

metastases.<sup>4</sup> Follow up studies are currently in progress.

We have also assessed the haemodynamic changes in patients with cirrhosis.<sup>5</sup> As we expected, these patients also had abnormally raised Doppler perfusion index values but total liver blood flow was significantly reduced. The mechanisms underlying the changes in hepatic perfusion appear to be different in benign and malignant liver diseases. There is experimental evidence that the reduction in portal venous blood flow in subjects with liver metastases is because of increased splanchnic vascular resistance, whereas in cirrhosis, there is an increase in resistance to flow at the sinusoidal level of the liver. We have shown that the congestive index, defined as the ratio of the portal vein cross sectional area to the time averaged velocity of blood in the portal vein, was significantly raised in patients with cirrhosis compared with control subjects and patients with liver metastases. We concluded that duplex/colour Doppler sonography measurement of congestive index can discriminate between the perfusion changes because of the presence of hepatic metastases and those caused by cirrhosis, thereby increasing the diagnostic power of the technique.

The use of duplex/colour Doppler sonography rather than conventional duplex ultrasound would allow almost all patients with benign and malignant liver diseases to be assessed. It simplifies the examination with the ease of accurate identification of vessels of interest, and showing anatomical variations, and the duration of scanning is significantly reduced. This technique is, however, operator dependent and we suggest that a dedicated ultrasonologist is essential for meticulous standardised examinations to be performed, otherwise conflicting conclusions about duplex/colour Doppler sonography flowmetry in the abdomen will result. Further studies are required to explore the full diagnostic potential of this technique.

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## Reply

SIR,— We wish to comment on the letter of Dr Leen *et al* to say that we are delighted that the estimation of the ratio of hepatic arterial flow to total hepatic blood flow using Doppler ultrasound does provide a valuable haemodynamic indicator in both malignant and cirrhotic disease, as we had hoped from our work.

We have noted that Dr Leen *et al* have applied a colour flow Doppler ultrasound system to their measurements and have chosen to study the common hepatic artery. Unfortunately, neither of these options was available to us since we did not have access to a colour flow system for this study. In addition, the original aim of our work was the study of the hepatic arterial buffer response in humans under non-invasive physiological conditions. We had previously established in a pilot study<sup>1</sup> that measurements of proper hepatic arterial flow were possible and the published work was undertaken as a precursor to studying proper hepatic artery and portal venous changes after feeding. The study of common hepatic artery flow was thus inappropriate since the gastric and gastroduodenal components would make a contribution to increase common hepatic artery flow when only hepatic arterial flow was required.

We had hoped to increase the population to whom the technique could be applied by showing that proper hepatic artery flow was a constant proportion of common hepatic artery flow. We showed, however, that the ratio of flow in the two vessels varies from subject to subject and seems to be dependent on the cross sectional areas of the vessels.

We are pleased that the measurements in the common hepatic artery of Leen *et al* do provide constant results and thus extends the population to whom this technique is applicable. We are slightly concerned, however, that the gastric and gastroduodenal components are considered insignificant even in patients with gastric and oesophageal cancer!

We agree entirely with the concluding comments of Dr Leen and colleagues and hope that the full potential of flow measurements in the hepatic artery and portal vein using colour Doppler sonography will be exploited in both research and clinical applications in the future.

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## BOOK REVIEWS

**Current gastroenterology. Vol 11.** Edited by G Gitnick. (Pp 386; illustrated; £69.95.) St Louis, MO: Mosby Year Book, 1991.

The problem with this book is that it is not about current gastroenterology. The authors did as they were told and reviewed 'last year's papers' in their subject but the year in question was mid-1988 to mid-1989. The book came out in late 1991. Such a delay reduces its value greatly. One reason for the delay may be the book's luxurious format - it is a hardback complete with photographs of x rays, CT scans

etc. But I suspect the main reason is that the authors had too much to cope with and could not meet their deadlines. Two of them had well over 300 papers to review. The ten chapters are, in the main, well written and they cover most of the important areas of gastroenterology, with little overlap. The chapter on nutrition is an oddity; it is a didactic review, has a relatively small reference list, and includes much non-gastrointestinal material.

If you like this kind of thing you will find it done just as well and much more currently in *Current opinion in gastroenterology*. I do question, however, the cost-benefit ratio of this approach and the value of the product. It is artificial to review a topic a year at a time and difficult to produce a readable, let alone, well argued article. I myself find articles of this kind hard to read and so tend not to read many of them. I suspect a market survey would show I am not alone. For the authors it is a hard slog producing a book like this; is it really worth all those ruined weekends?

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**Ambulatory oesophageal pH monitoring: practical approach and clinical applications.** By Joel E Richter. (Pp 229; illustrated; £47.) New York: Igaku-Shoin Medical Publishers, 1991.

In his preface, Dr Richter notes that a practical 'how to do it' book on ambulatory oesophageal pH monitoring has not been available hitherto. This book aims to be a practical guide to the technique and to review its applications and limitations. Eighteen American authors have covered the subject comprehensively in seventeen chapters, beginning with an excellent little historical review and concluding with a section on alkaline reflux. Brief case reports, included in several chapters, provide succinct illustrations of why and how pH monitoring can (and sometimes cannot) be used to resolve a clinical problem.

This is undoubtedly a useful book for individuals who are introducing the technique to their own practice. They will soon, however, encounter the problems faced by everyone with experience of pH monitoring and the text is a little disappointing in its treatment of some of these difficult areas. The interpretation of oesophageal pH results obtained in patients with non-cardiac (or, more usually, normal coronary arteriogram) chest pain and in asthmatics could perhaps have been addressed more directly to aid the clinician who must make a clinical decision on the basis of the oesophageal findings.

My first consultation of the index - seeking guidance on equipment disinfection - referred me to the wrong page: the information provided in the section to which the index should refer is inadequate for a book claiming to be a practical guide. Other topics seem adequately and correctly indexed. Overall, the book scores 7 out of 10. There is nothing similar on the market and only by obtaining numerous journals can the reader obtain the information that is gathered together here in a sensible sequence. Like the technique itself, the book does not provide all the answers, but it is probably the best there is just now.

R C HEADING

**Ulcer disease. Investigation and basis for therapy.** Edited by Edward A Swabb and