Case Report

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RITA – LITA 'Y' Conduit in an Asymptomatic Left Subclavian Artery Stenosis: A Safe Alternative

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Abstract

Patients with symptomatic left subclavian artery stenosis (LSA), often undergo intervention. The need for intervention in incidentally detected LSA stenosis in patients undergoing coronary artery bypass grafting (CABG) is controversial. We evaluated an elderly male with triple vessel coronary artery disease and borderline stenosis in LSA. Bilateral internal thoracic artery (ITA) conduits were harvested and right ITA – left ITA 'Y' grafting was done. This approach can be considered as an alternative for patients undergoing bypass surgery with asymptomatic LSA stenosis to prevent coronary subclavian steal syndrome.

Keywords: Left subclavian artery (LSA) stenosis; RITA- LITA 'Y' configuration; Coronary Subclavian Steal.

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Introduction

Prevalence of LSA stenosis in patients undergoing CABG is 0.2-6.8% [1]. Most of these patients have undergone intervention with either angioplasty or stenting, either prior to or post CABG surgery. Surgical bypass of LSA can also be an alternative. When using pedicled left ITA graft in stenotic LSA, there is a possibility of coronary subclavian steal later in the life as the stenosis can progress even in asymptomatic patients. Treating asymptomatic LSA stenosis thus can be avoided with right ITA – left ITA 'Y' configuration and the stenosis tackled when symptomatic.

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Case Report

An elderly gentleman presented to our department with history of left sided chest pain with no significant past history. Troponin - T was negative. NSTEMI was diagnosed. On routine echocardiography, ejection fraction of 45% with

moderate mitral regurgitation was demonstrated. Coronary angiogram revealed triple vessel disease (TVD) with < 50% occulusion of left SCA. CT Arch Aortogram showed 50% stenosis of LSA with other arch vessels showing normal caliber. (Figs. 1,2) On careful blood pressure recording of bilateral upper limbs, 5 mmHg differences in pressure was noted. In view of absent upper limb claudication, insignificant LSA stenosis and trivial upper limb pressure difference, we decided do CABG for triple vessel disease and address the mitral valve with conservative management for LSA stenosis. He underwent right ITA- left ITA 'Y' configuration grafting; with right ITA to left anterior descending, left ITA to obtuse marginal and vein graft to posterior descending artery. Mitral valve repair with 28 Carpentier Edwards ring was performed. Patient was shifted to recovery with stable hemodynamics.

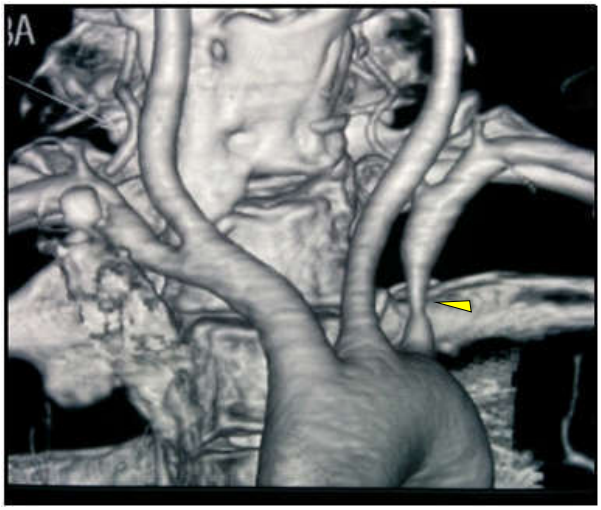

Fig. 1: CT arch aortogram with stenosis of proximal left subclavian artery (arrow head).

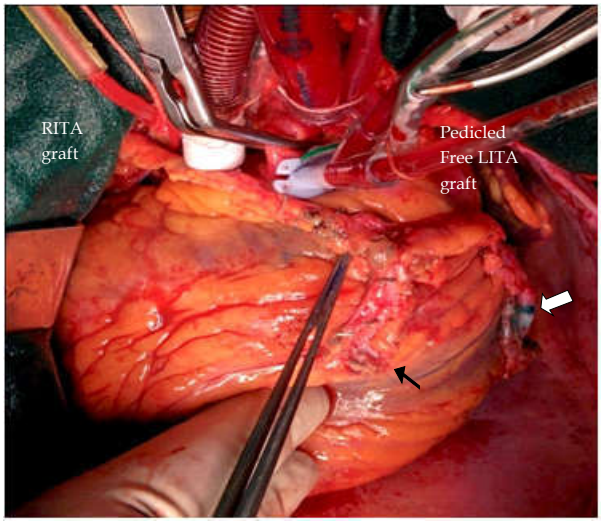

Fig. 2: RITA-LITA' Y' with RITA to LAD (black arrow) and LITA to OM (white arrow).

Discussion

Coronary artery disease and peripheral artery rarely co-exist simultaneously. LSA stenosis is more commonly observed. Subclavian artery stenosis usually affects the brain and upper extremities. Atherosclerosis is the most common cause of this condition, but other etiology also needs importance.

Symptomatic LSA stenosis needs intervention with options of surgical or endovascular approach depending on the urgency. If an ITA conduit is being planned for CABG, stenosis can be treated prior to or after the procedure [2]. Controversy still exists over the approach towards asymptomatic LSA stenosis. The need for intervention has not shown benefit over medical therapy in asymptomatic patients [3]. Stenosis in LSA was left without any intervention in our patient as the upper limb pressure difference was <10 mmHg, no vertebrobasillar or upper limb claudication symptoms and CT angiography showing <50% stenosis.

A free ITA graft or the contra-lateral in situ ITA can be used provided the parent vessel is free of significant disease. Graft patency rates of right and left ITA are similar. Patency rates of radial artery are inferior when compared to ITA [4]. The incidence of coronary subclavian steal post CABG is reported more frequently in busy cardiac centres [5]. We performed Y grafting with free pedicled left ITA to right ITA in view of progression of stenosis and prevention of coronary subclavian steal.

Conflict of Interest: None.

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