# Minimally Invasive Off Pump Redo CABG With Gastro-epiploic Artery Graft: A Real Deal

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## ABSTRACT

Isolated right-sided coronary lesions causing angina or heart failure in the setting of patent left-sided stents or grafts is becoming more common.

The feasibility of employing minimally invasive right gastro-epiploic artery (RGEA) grafting to the posterior descending artery (PDA) in patients with prior coronary artery bypass grafting (CABG) was assessed in 3 patients with recalcitrant angina or heart failure (HF) due to inferior wall ischemia.

There was no perioperative mortality, respiratory failure, or atrial fibrillation, and the mean length of stay was 4 days. There were no conversions to sternotomy, cardiopulmonary bypass (CPB) assistance, or reinterventions for bleeding.

Use of the RGEA in minimally invasive redo revascularization is feasible, safe, and associated with excellent procedural and early functional improvements.

## INTRODUCTION

*Background*: Patients with prior CABG requiring grafting to the right coronary circulation with a patent left internal mammary artery (LIMA) present a particular challenge for revascularization [1-2].

Percutaneous Coronary Intervention (PCI) is often less possible due to long segment occlusions or previous unsuccessful attempts. Re-sternotomy carries a risk to the LIMA [3].

*Objective*: To evaluate feasibility of performing RGEA to PDA grafting in patients with prior CABG via a minimally invasive approach.

## METHODS

3 patients were identified with recalcitrant angina or HF due to inferior wall ischemia and unsuccessful attempts at stent placement (a patent LIMA to LAD, and stress studies that showed inferior wall viability).

A lower midline sternal incision was made and extended as an upper midline laparotomy, approximately 10 cm in length. The PDA was then identified after careful lysis of adhesions.

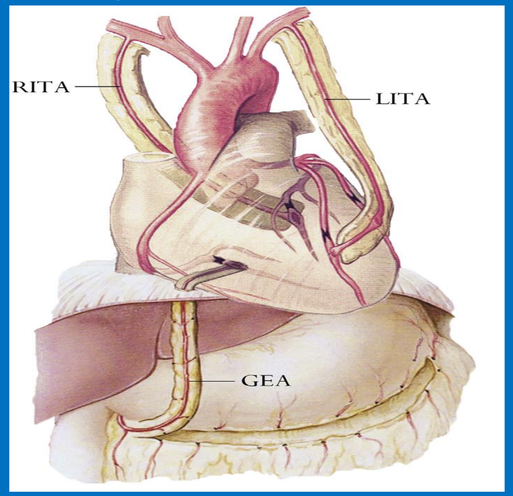



**Figure**: Total arterial revascularization with 3 in situ grafts (with reprint permission from Giuseppe Tavilla [1]).

The RGEA was harvested in a skeletonized fashion with a harmonic scalpel to its proximal origin from the gastroduodenal artery. The conduit was brought into the pericardial sac through a small opening in the diaphragm. Off-pump CABG was then performed to the exposed PDA.

## RESULTS & DISCUSSION

Of our three patients, one presented with symptoms of heart failure, and two presented with angina.

The mean ejection fraction (EF) was 34% with a range from 20-55%. One patient had end stage renal disease and was on dialysis. Two patients required an endarterectomy of the PDA prior to grafting.

There were no conversions to sternotomy, CPB assistance, or reinterventions for bleeding. There was no perioperative mortality, respiratory failure, or atrial fibrillation. The mean length of hospital stay was 4 days.

No episode of stroke or deep wound infection were identified. At a mean follow up of 18 months (range 2 – 48), all patients continue to do well with no recurrence of angina or symptomatic heart failure.

## CONCLUSION

Minimally invasive RGEA grafting to the PDA is a promising option in patients with recurrent angina or heart failure with patent left-sided graft. RGEA graft in a redo revascularization situation is feasible, safe, and associated with excellent procedural and early functional improvement.

## REFERENCES

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