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Hepatic metastases in Hong Kong Chinese: evidence for an East-West difference in gastric cancer

R J C STEELE MD FRCS
Lecturer in Surgery
S C S CHUNG FRCS MRCP
Lecturer in Surgery
A K C LI MD FRCS FRACS
Professor of Surgery
T J CROFTS MS FRCS FRACS
Senior Lecturer in Surgery

Department of Surgery, Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, Hong Kong

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Summary

The incidence of hepatic metastases found at laparotomy for colorectal and gastric cancer amongst Hong Kong Chinese was found to be 16% and 5% respectively. These figures were compared to similar Western series, and the incidence of metastases from gastric cancer was significantly lower in the Chinese population. This geographical variation may have important implications for the interpretation of treatment results for gastric cancer in different parts of the world.

Introduction

Metastases to the liver profoundly affect the prognosis in gastrointestinal malignancy *(1)*, and virtually preclude curative resection. The reported incidence of hepatic secondaries detected at operation for gastric carcinoma varies from 20 to 27% in Western series *(2–5)*. In Japan, however, liver metastases from stomach cancer seem to be relatively unusual, being found at laparotomy in only 5–7% of cases *(6–9)*.

This low incidence of metastatic liver disease from stomach cancer among the Japanese is open to at least two interpretations. Firstly, the disease might behave in a different manner from that in Western countries, and indeed, a parallel may be drawn with breast cancer, which is known to run a more indolent course in Japanese patients compared to those in the USA *(10)*. Secondly, screening has played a major role in the detection of stomach cancer in Japan since the 1960's *(11)*, and the low incidence of hepatic secondaries may merely reflect early diagnosis.

During the first 23 months at the new Prince of Wales Hospital, Hong Kong, it was noted that stomach cancer was very rarely associated with liver metastases and in view of the discrepancy between the Western and Japanese literatures, a study was carried out to assess the pattern of hepatic disease arising from gastrointestinal malignancies among Hong Kong Chinese.

Correspondence to: T J Crofts

Patients and methods

All patients who underwent laparotomy for histologically proven gastrointestinal cancer from May 1984 to March 1986 were studied. The site of the primary tumour, the tumour stage and the presence or absence of hepatic metastases, peritoneal seedlings or ascites were recorded. The incidence of hepatic secondaries found in association with large bowel and stomach cancers was then compared with similar series in the Western literature.

Results

During the 23 months from May 1984 to March 1986, 247 patients were subjected to laparotomy for gastrointestinal malignancy. Of the primary tumours, 99 (40%) were colorectal, 65 (26%) gastric, 28 (11%) oesophageal, 24 (10%) hepatocellular, 20 (8%) pancreatic, 8 (3%) cholangiocarcinoma, and in 3 (1%) the tissue of origin could not be identified. As only the colorectal and stomach cancers were present in sufficient numbers to allow meaningful analysis, the others were not considered further.

Of the 99 cases of large bowel carcinoma, there were 51 males and 48 females. Pathological staging using the Dukes' classification revealed 8 stage A cases (8%), 29 stage B (29%) and 61 stage C (62%), with one unknown. Twelve patients (12%) had peritoneal seedlings, 6 (6%) had ascites, and 16 (16%) had hepatic secondaries. This incidence of liver metastases was compared with those in four similar series taken from the Western literature *(12–15)*, but no significant differences could be found (Table I).

The group of 65 patients with stomach carcinoma included 38 males and 27 females. Using the condensed TNM staging method *(16)*, there were 3 stage I cases (5%), 15 stage II (23%), 31 stage III (48%) and 16 stage IV (25%). In all, 47 (72%) had histologically involved lymph nodes. Peritoneal seedlings were present in 16 patients (25%), ascites was found in 7 (11%), and hepatic metastases were noted in 3 (5%). The 65 cases represented a 90% laparotomy rate in patients with

TABLE I *Comparable series of colorectal cancers*

Series	*% with hepatic metastases*	*Dukes' stage*
Prince of Wales (Hong Kong)	16% (16/99)	A=8%(8); B=29%(29); C=62%(61)
Oxley and Ellis *(12)* (United Kingdom)	18% (112/640)	Not given
Bengmark and Hafstrom *(13)* (Sweden)	26% (40/156)	Not given
Bengtsson *et al. (14)* (Sweden)	16% (25/155)	A=10%(12); B=56%(70); C=34%(43)
Tanasescu *et al. (15)* (USA)	27% (24/89)	A=0%(0); B=56%(47); C=44%(37)

TABLE II *Comparable series of gastric cancers*

Series	*% with hepatic Metastases*	*% with regional lymph node metastases*	*Laparotomy rate*
Prince of Wales (Hong Kong)	5% (3/65)	72% (47/65)	90%
Guiss *(2)* (USA)	27% (316/1154)*	Not given	40%
Raven *(3)* (United Kingdom)	27% (55/203)*	Not given	75%
Lundh *et al. (4)* (Europe)	26% (209/821)*	75% 615/821)	91%
Buchholtz *et al. (5)* (USA)	20% (37/187)*	76% (142/187)	93%

* $P=0.01$ when compared with the Prince of Wales figures using χ^2 analysis.

stomach cancer over the study period. After a careful search of the literature, four Western series were found with appropriate comparable data on hepatic metastases from stomach cancer found at laparotomy *(2–5)*. These are shown in Table II, and, as can be seen, the incidence of metastatic disease in the liver amongst Hong Kong Chinese was found to be significantly lower than in any of the other series.

Discussion

Published series of gastric cancer are legion, but very few document the presence or absence of hepatic metastases. In order to compare our figures with those of others, it was necessary to use information based on laparotomy alone, and only four suitable reports could be found *(2–5)*. There are certainly other papers in which hepatic secondaries from stomach cancer have been recorded *(13, 17, 18)* but in these, it is impossible to differentiate between laparotomy and autopsy findings. In recent years the TNM staging system *(16)* has been widely used, but in general, the subdivisions of the 'M' category have not been employed *(19)* so that specific patterns of distant metastatic spread cannot be analysed.

In this study, it appears that in Hong Kong Chinese, the finding of liver metastases from stomach cancer at laparotomy is less frequent than in the West, despite a comparable incidence of nodal disease and a relatively high operation rate. Palpation of the liver at laparotomy has been shown to carry an appreciable false negative rate in this context *(20)*, but the comparison is valid as all the data studied were based on intra-operative clinical assessment alone.

It is impossible to extrapolate directly from the Hong Kong Chinese population to Japan, but this finding does have important implications for the interpretations of Japanese treatment results for stomach cancer. Miwa, in a study of 5706 Japanese patients undergoing gastrectomy between 1963 and 1966, reported a 94% 5 year survival rate for those with regional lymph nodes free of tumour, and a 59% rate for those with involved nodes *(11)*. Fielding and his colleagues, on the other hand, found that of 2321 UK patients undergoing radical resection, the 5 year survival rates were 34% and 8.7% for node negative and node positive disease respectively *(21)*. These improved results from Japan may be due in part to the large screening programmes which have been set up, and such an explanation is borne out by the fact that series reported from Japan since the 1960's describe a high proportion of early cancers, with lymph node involvement in only 54–58% of cases *(6, 11, 22)*.

However, in Hong Kong, widespread screening for stomach malignancy has not been introduced. Furthermore, the incidence of nodal metastases reported here is similar to that in Western series. We would therefore suggest that there is geographical and or ethnic variation in the natural history of stomach cancer as regards metastatic spread to the liver, and that such variation must be taken into account when comparing the end results of treatment in different parts of the world.

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Notes on books

Plastic and Reconstructive Surgery edited by Ian F K Muir. 173 pages, illustrated. Bailliére Tindall, London. £29.50.

The eight chapters in this text describe operations that are representative of the different ways in which reconstructive surgery has developed over the last fifteen years. Among topics discussed are primary flexor tendon repair in the hand, reconstructive surgery of the breast, cleft palate repair, hypospadias and lining for defects of the mouth. Extensively illustrated, the book is one of the new Current Operative Surgery series.

Surgery of Female Incontinence edited by Stuart L Stanton and Emil A Tanagho. 2nd edition. 285 pages, illustrated. Springer-Verlag, Berlin. DM 160.

An up-to-date practical guide to the management of urinary incontinence in the female written for the practising gynaecologist and urologist. There has been a thorough revision of all chapters since the first edition was published six years ago. A new chapter on congenital causes of incontinence is included and the book concludes with a consumer guide to the choice of operations written by the two editors. Extensively illustrated and well referenced.

A Colour Atlas of Rupture of the Rotator Cuff by Lipmann Kessel. 63 pages, illustrated. Wolfe Medical Publications, London. £14.00.

High quality colour photographs and numerous line drawings illustrate this text on the coronal transacromical approach to repair of ruptures of the rotator cuff. Volume 34 of the Single Surgical Procedures series.

A Colour Atlas of Left Hemicolectomy by Norman A Matheson. 95 pages, illustrated. Wolfe Medical Publications, London. £15.

Over 180 colour photographs complement the succinct text and illustrate the operation of left hemicolectomy. The author stresses the meticulous attention to detail that is necessary to avoid anastomotic leaks. All trainee surgeons should profit by reading this monograph.

Surgery of the Oesophagus. Edited by T P H Hennessy and A Cuschieri. 363 pages, illustrated. Bailliére Tindall. Eastbourne. £35.00.

There is growing pressure to take the management of oesophageal conditions out of the generality of surgery. As the editors state in their preface, 'The oesophagus is an unforgiving organ'. Distinguished contributors describe the development, anatomy and physiology, together with their disorders. Naturally, hiatal hernia, benign and malignant strictures comprise the major chapters. The writing, the X-rays and line drawings are all clear.

An Autumn Life. How a Surgeon Faced his Fatal Illness. 96 pages, paperback. Faber and Faber, London. £2.95.

Many surgeons, especially those who work in the field of oncology, will remember Percy Helman from Cape Town, who died in 1982. This is a moving personal account from his widow of the poignant loss of one's life partner and of a compassionate and courageous man.