GESTION PERIOPERATOIRE DU PATIENT AINE

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Cet article a premièrement été soumis en tant qu'exigence de cours au sein du programme de soins périopératoires de la Calgary Health Region.

RESUME

Afin de fournir une sécurité et des soins optimaux, les infirmières et infirmiers périopératoires doivent demeurer conscients des caractéristiques particulières aux différentes populations qui se présentent en salle d'opération. Les patients aînés risquent davantage de comorbidité et d'autres conditions liées à l'âge telles une santé cardiovasculaire plus fragile, l'isolation sociale et une capacité sensorielle amoindrie. Une connaissance spécifique aux soins des personnes aînées est le sujet de cet article.

PERIOPERATIVE NURSING MANAGEMENT OF THE ELDERLY PATIENT

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This article was originally written as part of a course requirement for the Calgary Health Region's (CHR) Perioperative Nursing Program.

ABSTRACT

In order to provide optimum care and safety perioperative nurses must be aware of the unique characteristics of the populations encountered in the operating room. Older patients are more likely to experience comorbidities and age related health changes such as decreased cardiovascular reserves, social isolation, and sensory deficits. Specific knowledge of the elderly population is the focus of this paper.

Introduction

In order to provide optimum care and safety, perioperative nurses must be aware of the unique characteristics of the populations encountered in the operating room. The elderly are one such population that will be the focus of this paper. Since Canada's population is continuing to age[1], the perioperative nurse is increasingly likely to be caring for older individuals. Therefore, the nurse requires the skills and knowledge necessary to properly assess older patients in order to take appropriate precautions and plan nursing interventions as well as to avoid complications during the pre-operative, intra-operative, and post-operative phases. For example, the existence of comorbidities (such as additional health issues experienced by a patient other than the primary reason for his/her current hospitalization) is the leading cause of death amongst elderly surgical patients, and necessitates a thorough assessment and complex plan of care.[2] Accordingly, it is suggested that planning for potential problems associated with comorbidity is as important as identifying actual problems.[2] In this paper the author will outline important assessment criteria for elderly patients, nursing interventions and precautions to be observed during the pre, intra, and post-operative phases.

Important Assessment Criteria for Elderly Patients

Functional and physical status:

The preoperative interview is an excellent opportunity to assess the elderly patient's baseline functional status. During this time the nurse can determine if the patient suffers from any preexisting functional limitations or impairments by asking focused questions, such as those related to the ability to complete activities of daily living (ADLs). However, Jackson[3] reports that this population may be reluctant to answer questions truthfully for fear of losing independence and autonomy, and may attribute their symptoms to the aging process. To counteract this behaviour, Jackson[3] suggests that the nurse discourage family members from answering for the patient and encourage the patient to answer for him or her self and to raise any concerns with the health care team.

Due to the preexisting physical limitations that are common among this population group, there is a higher likelihood that the patient may temporarily experience a period of helplessness during hospitalization.[2] Furthermore, older patients frequently have limited social support.[4] The nurse can facilitate the patient's return to the preoperative state by determining a functional baseline and stressing the temporary nature of postoperative recovery, through proper pain control, and by encouraging early resumption of physical activity as tolerated and ordered.[2] Stress can tax an elderly patient's normal physiological reserves, creating an increased vulnerability to complications associated with the perioperative experience. This leads to an increase in the potential for negative outcomes as compared to younger patients.[5] Polypharmacy is also common among the elderly due to the presence of multiple chronic conditions and should be given consideration during the preoperative interview.[4]

Psychosocial status:

As mentioned previously, a high percentage of elderly patients lack adequate social support. As a result as many as 65% of elderly patients undergoing surgery experience post-operative depression and alterations in self-image.[2] It is noted that this tendency is often accompanied by rapid physical decline and therefore it is important to ensure that depressed patients receive additional emotional support, throughout the surgical experience, from family members and the perioperative team.[2] In addition to assessing the patient's psychological well-being, the nurse must assess the patient's perception of aging in order to plan appropriate nursing interventions.[2] During the assessment, the nurse's own subjective views and feelings towards aging should not interfere or introduce bias.[2] Other factors to take into consideration during the psychosocial assessment include the patient's own subjective feelings towards wellness and illness, culture of origin, and the influence of the place of residence.[2]

Preoperative Precautions and Nursing Interventions

It is clear from the information presented above that elderly patients' unique needs require thoughtful, individualized nursing interventions in order to ensure optimum care and safety are

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Perioperative Nursing Management (cont.)

provided during the perioperative process. The pre-operative period is a critical time for the nurse to plan and implement nursing interventions for the elderly patient. Factors such as a potential for a high level of historical health factors, polypharmacy related to comorbidities, and an increased need for social, physical and emotional support can all play a role in recovery. It is noted that the elderly have a decreased ability to recover from physical and emotional stress thus increasing the importance of the circulating nurse's role in helping the patient through the stressful surgical experience.[1] The following section will expand on factors and interventions specific to elderly patients.

The hospital, in general, and the operating room environment, in particular, can create a confusing experience for even the most cognizant minds. When additional factors, common to the elderly, are also involved (such as chronic pain, social isolation, and poor overall health status) the entire surgical encounter can be frightening. The nurse is in an ideal position to alleviate the resulting anxiety.

Before beginning the interview, the nurse should become familiar with the patient's condition by reviewing the chart, including the medical history and physical examination report provided by the physician, and reviewing laboratory reports to discern the medical diagnoses.[2] To ease a timid or frightened patient, the nurse should approach the patient in their direct line of sight (to allow for the possibility of limited peripheral vision)[1], greet and introduce him or herself to the patient in a calm and friendly manner, and provide the patient with some orientation to the environment. In order to demonstrate respect, the nurse should ask the patient how he or she would like to be addressed. Since hearing and vision loss can contribute to confusion, anxiety, and misunderstanding[6] patients should be allowed to wear glasses and/or hearing aids into the OR in order to increase comfort and facilitate conversation.[1] Since, with age, there is a decrease in the number and complexity of stimuli that can be simultaneously processed the nurse should speak clearly, present one idea at a time, and allow the patient adequate time to respond.[1] A sensory assessment, including visual, auditory, and tactile senses, may be performed in order to accurately determine pre-existing sensory deficits. Any significant findings should be documented and incorporated into the plan of care.[2]

Similarly, cognitive status should be assessed in order to determine the patient's ability to perform a behaviour that is essential to the procedure. The nurse should be aware of any inconsistencies in the health history information as reported by the patient. Conducting a psychosocial assessment during the preoperative interview may identify those at risk of inadequate social support. The nurse can then assist the patient to identify strengths to help him/her achieve optimal independence, maintain dignity, and promote autonomy despite any physical, social, and psychological losses.[7] Performing a nutritional assessment is also important as poor eating habits may lead to risk factors such as dehydration, delayed wound healing, increased risk of infection, and osteoporosis.[1] Again, all significant findings should be reported to the surgeon and anaesthetist.

The use of medication, that may alter laboratory and physical findings, should also be assessed including vitamins, topical ointments, over the counter medications, and recreational drugs.[2] Fluid status too may be affected by certain medications. Chronic dehydration may be present due to diuretics being used to treat medical conditions such as hypertension.[8] Orthostatic hypotension during ambulation and hypotension during anaesthesia induction are risks to consider in the event of mild dehydration. If dehydration is suspected, the patient should be closely monitored during position changes, and anaesthesia induction and emergence. Similarly, alterations in renal function may result in prolonged medication effects and dysrhythmias. Urine output and laboratory values should be closely monitored.[8] As careful regulation of blood pressure, arrhythmias, angina, and cardiac failure will reduce perioperative mortality and morbidity in older patients, cardiac medications should be continued until the morning of surgery unless contraindicated.[4]

As the patient's posture, mobility, gait, dexterity, body height and weight may impact the method of transfer they should be assessed prior to bringing the patient into the theatre.[2] More time may be required to transfer an elderly patient from the stretcher to the OR bed. To promote the patient's feelings of independence, the patient should, if able, be allowed to walk into the theatre or move independently from stretcher to the OR table.[2] When the patient arrives in the theatre, the staff should introduce themselves and encourage the patient to do the same and to state what surgery they are having done. Any significant information gained during the preoperative assessment should be shared with the health care team such as allergies, asthma, previous anaesthesia problems experienced by the patient or family members, abnormal laboratory data, and physical limitations that may affect airway management or positioning.[8] While the patient is still conscious in the theatre, loud noises, such as from instrument setup, should be avoided as this may lead to disorientation and agitation.[9]

Ensuring proper positioning and preparing of the patient's body for surgery also requires special attention. The elderly have fragile skin, with a thin dermis layer, low elasticity, less collagen, muscle and adipose tissue, thus creating a high potential for bruising, skin tears, infection, pressure ulcers, impaired thermoregulation, and delayed wound healing.[6] Shearing forces and use of heavy adhesive tape should be avoided. Extra padding may be necessary over bony prominences and support devices and joints should be placed in a neutral position, with proper alignment consistent with age-related musculoskeletal changes, to minimize stress and pressure.[6] The popliteal space and heels are especially vulnerable areas where extra pillows and padding are necessary.[10] Thermoregulation may be compromised during surgery so warm blankets or forced warm air blankets can be used to provide comfort and protect against heat loss during extended surgical procedures.[1] Sequential compression devices (SCDs) placed on the lower extremities are also important to reduce the incidence of deep vein thrombosis (DVT).[1] Being of age 40 or older is a risk factor for the development of DVT. Other factors raising the risk of DVT include the administration of general anaesthesia, surgery lasting longer than 2 hours, obesity, varicose veins, cancer, prolonged immobility or bed rest, and smoking. Many elderly patients would have one or more of these other predisposing factors.[6] Extra caution should be used when determining placement of the electrosurgical unit (ESU) disbursement pad since reduced muscle mass may, in some areas, provide inadequate vascularity for the prevention of electrical burns.[1]

Intraoperative Complications and Nursing Interventions

Once the elderly patient is properly prepared and positioned for the surgical procedure there are many other potential risks that require astute monitoring and possible intervention by the nurse. During the operative period the patient relies heavily on the nurse to act as an advocate while they are anaesthetized and cannot speak. For example, information gained during the preoperative assessment, such as hydration status, should be used to carefully monitor levels and ensure any abnormal findings are reported to the surgical team.

There are, of course, many other factors to be monitored during the operative period. For instance the patient's response to anaesthesia should be closely observed as an elderly patient will be more sensitive to alterations in blood pressure, oxygenation, blood volume, and body temperature.[1] Anaesthetic agents can cause significant physiologic responses including fluctuations in blood pressure and pulse rate, and stress on the cardiopulmonary system. Therefore slow titration of anaesthetics, and adjunctive drugs such as analgesics and neuromuscular blockers, is recommended for the elderly whose reduced baroreceptor reflexes and increased vascular wall rigidity can interfere with compensatory mechanisms and result in sharp drops in blood pressure. Additionally, the transition from spontaneous to controlled ventilation can lead to a significant drop in cardiac output.[11]

Prolonged surgical procedures can lead to hypothermia. Geriatric patients are at risk

when their core body temperature falls below 36°C.[2] Shivering can cause tissue oxygen requirements to increase between 200% and 500%, thereby increasing the risk of myocardial infarction. Nursing interventions to prevent patient harm include covering the patient with forced-air blankets, or blankets from a warmer, infusing warm fluids and blood, and the use of an intravenous fluid warming device and heated, humidified inspired gases.[11] Wet linens should be removed before transporting the patient to the recovery unit.[10] Respiratory complications account for 40% of all surgical complications and 20% of all surgery-related deaths. The elderly are particularly vulnerable to respiratory complications, such as pneumonia, COPD, and emphysema, because of the age-associated decline in pulmonary function.[6]

Since general anaesthesia presents several risk factors as mentioned above, other techniques may be considered. For example, regional methods, such as spinal or epidural anaesthesia or peripheral nerve blocks, may be useful alternatives for patients with cardiopulmonary disease.[11] Regional, spinal, epidural, and nerve block procedures are associated with less myocardial depression and postoperative disorientation.[11] The anaesthesia provider may, however, have difficulty performing these techniques due to spinal deformities from arthritis or degenerative disk disease. Hypotension is a potential complication of spinal and epidural anaesthesia and can, until the effects of the block wear off, expose the patient to a greater risk of postoperative myocardial infarction, worsening heart failure, and urinary retention.[11] Conscious sedation is yet another anaesthesia option that poses fewer cardiovascular risks, and has several potential advantages over regional techniques. Medications used for sedation generally have a shorter duration and half-life, offer the option of using reversal agents (such as flumazenil and naloxone) in the event of adverse reactions, and do not affect postoperative motor function.[11] Sedating agents should be carefully chosen to avoid potential interactions with medications the patient may already be taking to manage chronic conditions.

A further nursing intervention that can help provide safe care to the elderly is the monitoring of fluid balance during the operative procedure. As renal function decreases with age both intake and output of fluids should be closely monitored and recorded.[6] A distinction should be made between blood versus irrigation fluid amounts collected in the suction bottle. The urine drainage bag should be easily visualized by both the nurse and the anaesthesia provider. The nurse may also be required to assist the anaesthesia provider by providing new IV solution bags and assisting with initiating fluid therapy measures such as IV, central line, or arterial line insertion.

Postoperative Implications and Nursing Interventions

At the conclusion of surgery, care must still be taken to protect the vulnerable elderly patient. Hopefully the vigilance used during the preoperative interview and the use, by the nurse, of appropriate precautions and interventions during the operation, have resulted in a safe patient outcome.

During emergence from anaesthesia, the nurse should remain at the patient's side and monitor for complications, such as vomiting and laryngospasm, and be ready to assist with anaesthesia emergence. Respiratory distress in the elderly is primarily the result of small airway closure due to excessive sedation, analgesic use, and pain. While the patient is waking up, the nurse can explain to the patient that the surgery is complete, that they are waking up from anaesthesia, and that they will soon be transferred to the recovery room.

Just as caution was required to bring the patient into the theatre, the transfer out of the OR also requires additional precautions. For example, care should be taken not to damage the fragile skin of the elderly when removing ESU pads, ECG leads and tape.[1] The skin should be examined for any signs of injury, with special attention paid to bony prominences and the area under the ESU pad.[10] Any alterations should be documented and reported to the surgeon. Wound dressings should be carefully

chosen to maximize wound protection, while being minimally irritating to the skin, (i.e. an ABD pad with paper tape rather than a elasticized pressure dressing) in order to reduce the risk of infection.[10]

When in the recovery room, the patient should be introduced to the nurse who will be providing care and told what to expect in the recovery unit.[10] A thorough report on significant findings from the pre-operative interview and surgical events should be given to the recovery room nurse.

Once again there are many assessments that should be completed to ensure the patient's safety and comfort at the conclusion of surgery. For example, several risk factors for postoperative pulmonary complications exist. They include chronic pulmonary diseases, smoking, obesity, anaesthesia lasting longer than 3 hours, high abdominal or thoracic incisions, and multiple surgeries within one year. Pneumonia, the most lethal postoperative infection with a mortality rate of 27% among elderly patients, can also result.[12] Nursing interventions to prevent pneumonia include maintaining sterility with respiratory equipment, hand hygiene, and encouraging the patient to perform breathing exercises with the use of an incentive spirometer. For patients who smoke the nurse should stress the benefits of quitting before and after surgery.[11] Older patients are increasingly susceptible to respiratory complications due to an age related decline in pulmonary function including reduced chest wall elasticity resulting in decreased vital capacity and tidal volume, and increased residual volume. Effects can include hypoxemia, increased risk of respiratory failure under anaesthesia, aspiration, and pulmonary infection.[11]

Urinary tract infections (UTIs) are the most common post-operative infection. In order to reduce risk, care should be taken to avoid unnecessary catheterization, to remove necessary catheters as soon as possible, and to maintain strict aseptic technique with a closed one way drainage system.[12] Wound infection is the second most common nosocomial infection and can be avoided by using aseptic technique.

CONCLUSION

It is clear from the information presented above that the elderly surgical patient requires special attention from the perioperative nurse. Jarvis[13] reminds us that "older adults should be seen not as a homogeneous group with predictable reactions but as individuals with specific needs and widely divergent responses" (p. 32). Further, "illness affects aging people more than those in other age groups. After an acute illness an aging person does not recover as quickly or as completely as younger person" (p. 33).[13]

In order to provide optimum care during each phase of the operative process there are several interventions the perioperative nurse can take into consideration. For example, older patients are more likely to suffer comorbidities creating an increased risk of complications. A thorough preoperative interview is an excellent opportunity for the nurse to plan individualized care and interventions based on the information provided by the patient and his/her history. This information is then communicated to the other members of the health care team. Care is taken to maintain the older patient's dignity and promote their autonomy through interventions such as allowing the patient to ambulate into the theatre and provide an introduction to the team. While positioning the patient, extra padding is placed at pressure points to reduce the risk of pressure sores, and ESU pad placement is selected to minimize skin trauma and burn risk.

In the postoperative period, the nurse remains at the patient's side during anaesthesia emergence to provide assistance with associated complications. Reorientation, including introduction to the recovery room nurse, is provided to the awakening patient. By following the recommendations provided in this paper, the perioperative nurse can ensure that elderly patients under their care receive appropriate interventions to minimize the potential risks posed by surgery.

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