

# Redo mitral surgery after coronary artery bypass grafts under hyperkalemic hypothermia using thoracotomy and axillary artery cannulation in a patient with functional bilateral internal thoracic arteries and atheromatous aorta

Ryo Suzuki<sup>1</sup>, Masafumi Akita<sup>1</sup>, Takaki Itoharu<sup>1</sup>, and Takuya Komatsu<sup>1</sup>

<sup>1</sup>Shinmatsudo Chuo Sogo Byoin

October 3, 2022

## Abstract

We report a case of redo mitral and tricuspid valve repair via right thoracotomy under hypothermia and systemic potassium administration with axillary artery cannulation in a patient after coronary artery bypass grafting (CABG) with patent bilateral internal thoracic artery (ITA) grafts crossing over the sternum. Redo mitral valve surgery is challenging through re-sternotomy as previous CABG with patent ITA poses a risk of injury due to dense adhesion. Herein, dangerous dissection around the aorta and functional ITA grafts was avoided by performing the procedure under systemic hypothermia via thoracotomy. Furthermore, considering the presence of atheroma in the aorta, the axillary artery was used as a perfusion route to prevent stroke events. Performing axillary artery cannulation and right thoracotomy under hypothermic cardiac arrest with systemic hyperkalemia without clamping the patent bilateral ITAs and aorta allowed us to execute redo mitral valve surgery after CABG without major postoperative cardiac or cerebral complications.

## Hosted file

journal of card surgery final.docx available at <https://authorea.com/users/512028/articles/588672-redo-mitral-surgery-after-coronary-artery-bypass-grafts-under-hyperkalemic-hypothermia-using-thoracotomy-and-axillary-artery-cannulation-in-a-patient-with-functional-bilateral-internal-thoracic-arteries-and-atheromatous-aorta>

