Session 34: Hall I Congenital – Controversies (14:00)

Management of transcatheter ASD closure

George Sarris
Mitera Children's and Hygeia Hospital, Athens, Greece

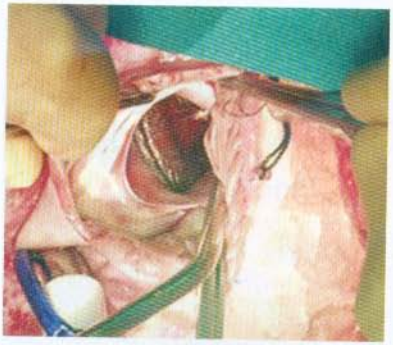
Many reports of transcatheter device closure of secundum atrial septal defects (ASD's) show high rates of success and low incidence of complications, but the seriousness of many of these complications has been inadequately studied. Accumulating reports in the surgical literature of potentially fatal complications after percutaneous ASD closure, often necessitating emergency surgery are particularly worrisome, especially in view of the long-established fact of nearly 100% effectiveness of surgical ASD closure with near zero mortality, minimal and only short-term morbidity and, with less invasive surgical techniques, improved cosmetic results. To address this issue, the European Congenital Heart Surgeons Association (ECHSA) has decided to analyse our collective experience in the management of those complications of transcatheter ASD closure which have required surgical intervention.

In this retrospective ten-year study in 19 participating ECHSA centres across Europe, all cases of surgery performed to address complications of device ASD closure were analysed. Our data demonstrated that surgical complications occurred with all types and sizes of devices (even small ones), and they included device embolisation, cardiac perforation or erosion with bleeding and tamponade, thromboembolism and stroke, aortic or mitral injury, and endocarditis. The seriousness of these complications is clearly out of proportion to the severity of the lesion treated and the established track record of its definitively curative surgical management.

Importantly, ASD device – related complications leading to surgery do not necessarily occur early, that is, in the catheter lab or even during the same hospitalisation (in which case emergency life–saving surgery is required), but, in almost one third of cases, they occurred late. Late complications most commonly involved thromboembolism and stroke, but also cardiac erosion and aortic or mitral valve damage. The documentation of such serious, even if rare, complications, support the recommendation that, after transcatheter closure, patients should remain under permanent surveillance in congenital centres, in contrast to what is known for those who have had successful surgical ASD closure, who do not require specialised long-term follow-up.

Despite the life threatening potential, the surgical management of these complications is highly successful, but is associated with several-fold higher mortality than that of primary surgical closure of ASD's, as demonstrated by comparison with all unselected cases of surgical ASD closures reported in the EACTS Congenital Database.

There are three major implications of our study, for which patients and families should be informed when the option of device closure of an ASD is discussed: First, surgical backup must be available in the hospital to deal with potentially lethal acute complications. Second, lifelong follow-up of patients whose ASD has been closed by devices is mandatory, in contrast to those who have undergone surgical closure, who are considered cured and do not require specialised follow-up. Third, since cardiac erosion and thromboembolism are prominent late complications of the currently available devices, continued research in the direction of new biodegradable devices may hold theoretical promise for future prevention of these rare but serious late problems.



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