Multiple percutaneous VSD closures post-myocardial infarct

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A 77-year-old lady developed a ventricular septal defect (VSD) 48 h after an anterior myocardial infarction. Echocardiography suggested an apical defect. Following two previous successful procedures in our centre, it was felt that a percutaneous approach to VSD closure should be taken, as the surgical view favoured a minimum 2-week preoperative stabilization period with balloon pump in situ.

She underwent an initial percutaneous VSD closure procedure 8 days post-infarct. Two defects were identified and closed with 24 mm and 16 mm post-infarct Amplatzer VSD devices, respectively. Her recovery was unfortunately complicated by chest sepsis and deteriorating renal function. Transthoracic echocardiogram confirmed persistent left-to-right flow, and invasive studies on day-17 demonstrated a residual 2:1 shunt.

A further attempt at defect closure seemed the only option at this stage, as she was not fit for surgery. An additional defect was identified and successfully closed with an 18 mm device, but again without complete resolution of the shunt on ventriculography. It was hoped that this would settle with thrombosis and subsequent endothelialization of the devices, but sepsis and renal failure persisted, and she died on the 23rd day post-infarct.

Post-mortem of the heart shows the three devices in situ. No further distinct septal perforations were identified macroscopically. The third device had not yet fully thrombosed, but the other two were fully occluded.

This case highlights the high mortality associated with post-infarct VSDs despite growing experience with percutaneous intervention. Perhaps, given the tendency for post-infarct VSDs to be multiple and serpiginous, a cribiform device is required.