

Commentary

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There are of course different techniques of performing off-pump coronary surgeries. But there are two basic factors, which should be considered when carrying out such type of surgeries and which are closely connected with each other – exposition and stabilization of defined region of the heart as well as ensuring optimal hemodynamic conditions

and what is related to it, the necessity to maintain metabolic homeostasis in operated patients. Basic elements of exposition and stabilization of operation area include: pericardial deep sutures, using gauze tape and gauze pads in different configurations, change in inclination angle of the operating table, using better stabilizers and movements resulting in increase of space in mediastinum: such as temporal reduction of tidal volume, pleuropericardial window, wider sternotomy opening. Elements ensuring patient's optimal hemodynamic state or correcting in certain degree typically technical movements include first

of all fluids redistribution by Trendelenburg method, crystalloids and blood products administration, application of catecholamines and mechanical left ventricle support [1]. Majority of mentioned factors from the first and the second group is closely interrelated and influences each other making some kind of "syncytium" of surgical team action. Certainly, the introduction of Octopus type stabilizers made in 1996 by C. Borst and EW. Jansen which use sucking to immobilize a certain part of heart was a crucial moment in "off pump" surgery [2]. They have been commonly used in coronary surgery since this time. Over the last several years there have been many studies comparing the usage of different kinds of heart stabilizers, but there haven't been found one universal method which would definitely outperform other techniques [3, 4]. Certainly, posterior wall vessels exposition has been the main difficulty in this type of surgeries. For this reason I think, that the authors of this study focused on a very significant and still valid problem. The abstract of the article includes clear division of patients into three groups, but it is not clearly stated in further study

how they were classified to particular groups. There is lack of pre-operative characteristics and lack of comparison of pre-operative parameters between particular groups of patients. There is also some kind of inaccuracy between the abstract and dense text in work methodology concerning particularly group III. Except the reference position, which is basic for all further changes in heart and measurements configurations, the standardization of hemodynamic initial parameters has not been described. I assume, that these defects result from complicated methodology of carried research and quantitative editorial restrictions concerning the text. Conclusions are stated clearly and they are supported by their graphic presentation in a form of drawings. In institution I work for coronary surgeries without CPB has been routine procedures since 2005, that is since the beginning of this ward and they comprise 97% of all coronary surgeries. Vast majority of surgeries – 82% rests on complete arterial revascularization using internal thoracic arteries and radial artery with T and Y grafts method. We also routinely perform intraoperative verification of all performed anastomoses using transit-time method for about 40% of patients. In our work we practically use all above mentioned methods of coronary vessels exposition basing first of all on using tissue and apex stabilizers for each surgery. We rarely use pleuropericardial window technique, usually for patients with enlarged heart symptom. To expose posterior wall vessels we use apex stabilizer lifting the apex upwards and towards the right wall of pericardial sac, and tissue stabilizer in place of performed anastomosis. We pay special attention to make sure that the stabilizers do not press the heart to surrounding structures but only lift it gently. We wait few minutes while the heart adapts to new space conditions and at the same time we consult the anaesthesiologist whether we should change slightly the position of the heart or is the current position of the heart optimal. Generally, we divide patients into three groups: elective patients with EF > 35%, elective patients with EF < 35% and immediate patients with coronary failure. Each group is monitored in slightly different way. In case the fluids redistribution by Trendelenburg method and change of heart configura-

tion have not improved monitored parameters, the indications for catecholamines administration include: MAP < 60 mm Hg, CI < 2 l/min, CVP > 15 mm Hg, SvO₂ < 60%, pvO₂ < 30 mm Hg (depending of the monitoring method). The percentage of patients needing catecholamines administration was 16,3 % in 2009, and CBP conversion level was 1,7%. Therefore, in our opinion, at this development level of cardiac surgery and cardiac anaesthesiology the significant part of hemodynamical disorders during “off pump” surgeries may be relatively easily corrected with surgical movements or anaesthesiological procedures. I congratulate the authors of the article on detailed analysis of one of many methods concerning heart configuration and vessels exposition in these kind of surgeries, which usage can play an important role in some cases. What actually give us, the surgeons, hemodynamically optimal position of the heart during coronary surgeries carried without CPB? – calmness, no hurry, accuracy and self-confidence. Certainly, at the first place I address these words to young cardiac surgeons “just opening doors” to their future carrier. Literature reports are being only indicators pointing out how to find one’s own way in coronary surgery, especially in “off pump” mode, the rest has to be achieved individually basing on direct masters, building close cooperation of the whole team and from one’s own determination and intuition.

References

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