Indications for surgery

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The decision to o ff er CABG is based on the balance between expected benefit and potential risks to the patient. Two issues need to be addressed when determining surgical suitability: the appropriateness of revascularisation and the relative merits of CABG versus the alternative PCI. Current best evidence shows that revascularisation can be readily justified on symptomatic grounds in patients with persistent limiting symptoms (angina or angina equivalent) despite optimal medical therapy and/or on prognostic grounds in certain anatomical patterns of disease. The myocardial revascularisation guidelines of the Euro - pean Society of Cardiology and the European Association for Cardio-Thoracic Surgery (EACTS) can be useful for identify - ing patients with certain angiographic features who can benefit from surgery , such as patients with comple x coronary anatomy or left main stem disease. Summary box 59.6 Indications for surgery /uni25CF /uni25CF /uni25CF . In /uni25CF Acute coronary syndromes - Substantial benefit is gained with an early invasive revascu - larisation strategy with PCI or surgery or both. After defining the anatomy with angiography , a decision about the type and extent of intervention can be made. Angiography in combina - - tion with ECG changes often identifies the culprit lesion and - PCI may be used to treat it. In patients who become stab le after an episode of ACS, the indications for CABG are similar to those for pa tients with stable chronic disease (see Summary box 59.6).

> “ 50% stenosis of the left main stem (‘critical left main stem disease’) 50% stenosis of the proximal left anterior interventricular artery Three main coronary arteries diseased (‘triple-vessel disease’) Two-vessel disease including the proximal LAD Moderate/signi /f_i cant Severe Occluded 50–69% 70% reduction Complete occlusion 75% 90% 100%

and CABG. The benefits of PCI in patients with non-ST seg ment elevation occur with early intervention whereas the ben efits of CABG are greatest when patients undergo surgery after several days of medical stabilisation. However, emergency CABG ma y be indicated for unstable patients with left main stem, multivessel disease and failed PCI. Surgery for the complications of myocardial infarction MI leads to myocyte necrosis that usually heals by formation of scar tissue but may lead to rupture of the ventricular wall. Free rupture of the ventricle is usually fatal. V entricular septal rupture typically presents 3–7 days after infarction with pulmonary oedema, a pansystolic mur mur and haemodynamic instability . Advances in reperfusion therapy such as early access to angiography/PCI services have r educed the incidence to <1%. Diagnosis is usually confirmed with echocardiography , and repair can be performed with a pericardial or artificial Dacron patch in addition to CABG for diseased vessels supplying viable myocardium. Such sur gery is usually associated with significant mortality owing to the associated impairment of the ventricular function. Mitral valve papillary muscle necrosis causes acute mitral regurgita tion. Diagnosis is made by echocardiograph y , and right heart catheterisation may be required in the

presence of poor right ventricular function and high pulmonary pressure . Mitral valve intervention in addition to CABG is usually necessary , but the mortality rate is higher than in valve intervention for non-ischaemic disease. V entricular aneurysm may occur fol lowing partial-thickness necrosis of the ventricular wall if the free wall is replaced with non-contractile fibrous tissue. Left ventricular function is a ff ected because the fibrous wall bal loons out during systole and reduces stroke volume. Repair is undertaken using CPB, and CABG and mitral valv e replace ment may also be necessary . Acute failure of percutaneous coronary angioplasty Since the advent of intracoronary stents, the need for emer gency CABG following complications of PCI is low at <1%. The mortality rate of CABG in this group is significantly higher than in the elective setting.

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