

# Hybrid Coronary Revascularization

300 Pasteur Drive  
Stanford, CA 94305  
tel: 650.724.7500

## MD Helpline

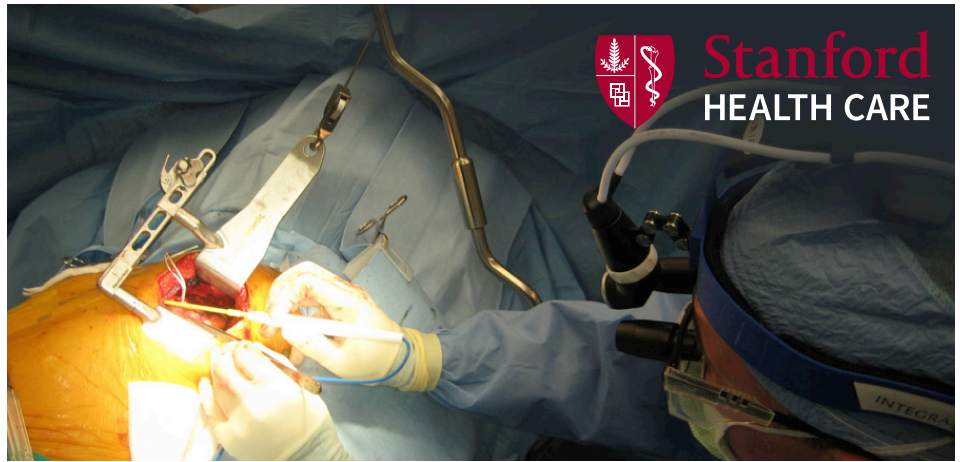
866.742.4811

## Website

[stanfordhealthcare.org/heartsurgery](http://stanfordhealthcare.org/heartsurgery)



Jack Boyd, MD  
*Clinical Assistant Professor, Cardiothoracic Surgery*  
*Director of Advanced Coronary Revascularization Surgery Program*



Minor variations will depend upon practice pattern, however, out of every 100 diagnostic cardiac catheterizations positive for multi vessel coronary artery disease, approximately 50 patients will be referred for CABG. Among these 50 patients, we propose that 25 patients be sent to Stanford for the surgical portion of Hybrid Coronary Revascularization (HCR). Our advanced HCR team will perform a minimally invasive LIMA to LAD. The patient will return home, and after a one-month recovery, undergo PCI to the non-LAD territories by the referring interventional cardiologist. These additional 25 patients would represent a 50% increase in PCI volume for the interventional cardiologist within this group of 100 patients.

Partnering with a minimally invasive cardiac surgeon, the interventional cardiologist increases the patient population with significant coronary artery disease who will receive a LIMA to the LAD. Our advanced coronary revascularization program works as part of a multidisciplinary cardiac care team, to offer the best available treatment option for each individual patient.

## About HCR

### Minimally Invasive LIMA to LAD

- Direct
  - 5-7cm left anterior thoracotomy
  - Mammary harvested under direct vision
  - Typically, off-pump anastomosis

\_\_\_\_\_ **OR** \_\_\_\_\_

- Robot –Assisted
  - Three or four 0.5-1cm ports for ‘docking’ robot
  - Robotic harvested mammary artery
  - Typically, off-pump anastomosis thru ~4cm incision (with an extension of previous port site)

\_\_\_\_\_ **PLUS** \_\_\_\_\_

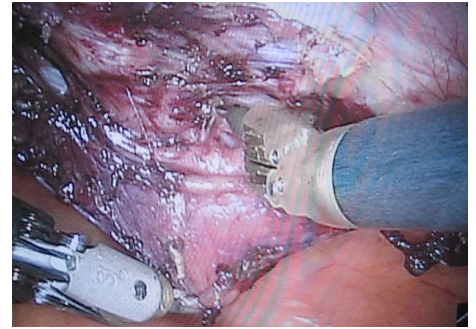
- PCI to significant stenosis in non-LAD vessels (can be concurrent with surgery or staged before or after surgery)

### Candidates for HCR

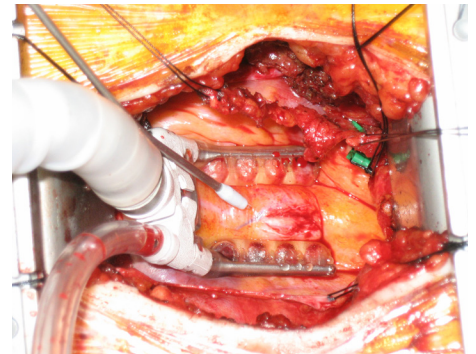
- Patients with 3 vessel CAD
- Patients with ACS and multivessel disease in which culprit lesion is not the LAD (culprit lesion stented at time of presentation)
- Patients with LAD lesions that are unfavorable for PCI
  - Chronic total occlusions
  - Bifurcation lesions
  - Moderate to severe target lesion calcification
  - Diabetes as a comorbidity
- Patients with unprotected LM CAD

### Potential Benefits

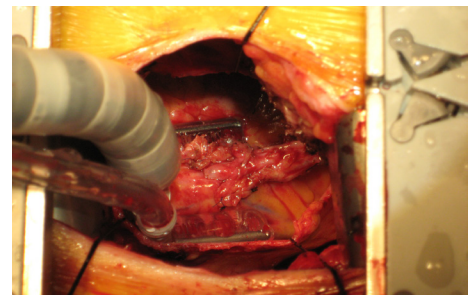
- Superiority of LIMA to LAD provided to patients
- Minimally Invasive Surgery
  - Avoid full sternotomy
  - Shorter ventilation times
  - Shorter ICU stay
  - Shorter hospital stays
  - Less blood utilization
  - Faster return to active life
  - Less pain
  - Lower risk of complications
  - Minimal incisions and scarring
  - Decreased risk of stroke
  - Eliminates risk of sternal wound complication



*Robot assisted dissection of internal mammary artery*



*Exposure for minimally invasive coronary anastomosis*



*Internal mammary artery anastomosis to coronary artery*