

**A CASE STUDY -CORONARY ARTERY BYPASSES GRAFTING****G.E.MARGAREAT THATCHER, MSC (N)***Asst. professor, Sree Balaji college of Nursing***ABSTRACT**

Cardiovascular diseases (CVDs) are disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease, rheumatic heart disease and other conditions. Four out of five CVD deaths are due to heart attacks and strokes. Individuals at risk of CVD may demonstrate raised blood pressure, glucose, and lipids as well as overweight and obesity.. In the 1980s, the prevalence of CABG increased and safety improved. Thoracoscopic harvesting of the left IMA was reported in 1998 by Duhaylongsod and minimally invasive and robotic surgical approaches were also developed currently, the number of CABG is declining from a peak of 519,000 operations in 2000 to an estimated 300,000 cases in 2012 Cardio vascular diseases currently are a leading cause of death in India. The Global Burden of diseases 2000 study reported an estimated mortality of 1.6 million in the year 2000 from coronary artery disease. However this mortality rate is on the increase. WHO has predicted_a_higher mortality rate by 2020 Cardio vascular diseases is the world's leading killer, accounting for 16.7 million or 29.2 per cent of the total global deaths in 2003. According to World Health Organisation (WHO) bulletins, 1.2 million Indians died from heart diseases in 1990 and it predicts that by 2010, 100 million Indians will have heart disease (25% of all cardiac patients global cardiac patient globally by 2020, This study will definitely help Nursing and paramedical Graduates in improving knowledge and skills to apply in practical to save the life of patients with cardiac diseases.

KEYWORDS: Artery, bypass, case, coronary, grafting, study.**G.E.MARGAREAT THATCHER, MSC (N)**
Asst. professor, Sree Balaji college of Nursing

*Corresponding author

CASE STUDY MR.X

Mr.Raju 59 year old male presented with history of Breathlessness and the chest pain on exertion for 15 days.Mr.Raju was a known case of Diabetes Mellitus for 15 years on T.Metformin and T.Glipizide. There is no significant history of chronic illness, communicable diseases, or surgery in his family. On blood investigation CK-MB increases.ECG segment elevation, on Echocardiography findings hypo kinetic and kinetic wall motion.Mr .Raju was diagnosed as coronary Artery Disease. Coronary artery disease or arterosclerotic heart disease) is the end result of the accumulation of athermanous plaques within the walls of the coronary arteries that supply the myocardium (the muscle of the heart) with oxygen and nutrients. It is sometimes also called coronary heart disease (CHD), but although CAD is the most common cause of CHD, it is not the only cause.

INCIDENCE

- According to the World Health Organisation (WHO), cardio vascular diseases (CVDs) are the main cause of death globally. Every year, more people die of heart disease (coronary and rheumatic) than any other diseases.

ETIOLOGY

- In 2004, almost 7.2 million people died of coronary heart disease. Globally, cardiovascular diseases account for 29 percent of all death.
- According to studies conducted by the WHO, people in the developing countries are now more prone to heart disease. Almost 82 percent of death caused by cardio vascular diseases (including diseases affecting the heart) occurs in middle and low income countries. The key causes of CVDs include poor lifestyle, diet, stress and high blood pressure.

According to WHO, almost 23 million people will die of coronary and rheumatic heart diseases and stroke by 2030. The South Asia region will see an increase in the number of death due to heart disease.

CAD risk in Indians

- ~ In India 90 people die of heart disease every hour. 30% of adult population including vegetarian have inherent fact
- ~ 10-15% of adult Indian population has CAD
- ~ By 2015 India will have maximum coronary deaths in the world
- ~ 3-4 times higher than white Americans
- ~ 6 times higher than Chinese
- ~ 20 time higher than Japanese
- ~ CAD in India occur 5-10 years earlier.

	Book picture	Patient picture
Modifiable risk factors		
➤ High blood cholesterol level		Present
➤ Atherosclerosis		Present
➤ Cigarette smoking, tobacco use		
➤ Hypertension		
➤ Diabetes mellitus		
➤ Lack of oestrogen in women		Not known
➤ Physical inactivity		
➤ Obesity		
➤ Physical exertion and emotional stress		
Non modifiable risk factors		Present
➤ Family history of coronary artery disease		
➤ Increasing age		
➤ Gender (heart disease occurs three times more often in men than in premenopausal women)		
➤ Race		
Other causes		
➤ Coronary lesion		
➤ Physical exertion and emotional stress		
➤ Aortic stenosis		
➤ Coronary vasospasm		Not known
Coronary artery embolism		

PATHOPHYSIOLOGY

As a result of various etiological factors there will be sticky endothelium and formation of plaque and lumen

obstruction of the coronary artery leads to inadequate blood supply to the myocardium cause ischemia and infarction.

CLINICAL FEATURES

	Book picture	Patient picture
1.	Diaphoresis cold and clammy skin, facial pallor	Present
2.	Hypotension	Present
3.	Bradycardia	present
4.	Premature ventricular and atrial beats	present
5.	Palpitation, dyspnoea	present
6.	Severe anxiety	
7.	Disorientation, confusion, restlessness	present
8.	Fainting	
9.	Nausea & vomiting	

INVESTIGATION

The echocardiogram showed acute MI, cardiac enzymes are elevated. Cardiac catheterization shows coronary artery disease. On ECG ST segment elevated and T wave inversion.

MANAGEMENT**Medical management**

- Supplemental Oxygen
- Nitroglycerine (Vasodilator)
- Morphine (Analgesics)
- Aspirin 150-300mg (Antiplatelet)
- Beta Blocker (Reduce Myocardial contraction)
- Angiotensin – converting enzyme inhibitor within 24 hours. (Prevents conversion of Angiotensin I to II and controls BP).

Thrombolytic therapy

To dissolve and lyse the thrombus formed and allow blood to flow enhancing reperfusion minimizing the size of infarction and preserving ventricular function.

Percutaneous Coronary Intervention (PCI)

It may be used to open the occluded coronary artery and promote reperfusion to the area that has been deprived of Oxygen.

Anticoagulant therapy

Prevents clot formation at the same lesion site.

Invasive coronary Artery Procedures.

Percutaneous coronary Intervention include

1. PTCA (Percutaneous transluminal coronary angioplasty)
2. Intracoronary stent implantation

3. Atherectomy and
4. Brachytherapy

Percutaneous transluminal coronary angioplasty

It is an interventional procedure, a balloon tipped catheter is used to open blocked coronary vessels and resolve ischemia and infarction.

Coronary Artery Stent

After PTCA, the area that has been treated may close off partially or completely called restenosis. A stent is a metal mesh that provides structural support to a vessel at risk of acute closure. The stent is positioned over the angioplasty balloon. When the balloon is implanted, the mesh expands and presses against the vessel wall, holding the artery open. The balloon is withdrawn, but the stent is left permanently. It is an invasive interventional procedure that involves the removal of the atheroma, or plaque from a coronary artery by cutting, shaving, or grinding.

SURGICAL MANAGEMENT**Coronary Artery Bypass Grafting**

It involves anastomosis of a graft anatomised to aorta or its branches with other end of the graft secured to a distal portion or affected vessel and adequate blood flow is restored. Neo-angiogenesis in a woman's heart after FGF-1 treatment. Beyond drug therapy, interventional procedures, and coronary artery bypass grafting, angiogenesis now offers a new, specific and – so far as we know from three human clinical trials – effective treatment targeted for women's coronary artery disease.

MANAGEMENT FOR Mr.Raju

- Coronary artery bypasses grafting (CABG – coronary artery bypass surgery).

Inj. Cefotaxime 1gm IV Bd
Inj.ciproflaxin 200mg IV Bd
Inj. Metrogl 500mg IV Tds

NURSING INTERVENTION

1. Acute pain related to inflammation secondary to surgical manipulation
 - Pain is evaluated with pain scale score was 6 and provided rest before and after activities. provided warm back rub and analgesics
2. Self care deficit related to imposed activity restrictions and fatigue
 - Encourage x to participate in self care activities and kept necessary articles nearby him and

assisted in sponge bath ,back care toileting and also feeding.

SUMMARY

Mr.Raju was very co-operative with health care personnel. although symptoms were well responding to treatment it was recurring. But she did not develop further complications during hospital stay

CONCLUSION

Coronary artery disease is the most common form of heart disease in the Western world. Prevention centres on the modifiable risk factors, which include decreasing cholesterol levels, addressing obesity and hypertension, avoiding a sedentary lifestyle, making healthy dietary choices, and stopping smoking. There is some evidence that lowering homocysteine levels may contribute to more heart attacks (NORVIT trials). In diabetes mellitus, there is little evidence that very tight blood sugar control actually improves cardiac risk although improved sugar control appears to decrease other undesirable problems like kidney failure and blindness. Some recommend a diet rich in omega-3 fatty acids and vitamin C. The World

Health Organisation (WHO) recommends “low to moderate alcohol intake” to reduce risk of coronary disease although this remains without scientific cause and effect proof.

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CONFLICT OF INTEREST

I have no conflict of interest in the current study.

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