Detection of Internal Thoracic Artery Dissection at Coronary Anastomosis Using Intraoperative 15-MHz High-Frequency Epicardial Ultrasound

Case Report Summary Document

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Background

This case report is based on the observations of a 66 year old man with 3 vessel disease, who underwent off-pump coronary artery bypass grafting including a LIMA-LAD procedure. Routinely use of TTFM (VeriQ C™ system; Medistim, Oslo, Norway) showed flow 10 ml/min, pulsatility index of 2, diastolic filling of 65% and an acceptable flow curve. The flow measurement was lower than expected and epicardial imaging was done by busing a 15-Mhz high frequency ultrasound probe (VeriQ C™ system; Medistim, Oslo, Norway). This revealed an intimal flap of LIMA at the anastomosis site. The flow pattern was visualized by using Doppler color flow mapping.

Results

The anastomosis was successfully revised and TTFM confirmed an adequate flow of 36 ml/min.

Conclusion

The author is mentioning the fact that TTFM has difficulties in detecting a stenosis of < 75% and that the use of TTFM in combination with epicardial ultrasound imaging will increase the diagnostic accuracy.

Medistim Comments

This case report illustrates the clinical benefit of using both TTFM and epicardial ultrasound imaging as intraoperative quality assessment methods during CABG. The fact that both methods are combined in one device (VeriQ C™) makes it easier to utilize and ultimately improve the level of quality assessment. The findings by Taiju Watanabe support Medistims' recommendation to routinely perform imaging first and then TTFM on all grafts/anastomosis during CABG.

Reference

The report has been published in Circulation 2014;129:e513-e515. To see the full text, including the flow curves and the images, go to:
http://circ.ahajournals.org/content/129/22/e513.full.pdf+html?sid=7247a2de-4946-4ea0-8003-3bd1a5959e96