



A Case Report on Single Vessel Disease

Monali Walke^{1*}, Ranjana Sharma¹ and Samruddhi Gujar¹

¹Department of Medical Surgical Nursing, Smt. Radhikabai Meghe Memorial College of Nursing, Datta Meghe Institute of Medical Sciences, (Deemed to be University), Sawangi (M) Wardha, Maharashtra, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI:10.9734/JPRI/2021/v33i44A32621

Editor(s):

(1) Dr. Rafik Karaman, Al-Quds University, Palestine.

Reviewers:

(1) Mariana Suárez Bagnasco, UCU, Uruguay.

(2) Nitin Girdharwal, Dr. APJ Abdul Kalam University, India.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/71741>

Case Study

Received 29 May 2021
Accepted 06 August 2021
Published 18 September 2021

ABSTRACT

Introduction: Coronary artery disease (CAD) involves the decrease flow of blood to muscle of the heart because of the to build-up of plaque (atherosclerosis) in arteries of the heart. It is one of the most common cardiovascular disease. Tiny branches off larger coronary arteries are get damaged and not able to dilate proper. Small vessels need to expand and also providing oxygen-rich blood to heart. Coronary arteries are damaged, blood flow to the heart decreases.

Background: Coronary artery disease affected 110 million people and resulted in 8.9 million deaths. It makes up 15.6% of all deaths, making it the most common cause of death globally. In the developed country risk of death from CAD decreased between 1980 and 2010.

Case Presentation: A case of 60 year old men admitted in the cardiac unit with complaints about the abdominal pain and Nausea, vomiting, weakness from the 2 days after examining and blood pressure is 110/70 mm of Hg. He had these complaints since 2 days.

Interventions: The patient was treatment started with orally Tab. Ecosprin 150mg, Tab.Ultracet, Tab. Pantop 40 mg, Tab. Augmentin 625 mg. Patient is also undergone PTCA(Percutaneous Transluminal Coronary Angioplasty). Treatment consisted of medication, therapeutic exercise, and health education.

Conclusion: In this study, we mainly focus on medical and surgical management and outstanding nursing care helped prevent further complication. Over all the patient response was good and improvement occur after PTCA.

Keywords: Coronary artery disease; abdominal pain; health education; therapeutic exercise.

1. INTRODUCTION

Coronary artery disease affected 110 million population and 8.9 million deaths. It makes up 15.6% of all deaths, Its become common cause of death globally. In the developed country risk of death from CAD decreased between 1980 and 2010. As of 2010, CAD was leading cause of death globally resulting in over 7 million deaths. It affect individuals at any age but it more among older ages. Mostly Males affecting than females [1].

Risk factors are like hypertension, smoking, diabetes, lack of exercise, obesity, high blood cholesterol, poor diet, depression, and consumption of more amount alcohol. Investigation will help for making diagnosis like electrocardiogram, cardiac stress testing, coronary computed tomographic angiography [2].

For reducing the risk of CAD includes of taking a healthy diet, doing exercise regular, and avoid doing smoking. Medications such as antiplatelets (including aspirin), beta blockers, or nitroglycerin recommend. In severe cases, percutaneous coronary intervention or coronary artery bypass surgery can benefit [3].

2. CASE HISTORY

2.1 Patient Information

A case of 60 year old men admitted in the cardiac unit with chief complaints about the pain in abdomen, nausea and vomiting 2 days, blood pressure is 110/80mmof Hg. He had these complaints since 2 days.

2.2 Medical / Surgical History

The patient has developed the problem of hypertension before 6 year ago. After some investigation done the Abdominal angiography, inferior mesenteric artery occlusion with coronary artery disease - single vessel disease diagnosed. Patients IMA (Ischemic mesenteric artery) stenting was done in 2016 has a history of hypertension. No past and present surgical history of the patient.

2.3 Physical Examination

2.3.1 General parameter

Height: 159 cm, weight: 62 kg, body mass index (BMI): 24.60

Vital sign: Temperature: 98.2⁰F, Pulse: 84 beat / min, Respiration: 20 breath/min, Blood pressure: 110/70mmof Hg.

2.3.2 Pulmonary/cardiovascular

Inspection - Symmetrical of chest movement, Palpation - No tenderness, no masses, symmetric chest expansion, Auscultation - Murmur sound is present, Percussion - Fluid accumulation present.

2.3.3 Integumentary

No any skin lesions.

2.3.4 Musculoskeletal system

He was normal and body mass index (BMI) of the 24.60. Slow range of motion (ROM). Muscle weakness was present and a reduction in muscle strength. No Periphery edema in lower extremities.

2.4 Diagnosis Assessment

2.4.1 Blood Investigation: In complete blood count (CBC)

Hemoglobin is 16.4 mg/dl(11-13mg/dl),mean corpuscular hemoglobin concentration is 31.1 g/dl , Mean corpuscular volume (MCV) is 98.5fl(78-98 fl), Total RBC count is 5.34 m/ul, WBC is 13100 (4500-11,500 k/ul) ,platelet count is 2.67/ml (150,000 to 450,000), Hematocrit (Hct) Levels is 52.3 % (37 %-47 %), monocytes is 04 %(00-15%), Granulocytes is 75 % , Lymphocytes is 20 %(20%-40%) , red cell distribution width (RDW) is 13.7 (11.6-14.8) ,Eosinophils is 01 % (1-5 %) basophils is 00 % (0-1 %).

2.4.2 In kidney function test (KFT)

Urea is 46 (9.81 – 20.1 mg/dl), creatinine is 1.1 mg/dl (0.7-1.4 mg/dl),sodium is 139meq/ l (135-145meq/l), potassium 5.4(3.5-5.5 meq/l).

2.4.3 In liver function test (LFT)

Alkaline phosphates is 59 (32-45g/l),ALT is 20 IU/L (0-50IU/L), AST is 27 IU/L (10-40 IU/L),total protein is 27 (23-38 g/dl) total bilirubin is 0.9 g/dl (1-1 g/dl),conjugated bilirubin is 0.2 mg/dl (0-0.25 mg/dl),unconjugated bilirubin is 0.7mg/dl (0.2-0.7mg/dl), globulin is 3.1.

In Lipid profile total cholesterol is 157 (200-239 mg/dl), triglycerides is 110 mg/dl(150-199 mg/dl),LDL Cholesterol is 98 mg/dl (130-159 mg/dl), HDLcholesterol is 44 (35-45 mg/dl) **Calcium** is 8.9 mg/dl (8.6-10.2 mg/dl).

In Urine examination urine albumin is nil, urine sugar is nil, an epithelial cell is 1 cell /hpf.

In peripheral smear,red blood cell (RBC's)-normocytic normochromic platelets are adequate on smear,seen in clumps no haemoparasite seen.

2.4.4 In electrocardiogram (ECG)

An ECG may reveal abnormalities in heart rhythm seen in the ECG.

2.4.5 2D Echocardiography

Ischemic Heart Disease, Left ventricular internal diameter end diastole: 38,Left ventricular internal diameter end systole: 30,PW: 11,EF: 45%,Left Atrium: 30,Ascending Aorta : 26,regional wall motion abnormalities, Left ventricular ejection fraction (**LVEF**) : 45%,Type: Internal Diameter Dystole.

2.4.5 Coronary angioplasty report

Anesthesia: Local, 2D echo: Left ventricular ejection fraction (**LVEF**) 45%, Approach: R trans Brachial, Contrast: Non ioninc Onipaque r 350 mg 1/100ml=80ml,catherer: 6F sheath FBU 3.5. Note: there is a define risk of stent thrombosis and even re stenosis after angioplasty and stent placement life style modification, regular check up and continuing Aspirin and ticagrelor are mandatory.

2.4.6 Therapeutic intervention

General measures: To check the vital sign (Temperature, pulse, respiration and BP.), Chest pain, Breathing difficulty, airway, fluid and electrolyte balance and prevention of complications like Myocardial infarction, pulmonary aspiration are mandatory.

2.5 In Pharmacological Management

2.5.1 Antiplatelet

Tab.Ecosprin 150mg is an antiplatelet medicine containing acetylsalicyclic (also called Aspirin). It prevent blood clot formation within the body. It is used to prevent the risk of heart attacks, stroke

and chest pain(heart related). It is also used to reduce the chances of formation of clot after surgery, in patients with risk of vascular thrombosis [4].

2.5.2 Tab. Ultracet

Tab.Ultracet is a pain relieving medicine. It is used in various condition such as muscle ache, back pain, joint pain [5].

2.5.3 Antibiotic

Tab. Augmentin 625 is a penicillin type of antibiotic it helps body fight with infections caused by bacteria. It is help for treating infection of the lungs.(e.g.Pneumonia), Ear, Nasal sinus [6].

2.5.4 Proton pump inhibitors (PPIs)

Tab..pantoprazole 40 mg IV. Pantoprazole is more effective than H₂ receptor blockers in reducing gastric acid secretion [7].

3. SURGICAL MANAGEMENT

The most common major cardiac surgery is CABG' surgery. Also Percutaneous coronary intervention to stretch narrowed arteries another surgical procedure for client of coronary artery disease. In this case of patients Abdominal Coronary Angiography report conformed diagnosis of Single vessel disease thus there is performed of Percutaneous Transluminal Coronary Angioplasty (PTCA) [8].

4. NURSING MANAGEMENT

Prevention of infection it must be at the forefront of the techniques for nurses. Patients must need to know of their condition and make motivated to the required adjustments to their lifestyle, which will be important in avoiding recurrence. Nurses must calm and reassuring and can be able to handle patients pain and sign symptoms. Nurses must provide psychosocial support. Hemodynamic control also the close examination of vital signs are general objectives of patients and also recognition of cardiac changes on the ECGs is also important aspect of nursing care [9].

5. NURSING DIAGNOSIS

5.1 Acute Pain Related Coronary Artery Disease

Goal:- to relieve the pain of patient

Intervention: -

1. Advise patient for notify nurse immediately for pain
2. Observation for symptoms like dyspnea, nausea, vomiting, dizziness, palpitation.
3. Observe patients heart rate and rhythm, vitals sign

5.2 Deficient Knowledge Related about Disease Condition

Goal:-To improve the knowledge of patients about disease condition.

Intervention:

1. Assess the knowledge of patients about disease condition
2. Give reply for patients every question
3. Provide psychological support and Maintain proper communication with patients.

5.3 Anxiety Related Diagnostic Procedure and Treatment Modality

Goal: To reduce anxiety of patients

Intervention :

1. Assess the Anxiety of patients
2. Maintain proper communication with patient
3. Give respond to patients every question and provide psychological support to patient [10].

6. THERAPEUTIC DIET PLAN

For coronary artery disease right diet can improve health of the artery. **Oats** have beta-glucan, its fiber that blocks absorb cholesterol from digestive tract. **Beans** help arteries for decrease amount of cholesterol absorb from food. **Olive & canola oils** are naturally low in saturated and also having trans fats, also containing unsaturated fats. **Almonds, pistachios, walnuts, nuts** are best food for blood vessels. They contain arginine, Amino acid that making blood vessels relax, also making blood flow freely within body. **Fish** are good source of omega-3 fats, help for slow plaque growth [11].

7. REDUCE RISK FACTORS

Initial step for treatment of coronary artery disease is reducing risk factors.

1. Person must quit the smoking, tobacco chewing.
2. Managing health issue like increased cholesterol level, hypertension and

diabetes mellitus must be in under control.

3. Take heart healthy diet: Taking green leafy vegetables, fruits in diet for it help for reduce heart disease risk.
4. Avoid alcohol use: Alcohol consumption must be in limit by men and women
5. Increase activity: Exercise can help for lose weight, improving in physical condition and also for relieving of stress [12].

8. DISCUSSION

A 60 year old male complained of pain in the Abdomen. Patient was apparently develop abdominal pain from 2 days. He had abdominal pain and he thought that it was due to casual reason but later the pain was more severe. So, he came to AVBRH and physician admitted him for further investigation. After all the investigation like Abdominal coronary angiography report, CBC, LFT, KFT, Electrocardiography Report, 2 D echo he was diagnosed as Coronary artery disease as Single vessel disease. For treatment of client drugs are used Tab. Ecosprin 150 mg /OD, Tab. Ultracet OD, Tab. Augmentin 625mg/BD, Tab. Pan 40 mg/OD. In this case Percutaneous Transluminal Coronary Angioplasty (PTCA) was done. Rather than this he does not have any complaints like Diabetes, Asthma, Tuberculosis etc. Now patients condition is good, patients abdominal pain is reduced at some level. For Coronary artery disease various type of surgery is available such as "CABG". Percutaneous Coronary Intervention also performed on client. Early diagnosis and surgery are essential to protect heart and it help prevent severe morbidity.

9. CONCLUSION

While it is complex and difficult to diagnose single vessel disease, careful examination of symptom presentations such as sudden onset chest pain is important symptoms. The coronary angiography report help provide information regarding coronary artery - single vessel disease. When diagnosed with single vessel disease, surgery is not the primary basis of diagnosis and treatment. Coronary bypass graft or Percutaneous Coronary Intervention, are also other choices. Following healthy life style like taking healthy diet, daily exercise, avoiding smoking, tobacco chewing are more helpful for avoiding coronary artery disease.

CONSENT

While preparing case report and for publication patient's informed consent has been taken.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Cardiovascular diseases (CVDs) [Internet]. Available: [https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-\(cvds\)](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds))
2. Coronary Heart Disease | NHLBI, NIH [Internet]. Available: <https://www.nhlbi.nih.gov/health-topics/coronary-heart-disease>
3. Stable Coronary Artery Disease: Treatment - American Family Physician [Internet]; 2021. Available: <https://www.aafp.org/afp/2018/0315/p376.html>
4. Coronary Artery Disease - Treatment Options | Medtronic [Internet]. Available: <https://www.medtronic.com/us-en/patients/treatments-therapies/heart-surgery-cad/treatment-options.html>
5. Ultracet 500mg/50mg Tablet: View Uses, Side Effects, Price and Substitutes | 1mg [Internet]. Available: <https://www.1mg.com/drugs/ultracet-500mg-50mg-tablet-389470>
6. Augmentin Oral: Uses, Side Effects, Interactions, Pictures, Warnings & Dosing - WebMD [Internet]. Available: <https://www.webmd.com/drugs/2/drug-4333-5050/augmentin-oral/amoxicillin-clavulanic-acid-suspension-oral/details>
7. PAN 40 Tablet: View Uses, Side Effects, Price and Substitutes | 1mg [Internet]. Available: <https://www.1mg.com/drugs/pan-40-tablet-325250>
8. 8Coronary heart disease - Prevention [Internet]. nhs.uk; 2018. Available: <https://www.nhs.uk/conditions/coronary-heart-disease/prevention/>
9. Diagnosis, management and nursing care in acute coronary syndrome | Nursing Times [Internet]. Available: <https://www.nursingtimes.net/clinical-archive/cardiovascular-clinical-archive/diagnosis-management-and-nursing-care-in-acute-coronary-syndrome-13-02-2017/>
10. Coronary Artery Disease CAD Nursing Diagnosis Care Plan - NurseStudy.Net [Internet]. Available: <https://nursestudy.net/coronary-artery-disease/>
11. Dietary Therapy for Preventing and Treating Coronary Artery Disease - American Family Physician [Internet]. Available: <https://www.aafp.org/afp/1998/0315/p1299.html>
12. Coronary Heart Disease: Reducing the Risk | Arteriosclerosis, Thrombosis, and Vascular Biology [Internet]. Available: <https://www.ahajournals.org/doi/full/10.1161/01.atv.19.8.1819>

© 2021 Walke et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/71741>