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 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 using a 15-Mhz high frequency ultrasound probe. This revealed an intimal flap of LIMA at the site of the anastomosis. The flow pattern was visualized by using Doppler color flow mapping. The anastomosis was successfully revised and TTFM confirmed an adequate flow of 36 ml/min.

Intraoperative detection of an intimal flap of the LITA at the coronary anastomosis. 
A: Longitudinal view of the LITA-LAD anastomosis. 
B: Transverse view of dissection of the LITA. 
C: Doppler color flow mapping detected the restricted flow in the true lumen (longitudinal view). 
D: Sketch (made by Medistim) of the anastomosis and the dissection in LITA.

These findings support Medistim's recommendation to routinely perform imaging first and then TTFM on all grafts/anastomoses during CABG.

Graft flow measurements can detect a stenosis of 70% or more, as this is the stenosis grade that significantly reduce flow velocity. Epicardial ultrasound imaging can detect suboptimal anastomoses, increasing the diagnostic accuracy.