

CASE REPORTS

CORONARY ARTERY BYPASS GRAFTING IN POST THYMECTOMY THYMATOUS-MYASTHENIA GRAVIS PATIENT; A CASE REPORT

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ABSTRACT

Coronary artery bypass grafting (CABG) in post thymectomy patients of thymomatous myasthenia gravis (MG-T) is a rare procedure. A 42 years old patient with previous thymectomy and chest radiotherapy was in disease remission on pyridostigmine, oral steroids and azathioprine for seventeen years until developed critical diffuse left main stem (LMS) disease. He underwent coronary artery bypass grafting, early extubation, smooth post operative course and was discharged home on 4th post operative day. Optimization for surgery, intraoperative revascularization technique and post operative intensive care management of these patients can be really challenging and require multidisciplinary team effort. Moreover, treatment therapy should be tailored according to severity of symptoms and disease stratification of each individual.

Keywords: Coronary artery bypass grafting, Left main stem, Thymomatous myasthenia gravis.

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INTRODUCTION

Thymomatous myasthenia gravis is an acquired autoimmune disease in which autoantibodies are formed against acetylcholine receptors at motor end plate^{1,2}. It is a rare disease with annual incidence of 1-2/1,00,000 and prevalence of around 5-15/1,00,000 in United States^{3,4}. In literature there are very few reported cases of CABG in MG-T patients.

CASE REPORT

A 42 years old male patient with 25.7 BMI, was diagnosed as a case of seropositive myasthenia gravis in 2002 when he presented with 2 months history of progressive fatigue especially at night, bilateral ptosis, skeletal electromyographic studies suggestive of myasthenia gravis and raised ach autoantibody (AChRAB) levels. Further workup of patient revealed encapsulated thymoma on chest computed tomographic (CT) scan and magnetic resonance imaging (MRI), for which he underwent transternalthymectomy in 2002. Histopathology of patient confirmed Thymoma with Masaoka stage II. He received chest radiotherapy (Co-60 and Photon X-6) for 6 months and was advised Pyridostigmine, oral steroids and Azathioprine after surgery. He was doing well on this treatment when had disease relapse in 2007 due to failed drug compliance. He underwent plasmapheresis and IVIG for his Osserman grade IIIA symptoms⁵ which resolved. Later on, patient had disease remission on medications until he sought medical advice for his shortness of breath and

central chest pain in January 2019. On enquiring he could walk around forty steps and single flight of stairs followed by central chest pain and SOB which relieved on taking rest (NYHA class II). His Transthoracic Echo showed normal size chambers with good LV function and Ejection Fraction of 60%. Thallium scan showed small sized partially inducible ischemia of moderate to high severity with partial thickness infarct in inferior wall and moderate severity in inferolateral wall.

Pre-medications included continuation of pyridostigmine and low dose Prednisolone till day before surgery with single intravenous Solucortef 100mg on day of surgery. Anaesthesia was aimed at minimal use of depolarizing agents, opioids and benzodiazepines. He was the first patient on morning operation list. Central venous and arterial catheters were inserted in theatre with continuous monitoring of electrocardiography (ECG), pulse oximetry, invasive blood pressure, capnography, urinary catheters and peripheral as well as core body temperature. Induction started with sevoflurane, Fentanyl 1ug/kg, and propofol 0.5mg/kg. Laryngoscopy and intubation was performed. Anaesthesia was maintained using Isufloflurane@ 1Mac. Redo-median sternotomy was performed, both aortic and venous cannulation was done and cardiopulmonary bypass was established. Intermittent ante grade warm blood cardioplegia was used and aorta was cross clamped. LIMA and Lt GSV were harvested. After ensuring the calibre and blood flow in LIMA per-operatively, two anastomoses i.e. LIMA to mid LAD and OM to Ascending aorta using reverse left great saphenous

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vein graft were fashioned. Patient was weaned off bypass and aortic and venous cannulas were removed. Total bypass time was 61 minutes and Aortic cross clamping was 34 mins with minimum temperature of 30°C. Bilateral pleural and mediastinal drains were placed. One right atrial (RA) and one right ventricular (RV) pacing wires were attached and conventional sternal steel wire closure was done.

Post operatively fast track extubation of patient was done i.e. within 6hrs on minimum inotropic support, pyridostigmine/low dose oral steroids were restarted and patient was shifted to high dependency unit on first postoperative day and was discharged from ward on 4th postoperative day. Outpatient follow up was unremarkable for any wound dehiscence or surgical site infections.

DISCUSSION

CABG in post thymectomy myasthenic patients is a rare procedure and only few case reports and series are found in literature^{6,7}. There exists a great controversy in management of these patients and multidisciplinary team effort is required to individualize the treatment according to needs. Osseman was the first who tried to classify myasthenia gravis patients in five groups based on their symptoms and possible risks⁸. Literature shows evidence of ACh autoantibodies involvement in myocarditis and increased doses of anticholinesterases causing coronary vasospasm leading to angina^{9,10}.

Therefore, in light of our experience we recommend preoperative use of anticholinesterases and low dose steroids in patients of MG-T till Osseman stage IIIA, undergoing CABG and restarting them from early postoperative period.

CONCLUSION

Management of MG-T patients can be really

challenging during CABG because of their variable response to muscle relaxants and other anaesthetic agents in both intra and postoperative period and needs multidisciplinary approach for optimization of these patients for surgery. Moreover, use of LIMA as conduit is safe in these patients provided it is harvested by experienced surgeon and have good per-operative blood flow.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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