

EVOLUTION OF PRESENT TECHNIQUES FOR MYOCARDIAL REVASCULARISATION

By W. Dudley Johnson

While surgeons have attempted to reconstruct coronary flow for over 35 years, only one indirect approach developed any popularity, and that was the Vineberg procedure. While now abandoned by most surgeons our experience has indicated that this procedure can provide significant flow in some patients (Measured as high as 85 cc. per minute). It is now virtually never used alone, but always in combination with one or more direct grafts. Situations where it is felt to be used will be discussed. Many minor variations of technique are now used in inserting coronary vein grafts. Facts which appear do not influence the overall outcome in-

clude methods of suturing, normal of hypothermia perfusion, and variable tests of hemodilution while on bypass. Almost usually accepted as essential for most patients is the use of intermittent anoxic arrest during coronary suturing and/or the use of the distal end to side coronary anastomosis. Direct mammary artery to coronary anastomosis is rapidly becoming more popular by using one or more mammary arteries. While not nearly as versatile or applicable as the vein graft, it appears to be the procedure of choice where it can be used. Bypass grafts (one to six) can be inserted in over 99 percent of patients. This does not imply that all patients need surgery nor will all hearts respond to the surgery procedure. Nearly five years experience has given valuable guidelines as to which patients are candidates for this surgery.

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EMERGENCY MYOCARDIAL REVASCULARISATION

By Magdi H. Yacoub

Aorto coronary saphenous vein bypass grafts have proved effective as a method of direct myocardial revascularisation. Although this method has been used mainly for the treatment of patients with intractable angina, its use is currently being extended to deal with some forms of acute myocardial ischaemia on an emergency basis. The syndromes which are being considered for emergency revascularisation include the preinfarction syndrome, patients with clinical evidence of extending infarction and patients with cardiogenic shock or resistant ventricular arrhythmia following myocardial infarction. It is essential at this stage of our knowledge to accurately define these clinical syndromes in order to evaluate results and develop a rational approach to the management of these patients.

The preinfarction syndrome is a fairly well defined clinical state characterised by increase in frequency and change in pattern of angina which is often associated with ST changes in the electrocardiogram. The risk of coronary angiography and operative treat-

ment in that group is low and postoperative results are gratifying. The same applies for patients who, following the development of a small myocardial infarct continue to have severe angina suggesting imminent or actual extension of the infarct.

Cardiogenic shock, following myocardial infarction may be due to mechanical complications (acute aneurysm, mitral regurgitation or ruptured interventricular septum), massive myocardial death or less extensive infarction with severe left ventricular failure due to malfunction of the peri-infarction zone. Progressive morphologic and enzymatic changes in this area may lead to extension of the infarct. Emergency revascularisation may reverse this process. Circulatory assist devices may be necessary during investigation and preparation for operation. The operation risk in this group remains high. Further experience in this field is required to establish criteria for early selection of these patients and development of more effective circulatory assist devices to prevent onset of irreversible damage to the myocardium and multiorgan failure. It is concluded that emergency revascularisation will play an important role in the management of patients with ischaemic heart disease.

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SURGICAL CONSIDERATIONS OF ASSOCIATED ARTERIAL OCCLUSIVE DISEASE
IN CORONARY ARTERIAL DISEASE

By Michael E. DeBakey

Until recently most surgical technics for coronary arterial disease were based on an indirect approach to improving the coronary circulation. These procedures were eventually abandoned, largely because of inability to assess the results. Development of coronary arteriography permitted precise delineation of coronary disease

and better understanding of its patterns. Depending on the site and extent of occlusion, the procedures used today to restore circulation in the diseased or occluded coronary arterial bed are carbon dioxide endarterectomy, bypass vein grafting, or a combination of these methods. Indications for the various procedures based on coronary arteriograms, examples of operative techniques, post-operative angiographic studies, and results will be presented in the review of the latest operative technics of myocardial revascularization.

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