Correspondence

Histological changes in venous grafts

We read with interest the recent paper which provided some data regarding the histological changes in "failed" aortocoronary saphenous vein grafts, but feel that some points merit further consideration.

No data were provided in the article as to the exact length of time these grafts had been in situ. This information would have been of interest because the features of atherosclerosis in coronary vein grafts are unusual before a period of five years. It has also been suggested that the atherosclerotic process in vein grafts may be intrinsically different from that in the native artery.1 Native coronary atherosclerosis is usually focal, with eccentric plaques which have a fibrous cap overlying a core of lipid debris. Saphenous vein graft atherosclerosis, on the other hand, is typically diffuse and concentric, and does not usually have a fibrous cap, and may have a heavy inflammatory infiltrate with lipid containing giant cells.2 These differences may influence the management of these patients as the cellular lesions in vein grafts are prone to embolisation, and recent reports suggest that the presence of a late stenosis in a vein graft to the left anterior descending coronary artery is an indication for reoperation, even in the absence of severe symptoms.3 It would have been interesting to see if these histological features had been particularly conspicuous, and whether they became so.

The authors "did not see any of the acute changes due to the endothelial damage caused by the preparation of these grafts." Endothelial damage is indeed a well recognised feature of vein preparation, but the process of re-endothelialisation after implantation into the arterial system is generally very efficient.4 Obviously the rate depends on the extent of damage incurred, but in the length of damage we managed to re-endothelialise by six weeks.5 Admittedly, in the presence of severe damage, a fully confluent endothelial layer may not be achieved in all areas, but it would have been surprising if the authors had been able to maintain this in this particular series of grafts. They also suggest that perfusion of the vein before surgery, using low pressure and anticoagulated blood, will result in less intimal thickening and longer graft survival. There is indeed experimental evidence which suggests that techniques of vein preparation may influence long term patency, but this is by no means established. More recent evidence than that cited by the authors has shown that intimal hyperplasia occurs to the same extent in veins which have been implanted undistended with a complete endothelial layer, compared with veins implanted after distension to 600 mm Hg.6 This suggests, as is commonly accepted, that the process of intimal hyperplasia in vein grafts is complicated and multifactorial in aetiology. More importantly, no clinical trial has ever been performed which suggests vein preparation techniques may influence the long term outcome of coronary artery bypass grafting. We agree, however, that changes in pressure and blood flow may be important in the genesis of intimal thickening, and believe that more detailed studies of "failed" coronary saphenous vein grafts may provide further insight into this complex phenomenon.

M UNDERWOOD
A COUMBE
The Royal London Hospital,
Pritchard, London


Dr Charles comments:

We thank Drs Underwood and Coumbé for their interest in our paper. We were interested in the changes seen in veins as a response to pressure. As the pressure in the veins of the lower leg is nearly the same as that in saphenous coronary vein grafts, we looked at both to compare the histological changes, as well as veins at different sites and therefore at different pressures. The grafts had all been in for more than a year, and most for more than three years. We did not expect any acute changes to have been present, although these were not analysed further. We were interested to learn, however, that raised pressure alone does not cause the lipid rich atheromatous plaque seen in the grafts, as these are not seen in varicose veins. We agree that many factors are involved in the pathogenesis of atherosclerotic plaques in grafts, but we feel that endothelial preservation is important. This may be most relevant in early graft occlusion, as suggested in the paper cited,7 where there were large increases in occluded grafts in the distented veins, although these were not analysed further. It is also noted that these were in normocholesterolamic pigs followed up for up to 43 weeks and no atheroma was present. The discussion notes the importance of cholesterol in late graft occlusion, and cholesterol deposition may be enhanced by distension.

M JADEN CHARLES


Apoprotein metabolism: a new type of Müllerian metastasis

I read with interest the article by Allan et al.8 The authors note in their discussion that, "this type of metastasis may give rise to a primary apocrine carcinoma in Müllerian derivatives which has yet to be described". One is reminded of the paper by Larum9 in which the authors addresses that group of conditions under several headings including "Diseases which have not yet occurred but will be discovered at some time in the future, sooner or later."

Citing possible examples, Larum mentions moouduct poisoning and renal polycy- tomas. The suggestion by Allan et al for a potentially new carcinoma arising in the ovary of course raises great possibilities. I must, therefore, chasize the authors for failing to cite this seminal paper which deals with hitherto undescribed, albeit awaiting to be described, entities.

P KNEAFSEY
Footstalls Hospital, Calgary, Alberta T2N 2T9, Canada


Use of low molecular weight heparin during pregnancy

I wish to thank the members of the Working Party of the Haemostasis and Thrombosis Task for their comprehensive and most informative article, Guidelines on the prevention, investigation and management of thrombosis associated with pregnancy.1 I would also like to document my personal experience with the use of low molecular weight heparin during pregnancy.

I have used low molecular weight heparin (Fragmin) in five cases of prophylactic anticoagulation. All five had a history of deep venous thrombosis (two during the previous pregnancy) without any known thrombophilic abnormality. Their age ranges from 25 to 34 and their weight from 55 kg to 68 kg. Fragmin treatment was started between 15 and 18 weeks of gestation, at 2500 U (two patients) or 5000 U (three patients) daily. One patient developed a heparin induced skin reaction at the injection sites, so treatment had to be stopped.2 The other patients continued treatment without any untoward side effects, until 24 hours before delivery. Because of the paucity of information concerning the secretion of Fragmin in breast milk, postnatal anticoagulation was continued with unfractionated heparin (12 hourly) for four weeks.

As the low molecular weight heparins are relatively new, there is little experience of their use during pregnancy.3 The main reasons for using low molecular weight heparin in the above patients were the convenience of once daily injection and the theoretical advantage of the lower dose causing less bone demineralisation.

A MANOHARAN
Department of Clinical Haematology, St George Hospital, Kogarah, NSW 2217, Australia
Histological changes in venous grafts.

M J Underwood and A Coumbe

doi: 10.1136/jcp.47.1.94-a

Updated information and services can be found at:
http://jcp.bmj.com/content/47/1/94.1.citation

*These include:*

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/