Better outcomes depend on surgeons joining cardiologists.

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Abstract
Closure of muscular ventricular septal defects remains a challenge for cardiac surgeons and interventional cardiologists. Different techniques, approaches, and devices are available to increase the success of these procedures. Changwe et al, in this issue of the Journal, describe a novel approach with the usage of a probe-guided system, with encouraging results.

Title:
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Closure of apical ventricular septal defects in infants is challenging for surgeons and interventional cardiologists. Although a hybrid approach has been used for some time, Changwe et al.22 Changwe GJ, Hongxin L, Zhang HZ, et al. Percardiac closure of large apical ventricular septal defects in infants: novel modifications and mid-term results. Journal of Cardiac Surgery in press describe a novel surgical technique to close apical ventricular septal defects that uses a probe-assisted delivery system. This is done through a chest incision with the aid of transesophageal echocardiography.

Trans-catheter repair of apical interventricular septal defects (VSDs) has been expanded to different defect types since its introduction into clinical practice. Continuous improvements in occlusion devices and sheaths have occurred. Vascular and bodyweight limitations, as well as associated complications, led to the conception of percardiac device closure techniques, especially for apical muscular VSDs.33 Amin Z, Gu X, Berry JM, Titus JL, Gidding SS and Rocchini AP. Periventricular closure of ventricular septal defects without cardiopulmonary bypass. Ann Thorac Surg 1999; 68:149-53.

This retrospective report by Changwe et al. reviews their clinical experience since 2011 with 36 infants undergoing periventricular or peratrial device closure of apical muscular VSDs. They divided the population into three groups according to the access pathway applied. They detail the advantages and limitations of the surgical technique in each group, and report different locations and configurations of muscular VSDs (Cylindrical, Tunnel, Cave-like, Multiple holed) that can interfere with the surgical approach. The peratrial approach was more aesthetical, less traumatic and painful, preserved RV wall intact, and had a shorter length of hospital stay. However, the acute angle formed by the peratrial route for VSD closure precludes its use in some circumstances. Therefore, periventricular was the route was of choice for complex VSD types (tortuous tunnel-shaped, cave-like, multiple) and the anterior apical location. They showed that the periventricular pathway was suitable for the occlusion of all types of apical VSDs.

There are limitations to this retrospective analysis when comparing the three groups, mainly due to the morphological complexity of the defects. The authors did not explain which criteria they used to choose the access route in the different types and locations of the defects. Increased success rate, without immediate complications, without the use of Xray, small residual VSD percentage, with clinical improvement in this challenging group of patients, reinforces the superiority of the percardiac approach.


Patients with apical muscular VSD are challenging and the collaborative approach between surgeons and interventional cardiologists seems to be the best approach for better care.