

Intraoperative assessment of lymph node involvement in gastric carcinoma

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Summary

This study compares the assessment of lymph nodes by the surgeon, at the time of operation, with the pathologist's assessment on the resected specimen in 85 cases of total gastrectomy with extended lymphadenectomy for gastric carcinoma. There was correlation in 67% of cases, in 28% the disease was overstaged, and in only 5% was it understaged by intraoperative assessment. This has important implications for the comparison of trials and management decisions based on surgical assessment.

Introduction

The place of radical surgery in the treatment of localised gastric cancer is presently the subject of much controversy, with apparently conflicting results arising from Japanese and Western series (1-5). Comparison of studies and the entry of patients into trials presupposes an accurate method of staging the disease, in particular the level of lymph node involvement. Unfortunately there has not been consistency in the staging systems adopted in different centres (6). Intraoperative assessment is required for accurate documentation and management decisions as preoperative imaging has proved unreliable in this regard (7). The purpose of this study is to establish the accuracy with which lymph node status can be assessed surgically.

Patients and methods

Between 1984 and 1987, 219 new patients with histologically proven gastric cancer were treated at the Prince of Wales Hospital, Hong Kong. The patients ranged from 23 to 96 years of age (mean 68 years). The operation rate was 90%. At each operation the extent of the tumour

invasion, the level of lymph node involvement and the presence of peritoneal or liver metastases was assessed by one of two consultant grade surgeons and recorded on a standard proforma. These data were collected prospectively as part of an ongoing assessment of gastric cancer in our region.

Only the 85 patients (39%) undergoing a radical resection with extended lymphadenectomy were included in this study. It was our policy to resect the primary tumour whenever possible and perform a radical lymphadenectomy in cases where initial assessment indicated that all macroscopic intra-abdominal disease could be removed. In these 85 patients the resection was standard, comprising a total gastrectomy, omentectomy, splenectomy and distal pancreatectomy. The anterior leaf of the mesocolon, prepancreatic peritoneum and lesser omentum were removed *en bloc*, with dissections of the porta hepatis, preaortic and coeliac regions. Reconstruction was by a Roux-en-Y loop anastomosed end-to-end to the oesophagus with an EEA® stapler (8).

The resected specimens were examined microscopically from formalin-fixed paraffin sections. Each group of lymph nodes was dissected and sections of each node examined histologically.

Results

An average of 16 lymph nodes were examined histologically in each case. Details of the assessment of lymph

TABLE 1 Comparison of surgical and histological assessment of lymph nodes during surgery for gastric carcinoma

Surgical assessment	Histological assessment	
	Positive	Negative
Positive	43 (50.6%)	24 (28.2%)
Negative	4 (4.7%)	14 (16.5%)
Total	47 (55.3%)	38 (44.7%)

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nodes by the surgeon as compared to the histological analysis are given in Table I. In 55% of radical resectional specimens there was histological evidence of lymph node involvement. In 67% of cases the surgical and pathological assessment correlated; in 28% of cases the surgeon overestimated the lymph node involvement, but in only 5% of cases was the extent of lymph node involvement underestimated at the time of surgery. This gives a sensitivity of 92% and a specificity of 37% for intraoperative lymph node staging.

Discussion

Radical surgical treatment of gastric cancer has been claimed to offer survival benefits in many stages of the disease (3,9); however, there has been a reluctance to adopt such an approach in the United Kingdom. These data indicate that a uniformly radical policy towards lymphadenectomy would result in performing a radical procedure in 45% of cases where there is no lymph node involvement. Considering the reported morbidity of this type of surgery (5), and a possible worldwide mortality as high as 21% (10), strong evidence is required that it is effective before such a policy could be adopted. A major problem is that comparison of trials is hampered by lack of standardisation of treatment or staging, particularly in the West (6). The Japanese, in contrast, have adopted national guidelines for staging and treatment (11).

This study demonstrates that intraoperative assessment of lymph nodes can be a sensitive procedure; however, there is a tendency to overstage lymph node involvement. This has important implications for comparisons of trials in which node dissection was performed (therefore verifying staging histologically) and those in which the lymph nodes have not been dissected. If patients are excluded from trials or denied radical surgery on the basis of a clinical diagnosis of positive lymph nodes then 28% of patients, with false-positives,

would be unnecessarily excluded. It would, therefore, be pertinent to obtain either cytological or histological proof of tumour involvement of lymph nodes before withholding surgery or excluding patients from trials.

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