cularis, and serosa receive their blood supply by secondary branches from the submucosal plexus of vessels. Vasa recta have clearly been demonstrated passing through the bowel wall and joining the submucosal plexus. Hence it seems probable that reduced serosal perfusion stems from either extramural vascular disease or obliterator lesions within the submucosal plexus.

The colonic microcirculation represents the final common pathway for the delivery of oxygen and nutrients to the tissues of the bowel wall and we agree with Fawcett et al that its integrity is critical to successful anastomotic healing. However, the importance of the serosal plexus, as emphasised by these authors remains open to question. It is noteworthy that the distal two-thirds of the colon is devoid of serosa and hence it is untenable that the vasculature of this layer plays any part in the healing of anastomoses below the peritoneal reflection. Based on our own microangiographic and fluorescent x ray analysis studies, 12-14 the submucosal region provides the cornerstone of perfusion of other layers of the bowel wall. We believe that preservation of the submucosal plexus by careful extra-mucosal anastomosis provides the most favourable set of circumstances for uneventful anastomotic healing.

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Reply

Editor—The work by Mr Carr on the colonic microcirculation is well known and we are grateful for his comments. He raises several points that require clarification.

In our study, the incidence of microvascular disease was assessed by examining all vessels apparent in at least two sections taken from the anastomotic margin. (Sections taken fur- ther away may not necessarily reflect the state of the vasculature at the anastomosis.) The incidence of the lesions can be easily assessed visually, particularly in the intima, which is highlighted by this technique. Histological analysis was focused on intimal changes rather than others already well documented such as medial hypertrophy, because, as the discussion section of the paper indicates, our main interest is in the possible altered response to vasoactive substances that may occur in the presence of a diseased endothelium.

Mr Carr said his group were unable to show a correlation between smoking and micro- vascular disease in their research. We cannot explain this difference in results with any certainty, but would suggest that one reason for this discrepancy may be that this study, while examining fewer vessels overall than did Carr et al, involved nearly three times as many patients. Our study showed that not all smokers exhibit colonic microvascular disease. Thus the number of patients involved, the less likely it is one would find a significant correlation it it existed.

Our description of the submucosa 'deriving' its blood supply from the serosa is poorly phrased and we got that for this. We accept that the serosa is principally supplied by recurrent branches arising from the submu- cosal plexus. Our intention was simply to point out that to reach the submucosal vessels, the vessels must pass through the serosa. If disease is present in the vessels as they trav- erse the serosa, this clearly may affect the distal circulation. We thus agree that sub- mucosal perfusion may still be the critical factor in anastomotic healing, as we stated in the paper.

We would take issue, however, with Mr Carr's comments concerning the role of the serosal layer in anastomoses formed below the peritoneal reflection. While it is true that the distal two thirds of the rectum has no serosal covering, the proximal end of such anasto- moses are formed by intraperitoneal colon, which does have a serosal coat. The sig- nificance of this serosal layer and its vascularity is open to question, but it is of interest to note that when a colorectal anastomosis breaks down as a consequence of ischaemia, it is more often than not the proximal end of the anastomosis that is at fault.

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There have been few advances in modern general surgery that have had such an impact on the management of a common problem as the introduction of laparoscopic cholecystec- tomy (LC). This book commemorates the first five years of its widespread use by reporting the details of an international meeting held in Bern, Switzerland in May 1995. It generally represents a European perspective but there is limited US input.

The volume begins with a general introduc- tion to gall stone disease, which includes chapters on the pathogenesis of gall stones and the assessment of patients, the types of treat- ment modalities available, and concludes with a summary of the history of cholecystectomy and a comparison between open versus lap- aroscopic procedures. Subsequently, the report on various different countries' experi- ences with LC and has chapters from sur- geons in Switzerland, UK, Austria, Berlin, Hungary, and Chile.

This is a deal devoted to 'advanced techniques' with articles on LC and acute cholecystitis and pancreatitis, the use of intra- operative imaging of the biliary tree with cholangiography and ultrasonography, and the laparoscopic cholecystectomy of multiple bile duct stones. Unfortunately, the authors of these latter sections sit comfortably on the fence and fail to provide hard advice on whether operative cholangiography should be performed, the best way of managing stones under varying circumstances. Expert guidance could have replaced a 'balanced' reflection of controversies.

Predictably the volume finishes with a sec- tion on the complications of LC and their management. This covers experiences with high risk patients, access related complica- tions, bile duct injuries and ends rather incon- gruously for the section with a chapter on gall bladder cancer.

Generally the volume is very readable and well presented, allowing the reader to browse rapidly through its contents and yet it contains a great deal of information on recent published data with a general overview LC and also gall stone disease and cholecystectomy in general. One could envisage this summary of information being a very useful source of reference in the more junior area and this is the volume's main strength.

There is little in the way of novel concepts contained within the book and it is not the best source for detailed information about the management of bile duct injuries for example. The section on the management on the compli- cated LC was generally rather weak and would have benefited from more pages of text with less emphasis on the experiences from different countries, the selection of which seemed arbitrary and I suspect reflected the individual biases of their respective authors.

While the width of topics covered was good, there were a couple of general omissions, namely: the impact of this technique on the training of surgeons and also the comparison of LC with minicholecystectomy, which received much attention in the recent Royal College of Surgeons of England systematic review. It would be interesting to know of the European experience with these two opera- tions and how it compares with the UK.

Ultimately, the book is a treasure trove of references and background data but contains little new information to the experienced gen- eral surgeon.