

Closure of atrial septal defects: The good, the bad and the ugly?

Atriyal septal defektlerin kapatılması: İyi, kötü ve çirkin?

Following the initial successful report of non-surgical transcatheter closure of atrial septal defect (ASD) (1), various devices have been developed over the past 2 decades (2-8). However, most of them require large delivery sheaths and complex deployment techniques, and have significant residual shunt. Although the adult cardiologists are using these devices widely, in many pediatric cardiac institutions surgical closure is reserved for the patients whose families choose surgical repair or whose lesion remains unsuitable for device closure (9-11). This is also may be due surgical closure of ASD still has a high success rate, with low morbidity and favourable long-term outcome (12,13).

There are many questions about ASD closure: 1) When should it be closed? 2) How should it be closed? 3) What is the cost effectiveness of these techniques? and 4) What are the long-term results of transcatheter techniques?

We know the answer of the first question nearly complete but the answers for the rest still waiting in this debate.

In this issue of The Anatolian Journal of Cardiology we will read a large retrospective clinical study (14) about transcatheter closure of ASD, which is performed on pediatric patients by Amplatzer device.

Although this study is important as it presents the clinical experience with transcatheter occlusion of a large series of ASDs in our country, there are some doubts about indications and the technique. Amplatzer device seems successful in closing ASDs in children, because of its simplicity in applying the device, low rate of residual shunting (2.5%) and requirement for smaller introducer sheaths. However simplicity of the method should not change the indications of ASD closure. Indications of ASD closure are same both for surgical and transcatheter closure and the criteria are as follows: Qp/Qs ratio greater than 1.5, right atrial, right ventricular enlargement, incomplete bundle branch block on electrocardiogram and clinical symptoms, effort capacity and paradox embolism in adult population.

To close small ASD's, which do not fulfill the above criteria, either surgically or with a device, is a topic of continuing discussion. Our policy is to close the ASD's, which fulfill the above criteria.

Although there are several reports about the successful closure of ASDs with a device there are some unfavorable reports in the recent literature about the device closure. Twenty-four cases with cardiac perforation due to Amplatzer device have been reported recently (15). Also there are some reports about thrombus formation in the left atrium, right atrium or both in 35 cases among 1000 patients with ASD devices (16). This report brings the question about anticoagulation. What is the appropriate time to stop the anticoagulation? After six months thrombus formation was reported to be 0% for Cardioseal, Starflex,

ASDOS and Helex devices, and 0.3% for Amplatzer device. It seems that epithelization of the device takes more than six months (17). Further long-term studies may bring answers to the above questions. One of the problems concerning ASD devices is the cost-effectiveness, especially for the developing countries as it is cheaper to close ASDs surgically.

In conclusion, Amplatzer ASD occluder is the mostly accepted ASD closing system in the world, because of its simplicity in application. Yet this procedure has not achieved wide-spread use because of some handicaps mentioned above and new devices are being produced or improved everyday. Having good devices should not stop the further studies to get the best.

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