

The effects of internal thoracic artery preparation with intact pleura on respiratory function and patients' early outcomes

Plörotomi yapılmaksızın internal torasik arter grefti hazırlanmasının solunum fonksiyonları ve erken dönem iyileşme periyodu üzerine etkileri

Dear Editor,

We read with great interest a recent article by Özkara et al. in which they evaluated the influence of open pleura and the type of internal thoracic artery (ITA) harvesting technique used on the postoperative respiratory functional status as well as the early outcome in patients undergoing coronary artery bypass grafting (CABG) procedure (1). The authors should be congratulated for their simple but important investigation about postoperative respiratory functions and its association with ITA harvesting.

Improved long-term survival and patency rates of ITA when compared with saphenous vein grafts have made ITA to be the best choice of conduit for CABG. These lead many surgeons to routine use of ITA as a gold standard during CABG, which brought out problems such as insufficient flow and length. Topical vasodilators and skeletonization as described by Keeley (2) in 1987 were used to overcome these problems. Besides impaired length and free flow, preparing the ITA with the skeletonization technique and leaving the accompanying veins in the chest wall cause less trauma and mostly pleural cavity remains intact. Bonacchi et al. (3) in their study with 299 patients showed that harvesting of ITA in the skeletonized fashion without opening the pleural cavity results in altered postoperative chest pain, impaired postoperative respiratory function and significantly higher bleeding in patients with open pleural cavity and pedicled ITA preparation.

In their study (1), the authors allocated the study population into two groups according to 'random numbers' technique. Two different techniques of ITA harvesting were performed: in Group 1 (n=26 pts), the pleural space was left intact (extrapleural takedown group) and in group 2 (n=28 pts), complete incision of the pleura was performed routinely. However, unfortunately although not reaching to statistical significance patients in pleurotomy group was a little bit (p=0.09) older with mean age 60.3±9.4 vs. 56.2±7.2, besides there was more female patients in pleurotomy group 5 (18%) vs. 2 (8%) with p=0.08. Keeping in mind older and/or female patients confronts more respiratory problems after CABG we think that this much of older and more female patients might have an influence on their statistical analysis in their small study group of 26 vs. 28 which means that there were 10% more patients in the pleurotomy group.

The authors mentioned in their study that; the technique in which the pleura is kept intact the graft is nearly skeletonized or semi-skeletonized as described by Horii and colleagues (4) besides when pleura is opened, more extensive dissection of surrounding tissues will be performed during the ITA harvest and thus leading to increased blood loss. According to this assumption there is something unclear in the study, the authors stated in the surgical technique that "...the left ITA was removed as a pedicle with adjacent veins, fascia, and pleura attached. After the sternum was opened, the left side is elevated with a mammary retractor. The endothoracic fascia was divided to expose the pleura and extrapleural fat. In the intact pleura group, mediastinal pleura was dissected smoothly

from the endothoracic fascia and extreme attention had to be taken to prevent pleural injury." Did the authors use the same technique in the pleurotomy group and did they open the pleural cavity after harvesting the ITA?. In other words did they compare pedicled or semi-skeletonized ITA's in both groups, which would make their study more powerful because previous studies compared skeletonized ITA's with pedicled ones (4).

As a conclusion we also believe that keeping pleural cavity intact during ITA harvest improves postoperative pulmonary functions.

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Author Reply

Dear Editor,

First of all, we would like to thank to the authors for their comments. We would like to answer their important questions.

Although the number of female patients is higher in group 2, as you saw in Table 1, the difference of males/females ratio is not statistically significant. In this study, we found lower postoperative drainage in intact pleura group, but we did not observe pericardial fluid accumulation or tamponade cases in either group. We did not observe postoperative Öpneumothorax in any group. In our study, pulmonary functions were not evaluated in the late postoperative period but we consider that protecting normal anatomic structures should contribute better lung functions in long term. We think to keep pleura intact during ITA harvest with minimum trauma is the best method for patients respiratory functions.

Thank you very much for your interest.

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