Total Knee Replacement of John Grant and Prevention of Post-Operative Wound Dehiscence

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**Introduction**

John Grant is a 63-year old widower, diagnosed with bilateral knee osteoarthritis. His diabetes, hyperlipidaemia, hypertension, and depression all put him in a very precarious situation if he undergoes total knee removal surgery. His surgery has to be conducted and every care has to be taken to evaluate the risks involved in the surgery. Moreover, the post-surgery care will involve measures to keep his diabetes, depression, tension, angina and wound environment under control to prevent wound dehiscence. John Grant is widower and worries about his daughter’s workload since he can no more share her burden.

**Discussion**

**Risk factors and psychopathology**

The risk factors of our patient include hypertension, diabetes, alcohol use, mobility limitation, advanced age. Diabetic patients are at double risk of infections after surgery (Harris, 2017). Since in general anesthesia a person remains unconscious, there is a risk of heart attack to John who already suffers from hyperlipidaemia and angina. Being diabetic John is at higher risk of complications such as infection, a blood clot (deep vein), stroke, fracture near implant (Watson, 2016). All the risks are intensified when diabetes is not well controlled. Drainage, skin necrosis and hemarthrosis are some other risks (Aslani, 2017). The risk of heart attack is increased 31 times in heart patients (Pendick, 2015).

**Initial postoperative assessment**

An initial postoperative assessment has several components. The residential nurse checks vital signs, including temperature, level of consciousness, cardiovascular status, indications of excessive bleeding, fluid volume deficit, infection and blood clots. Checking the person’s consciousness level is also important after the surgery.

Cardiovascular status and wound infection are the two most important components of John Grant’s initial assessment. Cardiovascular status assessment is important because the patient suffers from hyperlipidaemia and angina. The risk of having a heart attack is increased by 31 times immediately after the joint replacement surgery (Pendick, 2015). According to a study, within 6 weeks after surgery, one in every 500 people who had replaced his or her knee suffered a heart attack.

Because of diabetes, Grant is at risk of stroke after knee removal surgery (Watson, 2016). Another justification for cardiovascular status is the old age of Grant. Older people have an increased risk of dying or having a heart attack after surgery. Since the patient also suffers from hypertension, that also increase the risk. Therefore it is of utmost importance that the patient’s cardiovascular status is assessed in the initial post-operative assessment.

Wound infection is a very common complication in people suffering from diabetes. People with diabetes have higher risks of complications such as infection, a blood clot (deep vein), stroke, fracture near implant (Watson, 2016). All the risks are intensified when diabetes isn’t well controlled (Martin, 2015). Therefore John should control his diabetes after surgery. It is therefore recommended that along with the cardiovascular profile, the wound status of the patient should also be assessed in the initial post-operative assessment. Since the patient suffers from type 2 diabetes, and it can be controlled, therefore even before surgery, it must be ensured that the diabetes is controlled. And even post-surgery, it should be taken care of.

**Nursing Care Priorities**

There are several elements of post-operative care, including checking vital signs such as temperature and level of consciousness. These routine assessments provide information about the cardiovascular status and give early signs of several complications associated with surgery such as excessive bleeding, fluid deficit and infection. In order to address the above mentioned two most important needs of the patient, the nurse should prioritize them.

Therefore, to avoid heart complications, the nurse must prioritize checking the vital signs. Moreover, John suffers from depression, hypertension and diabetes as well, all of which may complicate his risk of heart problems further. As mentioned, he is also a person of old age, which further increases his risk of a heart attack. Therefore he needs special care. His depression and hypertension should be controlled through medication. His diabetes should also be taken care of. The nurse should keep a check on the patient's pulse as well. Moreover, his blood-pressure should be kept controlled. The patient also needs to be given a blood thinner because he is at a higher risk of a blood clot.

The second priority of the nurse should be taking care of the surgical wound. It would require daily attention (thecoreinstitute.com, 2018). The patient is at a higher risk of wound infection because of diabetes, hypertension and depression. Wound healing is critical for the success of the patient’s surgery (Zafarani, 2017). Making the surgery a success would require that the sugar level in blood is maintained.

The various precautionary measures to take care of the surgical incision would involve a clean gauze dressing, changing it on time, during the patient's stay in hospital. The incision has to be kept clean all the time. High sugar level results in the opening of the wound, which causes infection. The nurse may use specialized dressings i.e. alginate or silver-based dressings. They reduce the risk of skin damage. The nurse must also keep looking for signs of infection. Antibiotics are required to heal the infection and prevent spreading. Since protein is also an important contributor to the healing process, they must be included in the diet of the patient. The nurse must also ensure that the patient does not become stressed and depressed. Stress and anxiety elevate blood glucose levels and can cause low healing. Keeping in view the patient susceptibility of the patient to postoperative wound dehiscence, it is justified that minimizing its risks should be prioritized.

**Nursing Care Plan to Minimize the Risk of Post-Operative Wound Dehiscence.**

There are some major steps involved in the prevention and management of wound dehiscence (Harris, 2017). Step 1 is the assessment and reassessment of the patient. The risk factors for John have already been identified in part one of the assignment. The considerations during assessment generally include identifying the risks, physical and emotional status of patient and lifestyle, the potential for self-management and wound assessment. Then goals are set, which include prevention and management of the wound. These goals are set on the basis of the condition of the patient. A team is assembled and a care plan is devised. Finally, outcomes are evaluated.

The care-plan generally include identification and implementation of evidence-based plan to correct causes, optimization of the local wound environment though cleansing, debriding, managing bacterial balance, managing moisture, etc. Appropriate dressings therapies are employed (Harris, 2017).

Soon after the operation, the nurse should check for saturation or leaking of wound dressings, which allows bacteria to the wound in a rapid manner. The goal of the nurse should be to prevent Post-Operative Wound Dehiscence. A proper team should be assembled. They should be meeting the physical, emotional and social needs of the patient.

Use of opiates is recommended to manage pain to avoid patient becoming hyper-tense or anxious. Music therapy may also be employed to reduce John’s anxiety. Some comfort measures such as sitz bath, warmed solutions etc. may be introduced. John must be communicated with regarding pain management. Antibiotics will be prescribed to treat the infection. Since John suffers from depression already, his depression should be controlled with medication.

Malnutrition should be avoided because it causes wound dehiscence (Vuolo, 2006). Moreover, the local wound environment should be optimized. 48 hours after surgery, the non-touch aseptic technique should be used to cleanse the wound using sterile saline. Early cleaning can disrupt pathogenic organisms (Thomlinson, 1987). Debriding should be done in an appropriate way. The bacterial balance should be managed. Moisture balance should also be maintained. John's concerns should also be considered while doing dressings. It takes 2, 3 days for the wound to re-epithelialize (Harris, 2017). Insulin level should be checked at least 3 times a day. The proper maintenance of sugar level in blood is extremely essential for the healing of the wound. Since it is common to suffer from depression after knee surgery, and since our patient already suffers from depression, the nurse, her team and those accompanying must take care of the patient in this regard as well.

**My Reflections ( Using Gibb’s Reflective Cycle)**

 John is a patient who is 63 years old, suffering from bilateral knee osteoarthritis, depression, hypertension, hyperlipidaemia, diabetes, and gastro-oesophageal reflux disease. This physical and psychological condition places him in the most vulnerable condition, but he needs knee removal surgery as well. His situation is indeed very precarious. John is a widower and concerned about the workload of her only daughter emotionally attached me to the person. The success of his surgery became my foremost priority. Therefore I looked at all the dimensions of the case and the post-operation complications, and devised a care plan very diligently, that aimed at both his physical and the psychological well-being.

**Conclusion**

To make the surgery a success, it is important to evaluate the risks factors involved in John Grant’s surgery. Operation is to be carried out with due diligence because any patient already suffering from angina and diabetes is likely to suffer a heart attack. After his surgery, due care should be taken to keep his diabetes, depression and hypertension under control to prevent dehiscence. The risk evaluation and the post-operative nurse plan has been diligently devised to take care of these most crucial factors on a priority basis.

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