# ''Learning curve'' in congenital cardiac surgery

To the Editor,

We congratulate Sarısoy et al. (1) for their study. We found their successful results of congenital heart surgery operations. Because these operations require a lot of effort and time.

In this study, they mainly discussed the long-term results of atrioventricular septal defect (AVSD) operations. One of the issues that draw our attention is the relationship between the date of operation and the results of the operation. In this study, they mentioned the differences in the reoperation rates and postoperative left ventricular outflow tract obstruction rates between the operations performed in the early 2000s and the current operations. When we examined the study, we found that there was less success rate in terms of these parameters in the operations in the early 2000s, but there was no difference in terms of early mortality. The authors reported that their better understanding of myocardial protection methods and perfusion methods and the more frequent use of intraoperative transesophageal echocardiography (TEE) have impact on these results. At this point, we want to make some contributions to the authors. The authors' comments, without any data in their hands, are based on their personal experience. However, we do not fully agree with these comments. The development and better understanding of myocardial protection or perfusion methods will have an absolute effect on some early postoperative data, such as early postoperative low cardiac output or inotropic support demand, early postoperative neurological complications, or, most importantly, early mortality. Other parameters that were emphasized by the authors were related to late-term results, except for early mortality. Moreover, it is understood that there is no difference in terms of early mortality between the years studied. In one of the studies cited in the article by Sarısoy et al. (1), Crawford and Stroud (2) reported that they found a relationship between the date of surgery and early mortality while examining the results of AVSD operations. Another supporting data in the same study is the differences in cardioplegia methods used between years studied. In other words, it can be concluded that early postoperative mortality decreases due to different cardioplegia methods used in the study of Crawford and Stroud (2). As a result, myocardial protection or perfusion methods can only affect early postoperative data.

Conversely, Sarısoy et al. (1) stated that the cause of the relationship between the date of surgery and some late-term results may be the more frequently used perioperative TEE. This inference seems to be more logical than their opinion about myocardial protection and perfusion methods mentioned above in terms of influencing late-term surgical results. Because the use of intraoperative TEE provides us the opportunity to intervene by detecting a residual septal leak or valve insufficiency after the procedure, it may reduce the need for possible late-term reoperation or valve replacement. We are curious about the authors' view on whether or not the use of intraoperative TEE has such an effect on surgical procedures in their daily practices, especially in these operations. Maybe the most important question that should be asked is as follows: Is it a ''learning curve'' in these operations because it is frequently mentioned in daily literature? We believe that learning about the authors' views on this subject will add value to their study.

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## Author`s Reply

To the Editor,

We appreciate your contribution to our study (1). We would like to clarify a few points. As we observe in your kind objection, the issue is the lack of concordance between early mortality rates and surgical era, as one would expect. With improving

surgical techniques, one should expect better outcome, and basically, low early postoperative mortality. It has always been mentioned that atrioventricular septal defect repair is "the state of art" that demans significant reconstruction, mainly focused on left atrioventricular (AV) valve function. Naturally, surgical experience has a great impact on the outcome, as you mention, the "learning curve", wherein we believe that experience itself is the most important factor affecting the result. We reported slightly higher early mortality rates in the older cohort, but it did not show a statistical significance. In this series, many different leading surgeons participated in the clinical practice during different periods; each experienced their own learning curves. One of the reasons for the lack of concordance can be this difference. However, we must admit that despite the changing of surgeons, all the factors that were listed as a cause of improvement in early mortality, like advances in perfusion techniques, better myocardial protection, better postoperative management, have an impact on the overall outcome. We think the result would be different if fewer surgeons had participated in the practice. Transesophageal echocardiography (TEE) is definitely a very valuable tool to detect residual defects and AV valve function; however, we do not recall a case that was re-repaired according to TEE findings. Surgeons generally accept the best possible valve repair simply tested by saline during the operation, but in TEE, there is an immediate feedback. We have completed our learning curve fast with the aid of TEE, therefore we do not use TEE as often as we did in the past.

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# About the saphenous vein graft patencies after coronary artery bypass surgery

To the Editor,

We congratulate the authors for their work (1). In this study, the morphological factors affecting the long-term patency of the grafts used for revascularization in coronary artery bypass graft surgery were examined. The type of graft used for revascularization, the diameter of the target vessel, and the stenosis ratio of the target vessel effective to determine long-term patency were determined. We agree with the authors' conclusions. No relationship between saphenous vein graft length and long-term graft patency was observed. However, for the saphenous vein, we do not agree with the authors' conclusion. The saphenous vein is generally about 5-7 mm in diameter. In some cases, this may be even higher, especially above the knee. The mean diameter of the target coronary artery is between 1-2 mm. Because of this diameter mismatch, saphenous vein anastomosed to the coronary artery will cause stagnation because of hemodynamics. Stagnation is shown as a shaded area in Figure 1. As the length of the saphenous vein increases, the area of stagnation will increase and the graft patency will decrease (Fig. 1). Longer and wider saphenous vein grafts will cause more blood to be pooled, and the graft patency will be further imparied. Therefore, a 10-mm diameter graft is not used in femoro-popliteal bypass. Unlike the study, we do not agree that saphenous vein graft length does not affect graft patency. However, the situation is slightly different in arterial grafts. Arterial grafts have the capac-

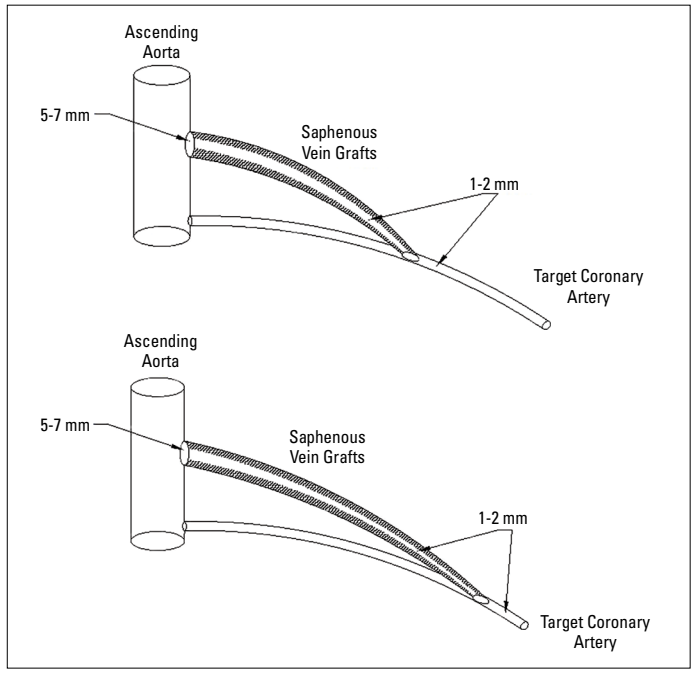


**Figure 1.** Demonstration of the increase in stagnated area as the length of the saphenous vein increases