

the other two the large fibro-fatty mass had to be excised. At all three operations an adventitious bursa was found on the deep surface. The results of operation were satisfactory. There was an improvement of the cosmetic disability and relief of pain and tenderness. One of the other patients was a 6-year-old girl, whose condition is being followed up in the hope that the swelling may recede with growth. The remaining eight patients were left with a lipoma and a defect which did not warrant surgical treatment. This condition is permanent in adults, because mature fat tissue does not undergo resorption or regeneration.

¹ Meggitt, B. F., and Wilson, J. N., *British Journal of Surgery*, 1972, 59, 165.

Tamponade after Acute Myocardial Infarction

Cardiac rupture with tamponade sometimes follows acute myocardial infarction. It has been reported in 4% of all patients with myocardial infarction,^{1 2} but in acute myocardial infarction the incidence rises to 9%¹⁻⁴ and may account for 13% of deaths.²

Biörck and his colleagues from the Karolinska Institute in Stockholm have reviewed the clinical and electrocardiographic signs of rupture and tamponade after acute infarction and discussed the results of surgical intervention.⁵⁻⁷ Typical features were the absence of a history of previous myocardial infarction but with electrocardiographic evidence of infarction in all cases. The site of the infarction was usually anterior, rarely inferolateral, never wholly inferior. These patients had a remarkably uncomplicated course before cardiac rupture.⁵ Previous studies have shown that cardiac rupture and tamponade are rare below the age of 50,² commoner in women than in men,^{2 4} associated with hypertension,¹ and apt to follow exertion.^{1 3} Anticoagulants are not considered to be an important cause of this condition.^{1 2} Cardiac rupture and tamponade usually occur in the first four days after acute infarction.^{1 4 5} The rupture varies in size from 5 to 30 mm and usually involves the anterior surface of the left ventricle.⁵ Surprisingly, the myocardial infarction is often small or moderate in extent and the condition of the surrounding myocardium good.^{4 5}

Diagnostic changes of heart rate and rhythm occur at the time of rupture. The loss of consciousness associated with circulatory collapse produces baseline electrocardiographic disturbances. These are followed by bradycardia of sudden

onset, which is initially sinus and later nodal in origin, ending in an agonal rhythm.^{4 6} These bradyarrhythmias are probably a vagal effect, produced by distension of the pericardium.⁴ A decrease in QRS amplitude is common but inconsistent.⁴ Alterations of rate or rhythm were not observed in the 30 minutes preceding tamponade.⁶

Rapid surgical intervention is the only method of treatment with any hope of success. Lillehei and his colleagues have reported repair of a large myocardial perforation, with survival of the patient for 37 days, death being ultimately due to a fresh cardiac rupture.⁸ Löfström and his colleagues have attempted surgical repair in three patients with rupture and tamponade after acute infarction.⁷ Immediately the diagnosis had been made, oxygen, sodium bicarbonate, adrenaline, low-molecular-weight dextran, and blood were administered. A thoracotomy and pericardiotomy were performed by the physician without sepsis; tamponade was relieved and gross bleeding was stopped. Repair of the rupture was then completed in the operating theatre by a surgeon. Two patients died within hours of operation from a fresh myocardial rupture. One patient survived for one month but suffered severe brain damage as a consequence of excessive bleeding during treatment. At necropsy a large anteroseptal infarct was present, without signs of local infection or fresh rupture.

From the results of these combined studies it is apparent that cardiac rupture and tamponade can be diagnosed rapidly with a high degree of accuracy and that early surgical intervention is possible.⁵⁻⁷ The results of surgery in the few reported cases are disappointing, but perhaps better results could be achieved by the use of extracorporeal circulation and improvement in technique. The difficulty is that the cause of death in surgically treated patients is usually a fresh rupture.^{7 8} A policy of surgical intervention in patients with tamponade due to cardiac rupture places a heavy burden on the nurses in coronary care units and on the hospital medical and surgical staff. Furthermore, efficient organization and co-operation between the specialties involved is mandatory if cerebral damage owing to faulty technique is to be avoided, with all its resultant anguish for both patients and their relatives. It is debatable whether the results of surgical treatment will justify the adoption of such a policy.

¹ Maher, J. F., Mallory, G. K., and Laurenz, G. A., *New England Journal of Medicine*, 1956, 255, 1.

² Sievers, J., *Geriatrics*, 1966, 21, No. 7, 125.

³ Lodge-Patch, I., *British Heart Journal*, 1951, 13, 37.

⁴ Meurs, A. A. H., Vos, A. K., Verhey, J. B., and Gerbrandy, J., *British Heart Journal*, 1970, 32, 232.

⁵ Biörck, G., Mogensen, L., Nyquist, O., Orinius, E., and Sjögren, A., *Chest*, 1972, 61, 4.

⁶ Mogensen, L., Nyquist, O., Orinius, E., and Sjögren, A., *Chest*, 1972, 61, 6.

⁷ Löfström, B., et al., *Chest*, 1972, 61, 10.

⁸ Lillehei, C. W., Lande, D. J., Rassman, W. R., Tanaka, S., and Bloch, J. H., *Circulation*, 1969, 39, Supplement, 4, 315.