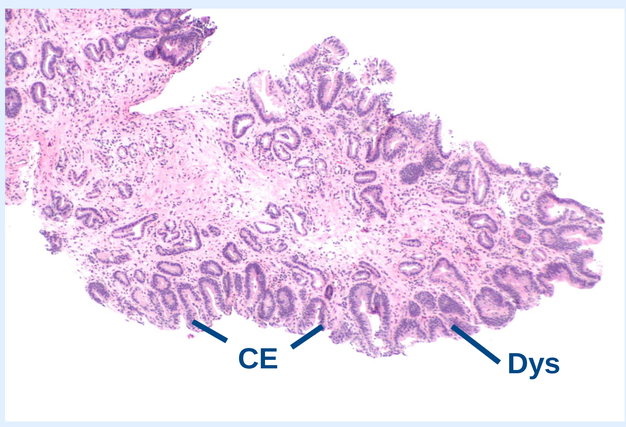


Figure 2:

Histological appearance of oesophageal dysplasia. Note the columnar epithelium (CE) at the luminal surface in place of the normal squamous epithelial lining typifying Barrett's oesophagus. The abnormal cell size, orientation and proliferation rate of the metaplastic epithelium denotes dysplasia (Dys).

Results

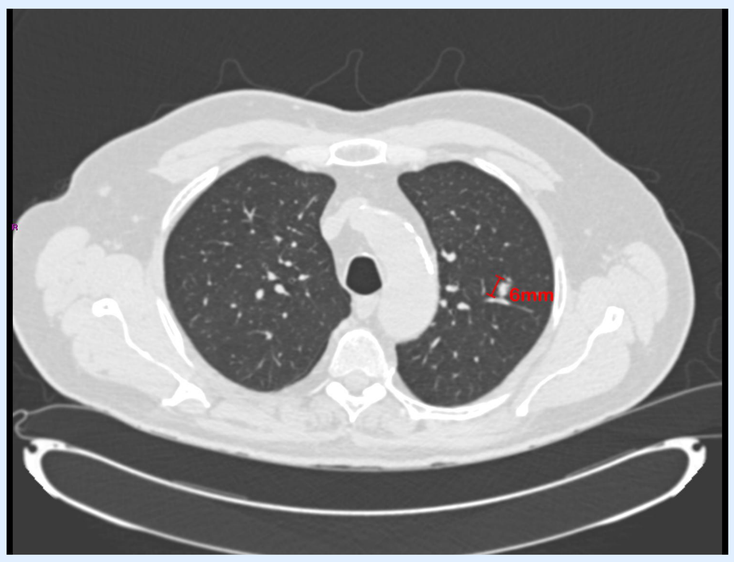
There were 55 patients who met the inclusion criteria. All of these patients had a staging CT despite this not being a documented local or national guideline.

There were no features to suggest oesophageal malignancy on any of the CT scans performed.

9 patients in 2016 (64%) and 28 patients in 2017 (68%) had non malignant incidental imaging findings which led to further investigations but did not change the management of HGD. The majority of these were incidental pulmonary nodules which required follow up as per British Thoracic Society guidelines (BTS)[2] leading to multiple further CT scans and increased patient anxiety. None of these to date have been malignant. (figure 3)

Figure 3:

This is a CT scan of a patient with an incidental pulmonary nodule. The size of this nodule means that this patient needs a follow up CT at one year and possibly a further CT two years after this baseline scan as per BTS guidelines.



Conclusion

CT offers no benefit in the evaluation of patients with HGD and potentially only adds to morbidity by demonstrating other, often irrelevant findings.

References

1. British Society of Gastroenterology guidelines on the diagnosis and management of Barrett's oesophagus. Fitzgerald RC, di Pietro M, Ragunath K *et al. GUT* 2014;63:7- 42

2. British Thoracic Society guidelines for the investigation and management of pulmonary nodules:accredited by NICE. Callister MEJ, Baldwin DR, Akram AR, *et al. THORAX* 2015;70:ii1-ii54.

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