Acute myocardial infarction and ischemic cardiomyopathy are important causes of heart failure (HF). With ageing populations in developed nations, the incidences can be expected to rise in the coming decades.

Stretch of a left ventricle (LV) scar results in detrimental ventricular remodelling, LV dilatation and a change in geometry from elliptical to spherical. These result in higher wall stress and less effective ventricular contractions.

Surgical techniques to restore the shape of the remodelled ventricle were introduced in early 1980s. The RESTORE registry and others reported favourable outcomes in >5000 patients. However, the NHLBI and NIH-funded prospective randomised STICH Trial found no additional benefit of LV reconstruction in addition to coronary bypass grafting.

The STICH Trial was well conducted. The neutral findings did curb enthusiasm for LV reconstruction surgery. However, the interpretation of STICH was not incontrovertible and had sparked heated debates. Subsequent re-analysis of STICH confirmed significant survival benefit when adequate LV volume reduction was achieved.

New data from experienced centres continued to demonstrate efficacy of LV reconstruction surgery. The 2013 ACCF/AHA Guideline for the Management of Heart Failure recommended LV reconstruction for HF with reduce ejection fraction with a recommendation class IIb, level of evidence B. Unsurprisingly, the field remains confused about the role of this treatment.

In order to facilitate appropriate sizing of the LV during reconstruction, graduated balloons are now available for use as templates. A new device has been developed for less invasive off-pump LV reconstruction and a Phase 2 clinical trial is now underway.

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17 LEFT VENTRICULAR RECONSTRUCTION SURGERY
Steven SI Tsui. Department of Cardiothoracic Surgery, Royal Papworth Hospital, Cambridge, UK
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18 SURGERY FOR HEART FAILURE: EXPERIENCES FROM SEVERANCE CARDIOVASCULAR HOSPITAL, SEOUL, KOREA
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Since the first successful heart transplant in Korea in 1992, the case volume has been rapidly increasing. Compared with BHLT registry data, the Korean KONOS registry data show similar post-transplant long-term survival rates. At Severance Cardiovascular Hospital (SCH) of Yonsei University, the number of heart transplants has been growing steadily since 2010. Between 1994 and 2018, 174 heart transplantations had been performed. Mean age of recipients and their follow-up duration were 42.9 and 3.2 years, respectively. Preoperative CPR was performed in 18 (10.3%) patients, and extracorporeal membrane oxygenation (ECMO) was applied in 35 (20.1%) patients. In-hospital mortality was 19% and 10 year survival rate was 71.7%.

19 UPDATE OF LVAD THERAPY IN JAPAN
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Left ventricular assist device (LVAD) has been increasingly utilised for the treatment of advanced (ACC/AHA stage D) heart failure. Three types of implantable device (HeartMate II™, Jarvik 2000®, and EVAHEART™) are currently available as a bridge-to-transplant in Japan.
Heart transplantation was initiated in Singapore in 1990. Three to six heart transplants are performed annually. The waiting list mortality was about 30%. Hence, mechanical circulatory support was initiated with HeartMate 1 in 2001. Extracorporeal membrane oxygenation (ECMO) for acute life support became available by 2003. Durable implantable rotary left ventricular assist device (LVAD) with HeartMate II™ (HMII) was introduced in 2007, followed by HeartWare™ HVAD™ in 2012 and HeartMate 3™ (HM3) in 2015. 90 consecutive durable implantable devices (58 HMII, 21 HVAD and 11 HM3), were placed from May 2009 to December 2017. Of these, 65 were placed as bridge-to-transplant. Overall perioperative mortality was 7 (7.7%). 26 were INTERMACS level 1 patients, bridged with ECMO without perioperative mortality. Median ICU stay and hospital stay were 8 and 31 days, respectively. Mean duration of support was 907 days. The longest support was 8.6 years. 45 had been on ongoing support, and 23 were transplanted. Late mortality occurred in 13 patients, 5 due to stroke. Driveline infection developed in 28.7%, 57.1% were associated with driveline trauma. Pocket infection developed in 5 patients. In the initial 78 patients, 17 (21.7%) experienced gastrointestinal bleeding (GIB); 11 with recurrent GIB were successfully treated with thalidomide. 6 developed aortic regurgitation, 5 underwent modified Park stitch. Implantable cardioverter defibrillator placement pre-LVAD did not confer mortality benefit. Issues with hardware occurred in 60%. Cardiac recovery occurred in 2 and their LVADs were decommissioned. Overall survival at 5 years was 84.4%, compared with INTERMACS registry data of 48%.