

## Improved short term surgical outcomes in Scotland for oesophageal cancer

J.A. Young<sup>a,\*</sup>, S.M. Shimi<sup>a</sup>, L. Waugh<sup>b</sup>, G. McPhillips<sup>b</sup>, A.M. Thompson<sup>a,b,c</sup>

<sup>a</sup>Department of Surgery and Molecular Oncology, Ninewells Hospital and Medical School, Dundee DD1 9SY, UK

<sup>b</sup>Scottish Audit of Surgical Mortality, Cirrus Building, Marchburn Drive, Paisley PA3 2SJ, UK

<sup>c</sup>Department of Surgical Oncology, MD Anderson Cancer Center, 1400 Holcombe Boulevard, Houston, TX 77030, USA

Accepted 4 October 2012

Available online 23 October 2012

### Abstract

**Aim:** This study examined the trends in mortality and contributing adverse events associated with death under surgical care for patients with oesophageal cancer.

**Methods:** Adverse events in surgical care were prospectively audited in patients who died with cancer of the oesophagus or oesophago-gastric junction under surgical care in Scotland from 1994 to 2005 through the Scottish Audit of Surgical Mortality (SASM).

**Results:** Between 1994 and 2005 (inclusive), 1424 patients with oesophageal cancer (median age 72, 62% male) died. The proportion of oesophageal cancer patients dying on a surgical ward fell significantly from 17% to 13% ( $p = 0.005$ ). There has been a significant decrease in the annual number of major surgical resections for oesophageal cancer in Scotland from 324 in 1994 to 193 in 2005 ( $p < 0.001$ ). The proportion of patients operated on in specialist cancer centres increased since 2000. In the period 1996 to 2005, 1157 patients died under surgical care with oesophageal cancer and were audited by SASM. One hundred and thirty five patients (12%) had 239 adverse events. Overall, the number of adverse events decreased over time with 65/130 of those who died following a cancer resection had adverse events. An anastomotic leak was a factor in 25 of these patients. There was a significant decrease in the proportion of deaths following therapeutic endoscopy ( $p = 0.011$ ).

**Conclusion:** There has been a significant decrease in the number of cancer resections, adverse events and mortality associated with oesophageal cancer surgery at a time of increasing surgical specialisation.

© 2012 Elsevier Ltd. All rights reserved.

**Keywords:** Oesophageal cancer; Outcomes; Morbidity and mortality; Scotland; Mortality adverse events; Audit

### Introduction

Scotland has the highest rate of oesophageal cancer in the UK and Europe.<sup>1</sup> All types of oesophageal cancer are more common with advancing age with a median age at diagnosis of 72 years.<sup>2</sup> Multidisciplinary team discussion selects patients for surgery<sup>3</sup> or other modalities with a palliative intent.<sup>4,5</sup> In a previous study, only 33% of Scottish patients were found to be suitable for surgery.<sup>2</sup> Overall surgical morbidity was 44% and mortality was high at 12.7% for oesophageal resections and 9.7% for junctional cancers resections.<sup>2</sup> A high re-operation rate has also been reported in Scotland.<sup>2</sup> Palliative surgery for oesophageal cancer is associated with high morbidity and mortality, and has

a limited role.<sup>6,7</sup> Oesophageal obstruction may be relieved with endoscopic or radiological stent insertion,<sup>7,8</sup> all of which carry the risk of oesophageal perforation.

Over the last 20 years, there has been a move towards increasing specialisation in surgical services and towards centralisation of surgical management of oesophageal cancer in specialist units.<sup>9–11</sup> In addition, there have been improvements in staging, anaesthetic techniques and perioperative care including post-operative analgesia and radiological techniques in the management of complications. It has been suggested that these factors improve patient outcomes.<sup>12</sup>

### Aim

The aim of this study was to examine changes over time in the incidence and type of adverse events reported in patients with oesophageal cancer dying in surgical wards.

\* Corresponding author. Tel.: +44 (0) 1382 633936; fax: +44 (0) 1382 496363.

E-mail address: [jamie.young@nhs.net](mailto:jamie.young@nhs.net) (J.A. Young).

## Methods

Patients who died under surgical care from 1994 to 2005 (inclusive) with a diagnosis of oesophageal cancer (ICD10-C15) or keywords of “oesophageal cancer” recorded as a cause of death were identified from the Scottish Audit of Surgical Mortality (SASM) database. Data on the cause and circumstances of death as well as preceding surgical procedure, diagnosis and an indication of the stage of the cancer were obtained for each patient. SASM identifies all deaths that occur in hospital under the care of a surgeon during the patient’s last episode of care, whether an operation has taken place or not. SASM review forms are completed by the relevant surgeon and where appropriate anaesthetist. The forms then undergo a peer review process carried out by virtually every practising clinician within the audited specialties. The process reviews the role of a single clinician and clinical teams both surgical and non-surgical in their contribution to the final outcome. The method of case assessment and the review process are well established.<sup>13</sup> In brief, deaths occurring within 30 days of an operation or during the patient’s last admission are collected via validated surgical and anaesthetic proformas which are anonymously assessed by a surgical assessor and by an anaesthetic assessor (if the patient had a surgical procedure under anaesthesia). The circumstances of death are described in terms of adverse events attributed to clinical issues for an individual, a team or hospital, to resource issues or to other individual causes.

Scottish hospital admission and operation data for oesophageal cancer for the study period were obtained separately from acute hospital discharge data, the Scottish Morbidity Record 1 (SMR1 returns) which identifies each defined episode of hospital care. Health related information in Scotland is collected in a national database which is managed by The Information and Statistics Division (ISD, Scotland) on behalf of NHS Scotland. ISD collects data from a variety of sources including SMR returns of inpatient admissions. The cancer database is part of this programme.<sup>14</sup> ISD also records deaths in Scotland in a separate but record link accessible death database (GRO) from the General Register Office in Scotland. All data are linked by a unique patient identifier, the Community Health Index number (CHI). The data from the SASM database was manually validated with data from the SMR01 returns and GRO database.

## Statistical analysis

Data analysis was made using SPSS (SPSS Inc, Chicago, Illinois) in a quasi-experimental design looking at trends over time, accepting the application of events at certain time points. Data was assumed to be non-parametric and the dependence of categorical factors such as year and admission type was examined using two-way Chi-squared tests. Frequencies in categories were tested for equality with one-way Chi-squared tests. Where differences were

found, linear regression and Kendall’s  $\tau_b$  statistic were applied to test for linear trends across categories. Statistical significance was accepted when the test statistic was less than 5%.

## Results

Between 1994 and 2005 there were a total of 9574 people registered with oesophageal or oesophago-gastric junction cancer and 9038 reported deaths with oesophageal cancer on the ISD database. The annual number of deaths in Scotland recorded by ISD increased significantly from 715 to 798 ( $p < 0.001$ ) while the number of registrations rose from 776 to 816 ( $p = ns$ ). Over the 12 years there has been a significant decrease in the annual number of major surgical resections for oesophageal cancer recorded by ISD in Scotland from 324 in 1994 to 193 in 2005 ( $p < 0.001$ ). In addition, there has been a significant increase in the proportion (187/324 to 140/193) but not the absolute numbers of cases operated on in the six Scottish Cancer Centres (Fig. 1).

Over the same period, 1424 deaths (16% of the total reported to ISD) with a diagnosis of oesophageal or oesophago-gastric junction cancer were audited by SASM. The median age at death was 72 years (range 29–101). As a proportion of all oesophageal cancer deaths reported to ISD, the annual percentage of in hospital surgical deaths audited by SASM has decreased significantly from 125/715 to 103/798 ( $p = 0.019$ ) and the proportion undergoing resection or palliative surgery has also significantly decreased from 42% (324 procedures/776 registrations) to 24% (193/818) ( $p < 0.001$ ).

Out of the total numbers audited by SASM, 844 patients (59%) did not undergo an interventional procedure prior to death. Two hundred and six patients (14%) had a therapeutic endoscopy, 166/1424 had a formal cancer resection, 82/1424 had a palliative surgical procedure, 80/1424 had diagnostic endoscopy and 46/1424 had an unrelated operation on a different organ. Over the period of the study, the

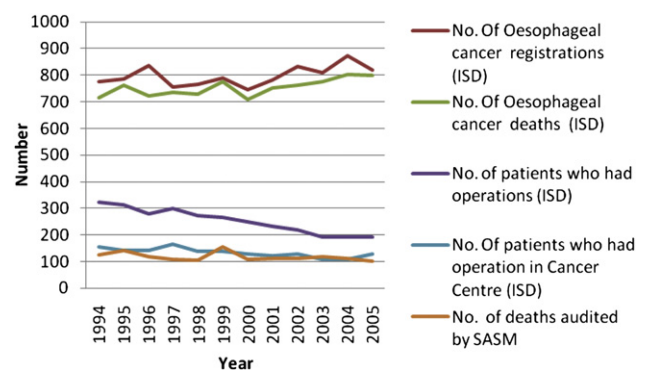


Figure 1. Trends of annual numbers of oesophageal cancer registrations, deaths, and operations in all units and in designated cancer centres in Scotland. Trends of annual number of deaths audited by SASM are also shown (ISD: Data provided by Information and Statistics Division).

Download English Version:

<https://daneshyari.com/en/article/6191843>

Download Persian Version:

<https://daneshyari.com/article/6191843>

[Daneshyari.com](https://daneshyari.com)