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Surgery for coronary artery disease

The morbidity and mortality from coronary artery disease have been increasing in recent years, particularly among younger men,[1 2] and one of the treatments being used to stem this tide is aortocoronary bypass surgery. Its place in the routine management of coronary artery disease will be decided only when results are available of really long-term follow-up and of carefully controlled comparisons of medical and surgical therapy.

Much information on operative mortality, functional results, and graft patency has accumulated with excellent previous reviews,[3 4] but fresh data have come from recent studies from Baylor[5] on the mechanisms of relief of angina after aortocoronary bypass surgery and from the Veterans Administration Cooperative Study[6] on the effects on survival of randomised medical and surgical therapy for chronic stable angina pectoris. The main established indication for aortocoronary bypass grafting is the elective treatment of chronic stable angina pectoris refractory to medical treatment. Results may be considered in terms of hospital mortality; symptomatic relief and postoperative functional capacity; the progression of the disease after surgery; the prevention of myocardial infarction; and the promotion of longevity.

Hospital mortality varies between 0·8 and 12%, factors influencing this being the experience of the surgical team; concomitant surgical procedures, such as aneurysm resection; the preoperative state of the left ventricle; and the extent and severity of the coronary artery disease. Mortality is increased when the left main stem coronary artery is affected and when complex surgery is needed such as left ventricular resection or valve replacement.

Perioperative myocardial infarction is reported in between 5 and 10% of patients overall, but in studies where it has been looked for carefully the incidence is closer to 20%. The popular belief that infarction is relatively benign in these circumstances seems to be mistaken.[3] After surgery about 70% of patients report relief of their symptoms, and up to 90% are improved, though there is a tendency for a progressive decline in these figures with length of follow-up. Recurrent angina, late myocardial infarction, and late death represent either progression of pre-existing coronary artery disease or occlusion of the graft. Studies of postoperative left ventricular function have mostly failed to show improvement except in a minority of cases. Exercise testing before and after surgery shows results less dramatic than symptomatic improvement. Many patients do show improvement in the duration of exercise, though in others ischaemic ST depression may persist —sometimes indicating occlusion of the grafts.

What, then, is the mechanism of relief of angina by aortocoronary bypass surgery? The Baylor group[5] compared the results of exercise studies before and after treatment in a group of patients randomly allocated to medical and surgical treatment. The possibilities they considered included an increase in the myocardial oxygen supply, perioperative infarction of the ischaemic zone, improvement of left ventricular function, denervation of the ischaemic zone, and the general placebo effect of surgery. They found that infarction and improvement of left ventricular function were uncommon. There was, however, a relatively high incidence of ischaemic ST depression without angina in the surgically treated group, compared with the medically treated group, in whom ST segment depression and angina generally coincided. In view of the clear symptomatic benefit of surgery they concluded that some of its benefits might be related to denervation or to a placebo effect—in addition to the improvement of myocardial oxygen supply associated with patent grafts.

Clearly bypass grafting does not protect the patient from progression of the disease in ungrafted arteries or in arterial segments distal to successful grafts. Furthermore, progression of disease is common in the artery proximal to the graft (whether patent or not), often leading to complete occlusion of the native vessel. After the initial three months overall graft patency rates are about 80%, with most occlusions occurring early after surgery. There is a small incidence of progressive occlusion later, though current experience is limited to four years of follow-up. Graft occlusion is related to such technical factors as the size of vessel grafted, presence of distal disease, location of the graft, concomitant endarterectomy, graft flow rates measured at operation, and the type of vessel (saphenous vein or internal mammary artery) used for grafting.

As yet we have no conclusive evidence on the protective effect of surgery against future myocardial infarction. Conclusive evidence is also lacking on the effects of surgery on life span. Most attempts at comparisons of medical and surgical treatment have used as the medical treatment group patients studied before the availability of coronary artery surgery. Both medical and surgical techniques are evolving, and only extensive, simultaneous, controlled trials will provide the answer to this question. Preliminary results are available

from the Veterans Administration Cooperative Study,[6] in which patients studied between 1972 and 1974 were randomly allocated to medical and surgical treatment groups. After excluding those with left main stem coronary artery disease, there was no significant difference in survival at three years between medical treatment (87%) and surgical treatment (88%), nor was there any significant difference in survival in subgroups classified according to the extent of coronary artery disease or pretreatment left ventricular function. Results in the subgroup with left main stem coronary artery disease had already been reported[7] and showed significant improvement in survival with surgical treatment.

In patients with unstable angina pectoris many surgical series have offered encouraging results, but aggressive medical treatment can claim comparable successes, and most centres pursue this course initially. Investigation and surgical treatment are pursued either electively or with the failure of medical treatment. There is a place for surgery in patients with acute myocardial infarction—either to salvage the myocardium or for complications such as cardiogenic shock—but the published reports are of small heterogeneous series, and the place of emergency operation remains to be clarified. Finally, what about asymptomatic patients? Our experience is limited, and the present studies on survival do not justify extensive screening to find and treat such patients.

[1] Clayton, D G, Taylor, D, and Shaper, A G, *Health Trends*, 1977, **9**, 1.
[2] *British Medical Journal*, 1977, **2**, 537.
[3] Dunkman, W B, *et al*, *Annals of Internal Medicine*, 1974, **81**, 817.
[4] Mundth, E D, and Austen, W G, *New England Journal of Medicine*, 1975, **293**. 13, 75, 124.
[5] Mnayer, M, Chahine, R A, and Raizner, A E, *British Heart Journal*, 1977, **39**, 605.
[6] Murphy, M L, *et al*, *New England Journal of Medicine*, 1977, **297**, 621.
[7] Takaro, T, *et al*, *Circulation*, 1976, **54**, suppl III, 107.

To sign or not to sign?

Journalistic anonymity is no longer fashionable: correspondents now have bylines, book reviews are signed, and the curious can usually put a name to the initials which accompany an obituary notice. Yet on this side of the Atlantic more leading articles are still unsigned than signed, and even that champion for the naming of parts, the ebullient editor of *World Medicine*,[1] still keeps his readers guessing about the authorship of its authoritative, experienced, and even prejudiced leading articles. Is this attitude outdated? Should editors give the reader what benefit there is of knowing the author of an editorial, as Dr Gatherer argues (p 647)? And would the authority of a journal be diminished or enhanced by revealing all?

Authoritative opinions may certainly be found to support the signing argument. The Committee on Editorial Policy of the Council of Biological Editors[2] had forthright views: "Because of the original purpose of editorials, the first person was expressed in the plural (we, us), and the writer was not identified. These practices are still widely observed but may be questioned today as artificial and anachronistic conventions. Many current editorials . . . do not represent the views of the editors or the publishers, but rather of an invited expert. For this reason, it would seem preferable for editorials to be signed, and to be written in the first person singular. Such identification also enhances the writer's sense of responsibility."

Two thoughtful British experts are equally convinced that anonymity is bad. In a draft of a book[3] which they have generously allowed us to quote they write: "Why not, then, name the authors and make it clear that they are real people, who can be mistaken in their judgment, rather than immortal beings whose prophetic utterances cannot be challenged or refuted?"

With so much authority massed against editorial anonymity, then, can the *BMJ* justify continuing the practice? We believe that we can, on several grounds. Firstly, the choice of the author is the editor's responsibility, usually with the aim of getting an authoritative and middle-of-the-road article. If, conversely, the aim is to put forward a polar view, then the editor will commission a signed article to appear elsewhere in the journal. The occasions for a propagandist leading article have to be chosen with care. Secondly, if the case argued by the leader writer is wrong, his readers will soon let the editor have details of any mistakes in angry contributions to the correspondence column—and, indeed, these may be a better way of ensuring that the truth gets across to the non-expert reader than any formal correction.

Next, many authors, though experts, are still young and unknown, yet those readers with traditional professional snobbery would assign more weight to an article according to the length of a curriculum vitae in the *Medical Directory* than to what the editorial actually says. By naming an author, moreover, the journal may run into two other difficulties: doctors may be tempted to criticise the article unjustly because they have a feud with its author; or, alternatively, because they are his friends, refrain from justified criticism with the aim of not hurting his feelings.

The fourth argument justifying editorial anonymity is the "political" element—not only medicopolitics, but also an editorial policy that the drafter may not necessarily agree with, and few topics are now free of such overtones. For example, a lecturer in obstetrics might be happy to sign an article dealing solely with the technique of suction termination of pregnancy, but not one which had a piece added by the editor on the desirability of making early abortions more widely available. Another focus for authors' objections if their names were given is the heavy rewriting that most drafts undergo, including those written by the editorial staff: in the *BMJ* office each draft is subedited by no fewer than three people—not editorial nitpicking, but necessary, we believe, in the interests of accuracy and clarity.

Finally, anonymity does enable somebody confidentially concerned in a contentious issue to bring it to the surface. Such occasions are rare, but every editor can recall instances when informed comments have altered official policy in the making for the general good. Some might argue that this is cowardice, and that such a person should resign from whatever committee is concerned and publish his view. Nevertheless, given the way our society works, this would result in fewer disclosures rather than more and would be against the public interest.

These remarks apply only to general biomedical journals—such as the *BMJ*, *Lancet*, and *Nature*—and there may be a good case for special journals having signed editorials: here experts are writing for experts, and often opinions rather than facts are paramount. Nevertheless, for all the reasons we have given, the *BMJ* still prefers editorial anonymity, and at present one thing alone would make us relinquish this principle—a shortage of leader writers (which, it is rumoured, bulked larger than any moral scruples as a deciding factor when several American journals changed their policy). Few of our leader writers have said that they would like to be named;