

Nursing Care In Cardiac Surgical Interventions In Intensive Care Unit: A Case Report

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ABSTRACT

Coronary artery disease (CAD) is characterized by narrowing or obstruction of flow in one or more of the vessels nourishing the heart. The study was conducted on a patient diagnosed with coronary artery disease who underwent 3-vessel CABG in a university hospital. Study data was collected using data collection-assessment diagnostics and daily planning methods. The case was examined within the context of Major Gordon's FHP Nursing Care Model and nursing diagnoses approved by North America Nursing Diagnoses-NANDA. 65 year old female patient presented with NYHA Class 2 (New York Heart Association) Functional Classification dyspnea symptoms and chest pain that started nearly a month ago. The patients were diagnosed with coronary artery disease, and 3-vessel CABG operation was performed. Following operation, the case was monitored in cardiovascular surgery intensive care unit (ICU) for 2 days, and she was transferred to the ward. The case was diagnosed with ineffective individual health management, disruption of oral mucous membrane, risk of blood sugar fluctuation, risk of electrolyte imbalance, constipation, activity intolerance, sleeplessness, sensory perceptual alteration; Auditory/Visual, death anxiety, body image disturbance, ineffective dealing, and ineffective role performance. Interventions were aimed at these diagnoses. With a planned and professional nursing care, the individual's biological, physiological, psychological and social problems after CABG operation were minimized. Her problems were dealt with the most effective way, and she was discharged from the cardiovascular surgery ICU.

Keywords

Intensive care unit, Cardiovascular surgery, Nursing care.

Introduction

Heart disease is the leading cause of death in developed nations despite known ways to prevent and treat heart problems [1-3]. Coronary heart disease is the leading cause of morbidity and mortality in most industrialized societies [4-6]. Coronary-artery bypass grafting (CABG) was introduced in 1968 and rapidly became the standard of care for symptomatic patients with coronary artery Disease [7]. Cardiac surgery consists of attempts to cardiac valves, restoration of congenital lesions and pathologies, vascular grafts and cardio transplantation which has been important in recent years [8-10].

Cardiac surgeries could be in open and closed ways. The patients with chronic heart disease have a low strength and a complex

care, so the number of patients has dramatically increased [11,12]. This situation causes a problem for caregivers and it needs a multidisciplinary team work [13]. Here the nursing care point is to keep the nursing care and education to sort out the individual health problem with a systematic method throughout the nursing process providing for nursing care. A compassionate, knowledgeable, and skilled nurse caring for the patient after open heart surgery is an asset in the achievement of positive outcomes for the patient and his/her significant others [14-16].

Case Report

Socio-Demographic Features: MG, a 65 years old woman patient and a housewife, keeps her daily life activities as semi-dependent. Her husband passed away 10 years ago and she has got 4 children.

Health Story

Previous Health Story: She has some problems of dyspnea and

chest pain affecting cardiovascular system. The patient was made a diagnosis of Diabetes Mellitus (DM) and she had an operation of lumbar disc herniation.

Present Health Story: The patient with diagnoses of known DM, coronary artery disease, lumbar disc herniation has complaints of NYHA class 2 dyspnea symptoms [12] and chest pain for one month. MG applied to our hospital due to her increasing complaints and it was decided to make an operation of three vascular coronary artery bypass graft.

Echocardiogram (ECHO): Left ventricular (LV) diameters and wall moments are normal. LV is concentric hypertrophic. Value views are calcific.

Medicine she used: Acetylsalisilik acid 1*100 mg., Irbesartan-hidroklorotiyazid 1*150 mg., Atorvastatin 1*10 mg., Insulin aspart: morning 20 Unit (UI) -evening 16 UI.

Medical diagnoses: Diabetes Mellitus, CAD, Three Vascular Coronary Artery Bypass Graft.

After our patient with three vascular coronary artery bypass graft came from surgery to intensive care unity;

- Attaching to mechanic ventilation, instubation tube was evaluated.
- Being monitorized, hemodynamic parameters were provided to be seen on monitor.
- Inotropic agents were attached.
- Bladder catheter was checked and observation of input and output of liquid was made.
- Thorax tubes were checked and hemodynamic parameters were attentively observed to the situation of drainage tube.
- Vital signs were registered to nurse observation form.
- It was observed whether the patient was awake or not.
- Neurological evaluation was carried out because of deep anesthesia, hypoxia, and postoperative syndrome.
- In intensive care unity, the patient hemodynamic turned to be stable six hours later. Then, she had a spontaneous respiratory,
- After mechanic ventilation was stopped, the patient's respirotary was supplied with on oxygen mask.
- At the end of the first day after the operation, the patient was mobilized.
- At the first stage of intensive care, she was helped to sleep without stop, have a deep respiratory and coughing practices while in awake.
- After interrupting of the patient's liquid and inotropic supplies, and keeping of oral intake, she was decided to move to a clinic by doctor.

Until our patient is moved to the clinic, North American Nursing Diagnosis Association (NANDA) and Majory Gordon's Functional Health Patterns are evaluated within Nursing Care Model.

- NANDA's aim is to classify by developing Nursing Diagnoses Terminology that is comprehensible.
- Simplified and determined to be clear to use in professional

nurse's practices.

- Majory Gordon's Functional Health Patterns Nursing Care Model evaluates the individuals in bio-psycho-social dimension in detail and clarifies the needs in 11 functional areas [17].

Health Perception – Health Management

- MG states that her health is bad. When cardiovascular risk factors are evaluated, High density lipoprotein (HDL) level is low and DM diagnosis is seen.
- There are not enough initiatives to control the risk factors and the treatment is divergent with the plan of liquid and diet restriction.
- **Nursing Diagnosis:** Ineffective individual Health Management
- **Expected Result:** Being in harmony with the planned treatment.
- **Nursing Initiatives:** Evaluating the treatment's harmony level on diet and liquid restrictions, stating the importance of the planned initiatives and the importance of form in behavior change for an effective health management.

Nutrition –Metabolic Status

- MG feeds orally with diabetic diet and liquid consumption is limited. She has sensitivity and dryness in her mouth. Oral evaluation guide is fifteen. The oral treatment frequency on this patient is three times a day, in our unity.
- **Nursing Diagnosis:** Deformation in oral mucous membrane
- **Expected Result:** Keeping the unity of oral mucous membrane
- **Nursing Initiatives:** Checking the oral mucous, having the oral treatment once in eight hours, making the lips wet, preferring the foods soft and not damaging to the mouth and also being careful with temperature of the them.
- The patient has loss of appetite and she isn't good enough to consume her main meals and snacks.
- **Nursing Diagnosis:** Fluctuation risk on glucose in the blood
- **Expected Result:** Keeping the feed necessary in intensive care conditions, watching the findings of hypoglycemia and hyperglycemia.
- **Nursing Initiatives:** Evaluating the process of daily feeding, measuring the glucose level in blood, watching the signs of hypoglycemia, supporting the feed suitable for the patients diet, keeping the oral treatment.
- Hypocalcemia and hyperpotassemia table of the patient developed and thus the treatment began.
- **Nursing Diagnosis:** Deformation risk in balance of electrolyte.
- **Expected Result:** Keeping serum electrolyte levels at normal rates.
- **Nursing Initiatives:** Watching the serum electrolyte levels and the quantity of input and output of liquid.

Defecation

Normal intestine habit of the patient is once a day. It was not seen any defecation to the second day of postop.

- **Nursing Diagnosis:** Constipation
- **Expected Result:** Keeping normal intestine habit

- **Nursing Initiatives:** Giving the patient oral laxative to the decision of doctor during her staying span in hospital, giving warm water while she is hungry, avoiding use of valsalva manevvers.

Activity –Exercise

MG needs for help to arrange her daily life activities and keep them because of her ailment. She feels faint and exhausted in a day.

- **Nursing Diagnosis:** Activity intolerance
- **Expected Result:** Expressing that her activity tolerance is all right within the ability borders, supporting her care needs.
- **Nursing Initiatives:** Evaluation of the activity level, ephor pulse and response of blood pressure, mobilization, supporting daily life activities.

Sleep- Rest

- MG states that she wakes up without having a rest and she is in trouble to sleep. Sleeping span at night during her staying in hospital is limited to 2-3 hours. Catheter attached, the instant pain, place with light and so on affect the the patient’s sleep negatively.
- **Nursing Diagnosis:** Insomnia
- **Expected Result:** Sleeping and resting enough
- **Nursing Initiatives:** Creating a quiet and relaxing atmosphere, allowing for light balance, waking the instant pain disappear. Providing a proper treatment for the patient to sleep to the decision of doctor.

Cognitive –Perceptual Status

- The patient has a time, place and person orientation. She has sometimes discomfort and agitation. Although she has not any problem with tasting and smelling, she complains at times that she does not hear and see the close well.
- **Nursing Diagnosis:** Sensory perceptual alteration: Auditory/Visual
- **Expected Result:** Waking the sensory perceptual changes lower/disappear.
- **Nursing Initiatives:** Keep the proper distance while in touch with the patient. Make the words to be said to the patient in proper pitch of sound. Make the patient speak to be sure enough whether she can see or hear well.

Self-Perception- Ego

- The patient feels anxious, nervous, weak and miserable because of her status and that is why she often repeats the word “I will die”. She cannot focus what is happening around her due to death anxiety.
- **Nursing Diagnosis:** Death anxiety
- **Expected Result:** Make the anxiety lower, comfort the patient not to mention about death.
- **Nursing Initiatives:**

Evaluation of the instant anxiety and behaviors available.

Inform the patient which position she is in and make her say something her ideas.

Keep her stay in a place with quiet and calm patients. Allow the patient for keeping in touch with her relatives. Desquamation and lesion on skin of the patient and also excision after having surgery cause body image in a negative weedy.

- **Nursing Diagnosis:** Deformation on body image.
- **Expected Result:** Make the patient share her emotions and ideas about her body and make her struggle with this process.
- **Nursing Initiatives:** Make the patient share her emotions and ideas. Inform her about the reasons of lesion and excision. Tell her that the instant changes will be on the way after the treatment and not be permanent. Make the proper medical care equipment’s use for lesion and excision.

Role/Relationship

- The patient lives with son and grandchildren. She cannot keep her responsibilities at all to go on her life.
- **Nursing Diagnosis:** Ineffective role performance.
- **Expected Result:** Make her accept the changes occurred in her life.
- **Nursing Initiatives:** Foster MG to share her ideas to fulfill the individual roles. Make her direct to make some suitable arrangements with role changes she experienced. Inform the patient’s family especially the ones in change of looking after the patient about her status.

Sexuality –Reproduction

- Menarche age of the patient is eleven. She had three miscarriages her husband passed away ten years ago and she has not any sexual activity.

Coping- Stress Tolerance

- The patient’s stress has increased because of ailment and the surgery. She behaves as angry and inhospitably.
- She has also negative attitude to her family and health employees.
- **Nursing Diagnosis:** Ineffective coping.
- **Expected Result:** Make the patient show positive coping initiatives.
- **Nursing Initiatives:** Evaluation the instant coping methods. Help her have positive coping methods. Help her have a family support. Help her join in treatment and care.

Value and Faith

- The patient has pointed out that she prays for herself before having the ailment and surgery operation and this attitude has kept on after experiencing some incidents, moreover this ailment has not affected her value judgments and religion faith.

Discussion

In this study examines a case who underwent coronary artery bypass grafting (CABG) procedure as the primary treatment for coronary heart disease, within the context of Majory Gordon's Functional Health Patterns Nursing Care Model regarding the

solutions of the problems that she experienced or had high risk to develop, and nursing diagnoses and interventions that are approved by North America Nursing Diagnoses- NANDA.

Close monitoring of the patients after CAGB operation by nurses as health professionals aids in prevention of some of the problems at the postoperative area and relieves anxiety of the patients. According to this result, it can be concluded that professional support after major operations such as CABG is important in terms of prevention of complications and enhancement of the healing process.

In this study found that according to the FHP model, our case who underwent cardiac surgery experienced problems in the patterns of perception/management of health, nutrition-metabolism, excretion, activity-exercise, sleep-resting, cognitive-perceptual state, self-perception- self concept, roles and relationships (family), and dealing-stress tolerance.

According to NANDA nursing diagnoses, the case who underwent CAGB surgery had problems such as sensory-perceptual alteration: auditory/visual, sleeplessness, activity intolerance, constipation, risk of electrolyte imbalance, risk of blood glucose fluctuation, disruption of oral mucous membrane, ineffective individual health management, death anxiety, body image disturbance, ineffective role performance, and ineffective dealing.

Redeker and Brassard [18] reported that according to FHP model, the problems that cases undergoing cardiac surgery had in terms of patterns were, health perception/management in 73%, roles and relationships (family) in 58%, activity-exercise in 72%, sleep-resting in 67%, nutrition-metabolism in 65%, cognition and perception in 97%, and dealing (family) in 92% of the cases. Other similar studies have reported problems such as pain at chest or leg, ineffective individual dealing, activity intolerance-fatigue [19], constipation, change of sleep pattern, change in nutrition, and weight loss [20,21]. In this study results are in agreement with other studies.

In the this study, the problem of sleeplessness could not be solved despite nursing interventions aimed at the sleeplessness nursing diagnosis. Interventions aimed at the nursing diagnoses of death anxiety, body image disturbance, ineffective individual health management, ineffective dealing, ineffective role performance resulted in treatment compliance and improvements in contribution to treatment. Although the patient self-reported improvement, the existing problems could not be eliminated completely. The patient showed improvements in problems such as perceptual alteration: auditory/visual, activity intolerance, constipation, risk of electrolyte imbalance, risk of blood glucose fluctuation, and disruption of oral mucous membrane.

In postoperative stage, the patient was moved to cardio-vascular surgery unity after intensive care watching period. Ambulatory treatment has kept on after the patient was discharged from the hospital.

Conclusion

In this study, it was concluded that the FSO model developed by Gordon was sufficient for patients who had CABG surgery to provide nursing care in postoperative stage. It is necessary to increase the number of such case studies. In our country, a nurse should give care to all three patients. But this is not possible because of the lack of number of nurses. If the number of nurses is increased, it is possible to provide better quality care.

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