

Outcomes Of Performing Long Left Internal Mammary Artery (LIMA) To Left Anterior Descending Artery (LAD)

Anastomosis: An Experience Of Qatar

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Introduction

By virtue of percutaneous coronary intervention, majority of the cases being referred for surgical coronary revascularization in the current era, are diffusely diseased cases with great anatomical complexity. To establish complete revascularization, surgeons may increasingly need to perform extra maneuvers to get a good distal runoff; One of these maneuvers is to dissect a long segment of coronary artery and reconstruct long anastomosis. However, there is controversy in the literature regarding safety and efficacy of this method. In this study we reviewed the outcomes of long segment Left Internal Mamary Artery (LIMA) to Left Anterior Descending Artery (LAD) anastomosis and compared it with outcomes of conventional length of anastomosis in our practice.

Methods

We retrospectively reviewed 1600 patients who had undergone isolated CABG between January 2020 to September 2023. 30 patients had undergone long LIMA-LAD anastomosis, which is defined as more than 10 mm anastomosis, (Named as LA Group). Another group of 60 patients who had undergone CABG with usual length of LIMA-LAD anastomosis (Named as Non-LA Group) were 2:1 propensity matched based on Age, Gender and Logistic EUROSCORE II (European System for Cardiac Operative Risk Evaluation), Patients with incomplete operative documents were excluded. Univariate analysis was used to compare variables among these two groups.

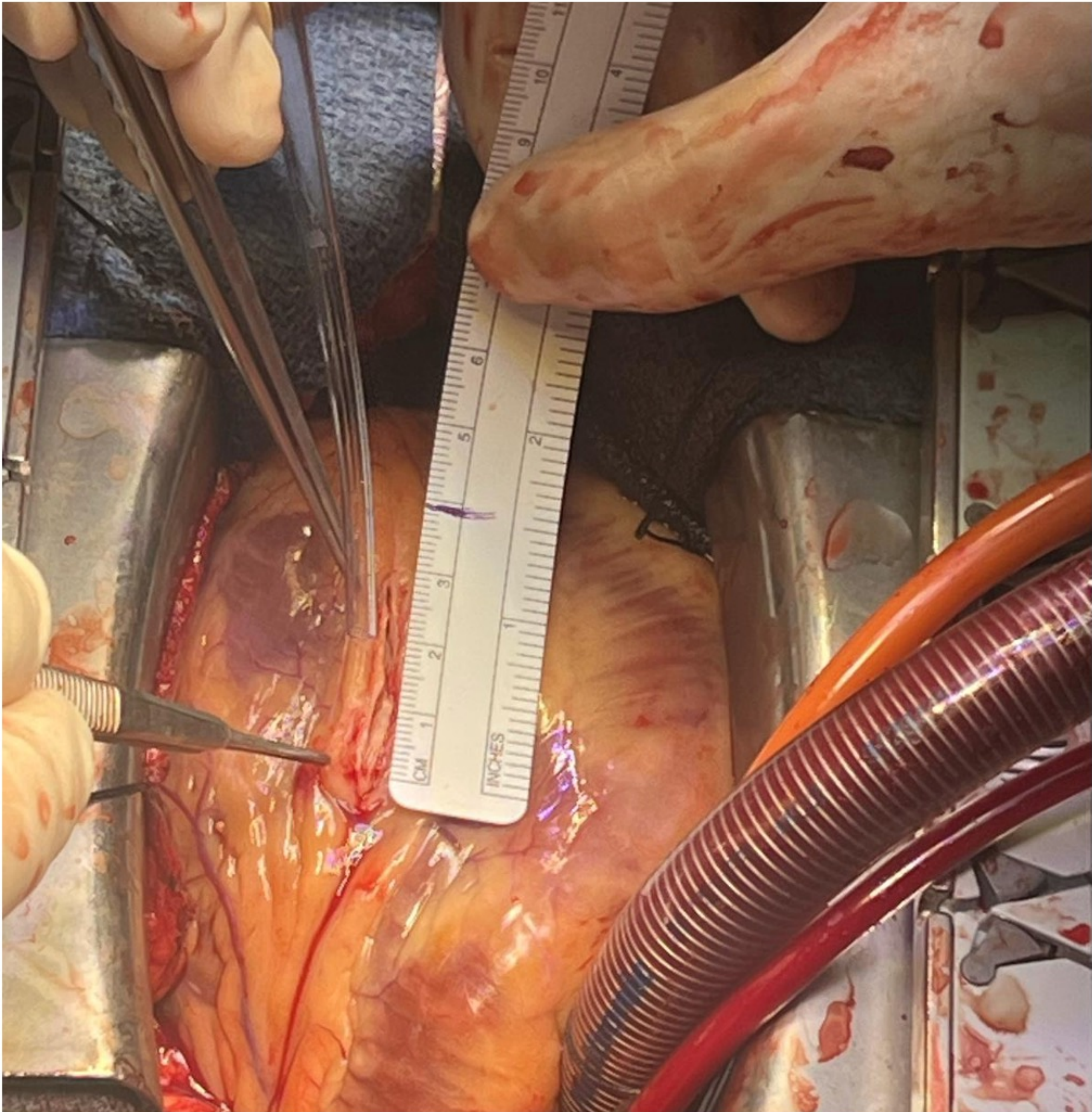


Figure 1: Long Arteriotomy of Left anterior Descending Artery, Measuring 30 mm

Results

By Univariate analysis we found out that preoperative risk factors were similar among both groups, except history of myocardial infarction 30 days before surgery which was higher in the LA group 21/30 Vs 26/60 in non-LA group (P value = 0.015). LA group had longer cross clamp time (69.56±24.19 min) as compared to non-LA group (59.02±31.27 min) (P = 0.000) and both groups had similar intraoperative complications rate. In hospital mortality was 1/30 (3.3 %) in LA group and 0/60 (0.00%) in non-LA group (P Value=0.144). Infective complications were higher in LA group 4/25 (4.3 %) 1/52 (1.9 %) (P Value=0.020), which can be related to longer operative time. After three months follow-up, readmission rate was 0/28 (0 %) and 7/60 (11.7 %) (P Value=0.060); Chest pain complaint was 1/26 (3.8%) and 4/56 (6.7 %) (P Value=0.537); Need for re-angiography 2/29 (6.9 %) and 1/60 (1.7%) (P Value=0.200); in LA and Non-LA groups, each respectively.

CONCLUSION

In our study, long LIMA-LAD anastomosis was associated with longer cross clamp time intra-operatively. In terms of postoperative complications, in-hospital mortality and 3 months follow-up outcome, long anastomosis was not associated with any further adverse outcome. Furthermore, the non-LA group participants were found to have higher readmission rate due to chest pain or shortness of breath. Hence, it can be concluded that long LIMA-LAD anastomosis can be safely performed in patients with diffuse coronary artery disease, if it’s needed to establish complete revascularization.

REFERENCES

1- Myers PO, Tabata M, Shekar PS, Couper GS, Khalpey ZI, Aranki SF. Extensive endarterectomy and reconstruction of the left anterior descending artery: early and late outcomes. J Thorac Cardiovasc Surg. 2012;143(6):1336-40.