LUNG TRANSPLANTATION FROM DONORS AFTER PREVIOUS CARDIAC SURGERY: IDEAL GRAFT IN MARGINAL DONOR?

A. Palleschi[3], A. Mariolo[3], M. Montoli[3], P. Mendogni[3], D. Tosi[3], L. Morlacchi[2], P. Tarsia[2], F. Valenza[1], M. Nosotti[3]

1-Anaesthesia and Intensive Care Unit, 2-Respiratory Unit, 3-Thoracic Surgery and Lung Transplantation Unit, Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico, Milan, Italy

Lung transplantation has clearly become the definitive therapeutic option for patient with end-stage lung disease but the number of available donor currently limits this option. Despite the efforts to expand donor criteria on different fields, previous cardio-thoracic surgery is still considered a contraindication from large part of transplant centres. Surely, a previous operation on the chest can be a real risk factor for poor quality of the graft. On the other hand, a donor who underwent a cardiac surgery can provide an ideal lung but high intraoperative risks and intrinsic technical challenges are expected.

The purpose of this study is to present four clinical cases of lung procurement from donors who had a previous major cardiac surgery.

One donor had aortic valve substitution, one had mitral valve substitution and two donors had coronary artery bypass. The others criteria of eligibility for organs allocation, such as donor age, ABO compatibility, PaO2/FiO2 ratio, absence of aspiration or sepsis were respected. In one of the cases with previous coronary bypass, the grafts were submitted under ex vivo lung perfusion (EVLP) evaluation, because the donor had extra-corporeal support (VA-ECMO).

We report the technical details of procurement and recipients' postoperative courses. All procurements were uneventful, without lung damages or waste of abdominal organs related to catastrophic events. All recipients had a successful clinical outcome.

In our experience, even if lung procurement from a redo chest can be technically challenging, it could be performed successfully by extensive experienced surgeons. We stress the cooperation among the teams involved in the procurement; the coordination of the abdominal team and the anaesthesiologist with the thoracic surgeon is vital for the safe procurement of abdominal as well as pulmonary grafts.

Even though the computed tomography (CT) is not mandatory in the routine setting, mainly for possible donor instability, a meticulous pre-operative planning with CT scan is mandatory in this donor subgroup. CT scan with contrast could anticipate potential catastrophic injury to cardiac structures and lungs due to extensive thoracic adhesions identification. Moreover, the availability of EVLP evaluation makes relevant the possibility to move forward the decision on suitability of graft.

We conclude that even such complicated situation might result in successful transplantation. We strongly believe that facing lung donor shortage, it is crucial to avoid the loss of any possible acceptable lungs; in particular, previous major cardiac surgery does not strictly imply a poor quality of lungs as well as unsustainable graft procurement.