Minimal Access Surgery for Atrial Septal Defects in Children

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Abstract

Alternative incisions for access to cardiac structures during open heart and thoracic procedures have received much attention in the surgical community over the years. The stated goal has been to improve the cosmetic results, reduce pain and recovery time, and reduce length of hospitalization. Of all these factors, improved cosmetic results has proven to be the most objective outcome of these surgical approaches. While there have been some studies to evaluate the differences in pain and hospital or intensive care unit length of stay, no objective differences between the various approaches have been noted in children, even in comparison to full sternotomy. A wide variety of minimal access approaches have been described including: lower sternotomy, “trans-xiphoid” approach, anterior or lateral thoracotomy, and trans-axillary incisions. An array of techniques for management of cardiopulmonary bypass, cardiac arrest, and de-airing procedures have also been described. The main tenets of the procedure, however, are common to most of these, which are: extracorporeal circulation is used in virtually all cases, either cardioplegic or fibrillatory arrest is used to prevent the heart from ejecting air into the systemic circulation, and maneuvers to remove air from the left side of the heart are required prior to resuming ejection.

As technology has advanced, more and more of these types of defects are being closed using a catheter-based device, with improving results. The current indications for surgical closure of secundum defects are the inability to close the defect with a device because of the absence of a rim, too large a defect, or parental or patient choice. While debate continues with regard to the long-term consequences of device closure, and some alarming reports of late complications of device erosion into adjacent structures, this imaging modality provides the surgeon, its routine use in these cases has become common practice at our institution.

CONFLICTS OF INTEREST

None declared.

REFERENCES