Return to work after coronary artery surgery for angina

J WALLWORK, B POTTER, P K CAVES

British Medical Journal, 1978, 2, 1680-1681

Summary and conclusions

The working habits of 115 consecutive patients who underwent coronary artery vein bypass grafting for angina were assessed. Only 25 patients worked up to the operation. Seven patients were housewives and seven retired. Sixty-eight patients had had to give up work because of their angina pectoris, and most of these had been off work for between six months and two years. After the operation 75 patients returned to full-time work, 59 within two to six months. These 75 patients included 23 of the 25 at work preoperatively and 47 of the 68 unable to work preoperatively. Most patients returned to their original occupation.

We conclude that coronary artery surgery, as well as bringing symptomatic relief, increases the patient's ability to return to and maintain gainful employment.

Introduction

Coronary artery bypass grafting is an established form of treatment for angina pectoris, offering most patients good symptomatic relief and low operative and perioperative mortality. To date, little attention has been given to the degree to which patients are capable of leading a normal life post-operatively and how well they are rehabilitated into the family and social life they enjoyed before the onset of their symptoms. An important index of patient rehabilitation is the ability to return to and regularly maintain gainful employment. This paper reports the results of a study of the working habits before and after operation of patients who underwent saphenous vein coronary artery bypass grafting for angina pectoris.

Patients and methods

During two years in Edinburgh 115 consecutive patients underwent coronary artery bypass grafting for angina. They comprised 104 men aged 34-73 years and 11 women aged 40-69 years. All patients had angina pectoris unrelieved by medical treatment, and most were in the New York Heart Association classification grades III and IV. One hundred and five patients were operated on electively for stable angina pectoris, and 10 patients, either urgently or as an emergency, for unstable angina pectoris or stenosis of the left main coronary artery. Patients were not selected on social or economic grounds, and as most lived and continue to live in the area served by the cardiac surgical unit in which the operation was performed they are considered to be representative of the general population in that area.

One patient (0.9%) died in hospital from myocardial infarction four days after operation, and the other 114 patients were discharged after a mean postoperative period of 10 days. Information about the working habits before and after operation of almost all the patients was obtained by a combination of structured interview and questionnaire.

At the time data were collected the follow-up period was 6-30 months (mean 16 months). No patient was lost to medical follow-up, but incomplete data were obtained on the working habits of eight patients and none was available for three.

Results

Table I shows the preoperative working habits of the 115 patients. Most had been off work for between six months and two years. Thirteen patients indicated that before operation they had had to change to a lighter job because of their symptoms.

TABLE I—Preoperative work status of patients

No working before operation	..	..	..	..	..	..	..	25
No off work because of angina:								
<6 months	..	..	..	..	..	..	..	26
>6 months	..	..	..	..	..	..	..	42
No retired from work	..	..	..	..	..	..	..	7
No of housewives	..	..	..	..	..	..	..	7
Incomplete or no information	..	..	..	..	..	..	..	8
Total								115

Six late deaths occurred after operation. Two men died suddenly at two and six months postoperatively from presumed myocardial infarction, and one woman died three months postoperatively during repeat cardiac catheterisation. None of these patients had returned to work before their deaths. Out of the 75 patients who returned to full-time employment, three subsequently died: one man died 12 months postoperatively from self-poisoning and two men suddenly after 21 months from myocardial infarction verified at necropsy (table II).

TABLE II—Postoperative details of patients discharged from hospital

No who returned to work	..	..	..	..	..	..	..	75*
No not working	..	..	..	..	..	..	..	32
No who died without returning to work	..	..	..	..	..	..	..	3
Inadequate or no information	..	..	..	..	..	..	..	4
Total								114

*Three subsequently died during follow-up period.

TABLE III—Preoperative work status of the 75 patients who returned to work after operation

Preoperative work status	No of patients	No working after operation
Working	25	23
Off work:		
<6 months	26	20
>6 months	42	27
No information	8	5

Table III compares the postoperative working habits of patients with their preoperative status. Most (53) of the 75 patients who returned to work did so two to six months after operation. Six returned after two months, and 16 after at least six months. Most returned to their original preoperative occupations, and only eight patients were known to have changed their occupations postoperatively. Of the remaining 39 patients, no information about postoperative work habit was available on four. Three died postoperatively, and 32 patients were alive but not working when reviewed (table IV). Five further patients retired from work later, and none of the patients who had retired before operation because of cardiac symptoms returned to work postoperatively.

Royal Infirmary, Glasgow G4 0SF

J WALLWORK, MB, FRCSE, senior registrar in cardiothoracic surgery
P K CAVES, MB, FRCSE, late professor of cardiac surgery

Department of Pathology, University of Edinburgh
B POTTER, BSC, MB, lecturer

TABLE IV—Details of patients who did not return to work after operation

No who died	3
No of housewives	7
No retired from work	12
No not working	13
No information	4
Total	39

When reviewed, 13 patients who might have been expected to be in full-time employment were not working. Of these 13, two had worked up until their operation, three had been off work for less than six months postoperatively, and eight had been off work for more than six months, two for more than two years. Six (46%) of these 13 patients had recurrent or unrelieved angina, compared with only 10 (13%) of the 75 patients who returned to work (table V).

TABLE V—Proportions of patients with angina after operation according to work status

Work status	No of patients	No with angina
Working	75	10
Off work	13	6
Retired	12	3
Housewife	7	2
Total	107	21

Discussion

The aim of treatment for chronic disease in modern medicine must be to maintain or restore as normal a lifestyle as possible for each patient. A study of patients with angina pectoris referred for surgical treatment in Edinburgh showed that symptomatic relief obtained before operation had been achieved not only by medication with beta-blocking drugs and glyceryl trinitrate but also by radically limiting the activities of the patient. Curtailing physically active hobbies or sports, avoiding emotional stress, abstaining from sexual intercourse, and retiring from work, either permanently or temporarily, were inevitable consequences of chronic angina pectoris. In assessing the results of surgical treatment for angina, therefore, we attempted to study not only the symptomatic relief from angina but also the improvement in the quality of life that the patient achieved. Symptomatic relief from angina, although subjective, is relatively easy to assess, and the complete relief from anginal pain on exercise that about 70-80% of patients achieve after successful operation has been well documented. Our results, with 79% of patients achieving complete symptomatic relief in the early postoperative period, agree with those of many other series.¹⁻⁴

Assessing a patient's quality of life is much more difficult. It is important to attempt to do so, however, for if most patients with angina pectoris alter their lifestyle preoperatively to alleviate the symptoms of their disease, the ability of the operation to restore a normal lifestyle to most patients, as well as to relieve their symptoms, would be an important argument in favour of surgery. In this initial study we selected the working habits before and after operation of patients undergoing saphenous vein coronary artery bypass grafting for angina as a means of assessing any change in the patient's quality of life that resulted from operation.

Patients referred for surgery almost always had angina unrelieved by medical treatment, so the preoperative finding that most had altered their working habits was hardly surprising. Only 25% of those patients who otherwise might have been working were able to do so in the immediate preoperative period. Thirty-seven per cent had been off work for more than six months, some for several years.

Patients whose angina had been completely relieved by operation were advised to return to work about 10-12 weeks postoperatively, by which time their median sternotomy incision was firmly united. They were encouraged to return to their

preoperative employment, and all but eight patients did so, many returning to physically demanding work such as mining or trawler fishing. Out of the total available work force after operation (88 patients), 75 (85%) returned to work.

Although it is not possible to divide patients accurately into accepted socioeconomic classes from the information available, their job descriptions permitted division into two groups—namely, professional and white-collar workers (40%), and manual and blue-collar workers (60%). Sixty per cent of the professional and white-collar workers were at work before operation, compared with 22% of the manual and blue-collar work force. After surgery 80% of both groups returned to work. These preoperative and postoperative differences may reflect either the general physical demands made on each group or differing attitudes to work in each group, and we hope to clarify this with further study. Rimm *et al*⁵ also reported a high rate of return to work, with more patients (30%) changing to a lighter job. Barnes *et al*⁶ did not see any improvement in return to work or hours worked postoperatively and felt that lack of incentive to return to work on the part of the patients, as well as insufficient encouragement from their doctors, may have contributed to this finding.

Although women represent a small percentage of patients undergoing coronary artery bypass grafting, we included them in our findings. All four women who had been at work before surgery returned to work, and only two of the housewives stated that their capacity to do housework had not increased after operation.

Some of the 13 patients not working postoperatively were unemployed because they could not find suitable employment and some because employers would not accept them for work after a heart operation. We found that the patients who experienced the greatest difficulty in returning to their original employment were drivers of heavy goods vehicles, and correspondence between hospital medical staff and the employers concerned was valuable in enabling several patients to return to their old jobs.

We found that cardiac surgery, as well as bringing symptomatic relief, increases the patient's ability to return to and maintain gainful employment. It will be of considerable importance to discover whether this improvement in the working ability of these patients is maintained and to assess benefit to the community in general. By considering the cost of coronary artery surgery only in terms of investment in expensive equipment and the cost of the operation itself,⁷⁻¹⁰ a seriously distorted view of the cost-benefit of such surgery may result. The overall cost-benefit is the subject of further study in our department. The evidence to date, however, supports the hypothesis that the benefits of coronary artery surgery for the patient and the community are considerably greater than the cost to the patient and society of his remaining symptomatically unrelieved, unemployed, and supported by the state.

References

- 1 Aldeman, E L, Matlof, H J, and Wexler, L, *New England Journal of Medicine*, 1977, **288**, 535.
- 2 Anderson, R P, Rakimtoola, S H, and Burcheck, L J, *Circulation*, 1974, **50**, 274.
- 3 Cannon, D S, Miller, D G, and Shumway, N E, *Circulation*, 1974, **49**, 77.
- 4 Wilson, W S, *Heart and Lung*, 1974, **3**, 345.
- 5 Rimm, A A, *et al*, *Journal of the American Medical Association*, 1976, **236**, 361.
- 6 Barnes, G K, *et al*, *Journal of the American Medical Association*, 1977, **238**, 1259.
- 7 Mustard, R A, *Annals of Thoracic Surgery*, 1977, **24**, 400.
- 8 Weinstein, M C, Pliskin, J S, and Stason, W B, *Coronary Artery Bypass Surgery: Discussion and Policy Analysis in Costs, Risks and Benefits of Surgery*. London, Oxford University Press, 1977.
- 9 Marty, A T, *et al*, *Annals of Thoracic Surgery*, 1977, **24**, 409.
- 10 Brown, A H, and Gibbs, O R, The Cost Effectiveness of Coronary Grafting, abstract. Australian Society of Cardiology, 1977.

(Accepted 25 October 1978)