



## CASE REPORT

# Gastric cancer missed at endoscopy

Ahmed Gado <sup>a,\*</sup>, Basel Ebeid <sup>b</sup>

<sup>a</sup> Department of Medicine, Bolak Eldakror Hospital, Giza, Egypt

<sup>b</sup> Department of Tropical Medicine, Banysweef University, Banysweef, Egypt

Received 11 May 2012; accepted 18 August 2012

Available online 21 September 2012

### KEYWORDS

Gastric cancer;  
Misdiagnoses;  
Diagnostic error;  
Endoscopy

**Abstract** Stomach cancer is the fourth most common malignancy worldwide. Endoscopy (with biopsies) is the gold standard for its diagnosis but missed oesophageal and gastric cancers are not infrequent in patients who have undergone previous endoscopy. Errors by the endoscopist account for the majority of these missed lesions. The following report describes an incident in which there was a diagnostic error that led to a failed diagnosis of gastric cancer at first endoscopy. The implications for clinical and endoscopic practice are discussed.

© 2012 Alexandria University Faculty of Medicine. Production and hosting by Elsevier B.V. All rights reserved.

## 1. Case report

A 73-year-old male presented to our hospital with a two month history of epigastric pain, vomiting, anorexia and weight loss. He had a history of peptic ulcer. A gastro-jejunoscopy had been performed 15 years previously. Oesophago-gastro-duodenoscopy (OGD) was performed by a trainee under the guidance of a senior endoscopist. A benign looking stomal ulcer was identified but biopsies were not taken. A H2 receptor antagonist was prescribed and a follow up OGD recom-

mended. The OGD was repeated by a more experienced endoscopist one month later and revealed an unhealed stomal ulcer and a protruding swelling (Figs. 1 and 2). Biopsy revealed a moderately differentiated/grade II adenocarcinoma (Fig. 3). The patient was referred to the National Cancer Institute and died two months later.

A staff meeting was held to discuss the diagnostic error. Alarm symptoms had been present at the time of the initial endoscopy and a gastric ulcer had been found in a patient with gastro-enterostomy but no biopsies were obtained. The diagnosis of cancer was missed because the endoscopist had been unfamiliar with its appearance and biopsies were not taken.

Measures have been taken to avoid such an error from happening again. A careful clinical assessment should be made before endoscopy taking into account risk factors for cancer and the clinical presentation. Careful examination of the stomach during endoscopy should be performed in order not to miss any lesion. All gastric ulcers must be biopsied and a repeat endoscopy be performed following a course of acid suppression. There should also be a post procedure assessment of the cognitive success of the procedure in order to evaluate whether its aim has been achieved.

\* Corresponding author. Address: Department of Medicine, Bolak Eldakror Hospital, Bolak Eldakror, Giza, Egypt. Tel.: +20 2 35837644 (residence), mobile: +20 1006809363; fax: +20 2 27383040. E-mail address: agado1954@yahoo.com (A. Gado).

Peer review under responsibility of Alexandria University Faculty of Medicine.



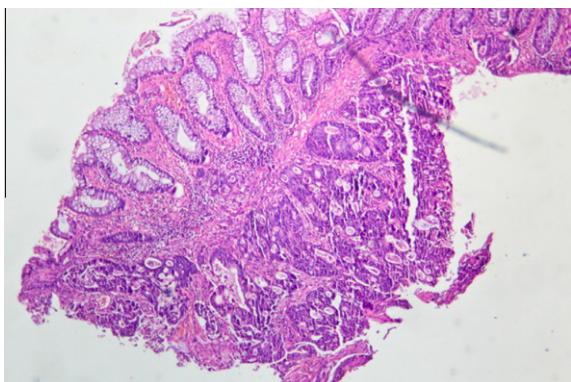
Production and hosting by Elsevier



**Figure 1** Endoscopic view of gastric cancer.



**Figure 2** Endoscopic view of gastric cancer.



**Figure 3** Photomicrograph showing the adenocarcinoma of the stomach (H and E,  $\times 100$ ).

## 2. Discussion

Stomach cancer is the fourth most common malignancy worldwide and its incidence is twice as high in men as in women.<sup>1</sup> The median age for gastric cancer in the United States is 70 years for males and 74 for females.<sup>1</sup> Endoscopy (with biopsies) is the gold standard for the diagnosis of gastro-oesophageal cancer however, cancers can be missed at endoscopy and

errors by the endoscopists account for the majority of missed lesions.<sup>2</sup> Recent publications assessing colonoscopy miss rates of colorectal cancer have generated efforts designed to improve the quality of colonoscopy. To date however OGD has escaped similar scrutiny in Western populations.<sup>3</sup>

In a study from the United Kingdom, missed cancers were not infrequent in patients who had undergone previous endoscopy.<sup>2</sup> Out of a consecutive series of 305 patients diagnosed with oesophageal or gastric cancers, the lesion had been missed in 7.2%. Errors by the endoscopist accounted for the majority of these.<sup>2</sup> Raftopoulos et al. reported an upper gastrointestinal cancer missed rate of up to 6.7% in a cohort of 28,000 patients who underwent OGD at a hospital-based endoscopy unit in Perth, Western Australia.<sup>3</sup> Of the missed oesophageal and gastric cancers, ~80% of patients had alarm symptoms and in 73% abnormalities were reported at the time of OGD. The cause of failure was that missed cancers either were not seen, or were seen but were not biopsied, or they were biopsied inadequately, or were interpreted incorrectly by the pathologist. A number of studies from Japan found miss rates of upper gastrointestinal cancer as high as 19%.<sup>4</sup>

In this case a gastric (stoma) cancer in a 73-year-old male was missed at initial endoscopy and there was a delay of one month before the histological diagnosis was established. Alarm symptoms were present at the time of initial endoscopy. A failure to biopsy the apparently benign abnormality contributed to the diagnostic error.

When a complication occurs or a lesion is missed, a careful investigation of clinical practice should be undertaken. Appropriate protocols should be available. All gastric ulcers must be biopsied and a repeat endoscopy should be performed following a course of acid suppression and/or *Helicobacter pylori* eradication. Endoscopists must always have a high index of suspicion of gastric ulcers and be prepared to repeat an endoscopy at an early stage if the findings are equivocal or poor views are obtained. Alternatively arrangements should be made for the procedure to be repeated by a more experienced colleague.

Endoscopy is widely used; it has been estimated that in the United Kingdom, one in 100 of the population requires an upper endoscopy every year.<sup>5</sup> The goal of maintaining and enhancing the quality of service should be addressed by a continuous process of measuring aspects of endoscopic performance.<sup>6</sup> Continuous quality improvement has been recommended by professional societies as a part of every endoscopy programme. This case report demonstrates the importance of quality OGD. Often, the importance of OGD is dismissed, and the procedure is performed quickly, without striving for quality and thoroughness.<sup>4</sup> Although the learning curve for OGD is shorter than for colonoscopy, lesions can be missed just as easily in the upper gastrointestinal tract as in the colon.<sup>4</sup> Thus, the quality of OGD is just as important as for lower colonoscopy. The presence of any endoscopic abnormality or clinical alarm symptoms should encourage endoscopists to be particularly thorough. Furthermore, greater suspicion and a more rigorous protocol for repeat endoscopy and biopsy must be implemented in order to reduce the number of missed diagnoses after initial endoscopy. In order to emphasize the importance of quality to the younger generation of endoscopists, practitioners should be taught to perform OGD in a similar manner to the way colonoscopy is performed—ideally, in a thorough manner and with the employment of a report card system.<sup>4</sup>

**Case report**

All authors approved manuscript re-submission.

**Funding**

None.

**Conflict of Interest**

None declared.

**Ethical approval**

Not needed.

**Patient consent**

The patient is not alive. The wife's consent (next of kin) has been obtained.

The manuscript is not being submitted concurrently elsewhere and was not presented at any place.

**Acknowledgements**

The authors wish to thank Prof Ali El-Hindawi, Cairo University and Prof Maha Akl, Theodor Bilharz Research institute for their contribution in the pathological examination.

**References**

1. Cabebe E, Mehta V, Fisher G. Gastric cancer internet; June 2011. Available from: <http://emedicine.medscape.com/article/278744-overview>.
2. Yalamarathi S, Witherspoon P, McCole D, et al. Missed diagnoses in patients with upper gastrointestinal cancers. *Endoscopy* 2004;**36**:874–9.
3. Telford J, Enns R. Endoscopic missed rates of upper gastrointestinal cancers: parallels with colonoscopy. *Am J Gastroenterol* 2010;**105**:1298–300.
4. Enns R. Missed cancers in the upper gastrointestinal tract after esophagogastroduodenoscopy. *Gastroenterol Hepatol* 2010;**6**:691–3.
5. O'Mahony S, Naylor G, Axon A. Quality assurance in gastrointestinal endoscopy. *Endoscopy* 2000;**32**:483–8.
6. Bjorkman DJ, Popp JW. Measuring the quality of endoscopy. *Gastrointest Endosc* 2006;**63**:S1–2.