haemodynamically stable patients with multiple risk factors for operative death, but without multiple organ failure, to have delayed surgery. A lower-risk elective procedure can then be performed at a later time, allowing myocardial scar tissue to form, facilitating PIVSR repair.

CLINICAL BOTTOM LINE

The timing of surgical repair depends on patients’ haemodynamic status. If the patient is in cardiogenic shock, due to pulmonary to systemic blood flow ratio shunt rather than infarct size, immediate surgery should follow resuscitation measures and cardiac support. If the patient is haemodynamically stable, surgery could be performed after 3–4 weeks of medical optimization with inotropic and mechanical cardiac support. If there is clinical deterioration, immediate surgery is indicated.

Conflict of interest: none declared.

REFERENCES


eComment. Percutaneous closure of post-myocardial infarction septal defect

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We read with great interest the paper by Papalexopoulou et al regarding the best timing for surgery in patients with post-infarct ventricular septal rupture [1]. After carefully reviewing the literature, the authors conclude that the best strategy is to delay the surgery by 3–4 weeks if the haemodynamic status of the patient allows. However, current guidelines advocate immediate surgical closure of the ventricular septal defect (VSD) irrespective of the patient’s haemodynamic status to circumvent further haemodynamic decline [2].

First described by Lock et al. in 1988, the transcatheter closure of VSD has gained a widespread use, and devices originally intended to close the patent foramen ovale or atrial septal defects, have been modified for closure of muscular VSD. This less-invasive interventional approach allows, in the majority of cases, rapid haemodynamic stabilization by reducing the left-to-right shunt [3]. Anatomical considerations, best depicted by echocardiography, represent a major limitation of this procedure. Large VSDs exceeding 35 mm, apical VSDs without suitable rim or basal VSDs in the vicinity of mitral apparatus or the aortic valve represent a contraindication to the percutaneous closure with Amplatzer devices [4]. Another important drawback is the limited number of centres with sufficient expertise in performing these challenging procedures, because percutaneous closure of an acute postinfarct VSD remains one of the most demanding procedures in interventional cardiology.

Costache et al used an Amplatzer occluder as a bridge-to-surgical procedure in a 79-year-old woman in cardiogenic shock secondary to a post-infarct VSD [5]. The combined approach enabled them to perform surgery on a more stable patient. Recently, Thiele et al [4] evaluated, in a prospective study, the outcomes of primary interventional closure of postinfarction VSD in an acute setting as an alternative to surgical closure. The overall 30-day mortality of this less-invasive approach was 35%. Not surprisingly, the mortality rate was higher in patients with cardiogenic shock. Major complications occurred in 41% and these included free ventricular wall rupture, device embolization or dislocation and residual left-to-right shunting.

Despite advances in medical and surgical care intervention, mortality of postinfarction VSD remains high, especially in patients with haemodynamic compromise. Future multicentre studies are warranted to identify patients best suited for surgical or interventional closure, in the era of evolving alternative technologies.

Conflict of interest: none declared.

References


eComment. The use of mechanical assistance devices in post-infarction ventricular septal defects

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We read with great interest the paper by Papalexopoulou et al. regarding the best timing for surgery in patients with post-infarct ventricular septal defects (PVSD) [1]. As outlined by the authors, the patients’ haemodynamic status, particularly when the pulmonary-to-systemic (Qp/Qs) shunt ratio is high, dictates the timing of surgery. The majority of patients, up to 89% in the presented series, were operated within the first week of diagnosis. Their mortality was reported to be high, ranging from 31%–75%, as opposed to the more favourable outcome in those operated later (0·18·4%). It is intuitive that if feasible, reparative surgery should be delayed, while the patient is supported with both drugs and devices. The intra-aortic balloon pump (IABP) is the preferred short-term mechanical circulatory support (MCS), used up to 76% preoperatively in the presented series.

In a relatively recent era, the good results of MCS other than IABP as a bridge-to-transplantation support, has led clinicians to extend their use to patients with acute cardiogenic shock related to PVSD. Although promising, the early experience with PVSD patients was not as good as expected. Meyns et al. [2] reported sudden