The ABC's of Recovery Room Nursing

By Bev Johnson

The goal of providing safe, knowledgeable, compassionate and individualized nursing care to patients and their families, in the immediate post-anaesthetic period, is universal. The method of meeting that goal remains unique to the individual professional nurse and to her unit.

AORN (1983) identified the following outcomes as specific to patients requiring post anaesthesia care:

1. Respiratory status is maintained or improved.
2. Cardiovascular status is maintained or improved.
3. Fluid and electrolyte balance is maintained or improved.
4. Privacy and dignity are maintained.
5. The patient is protected from infection.
6. The patient has no adverse effects from lack of, or improper use of, safety measures.
7. The patient is as comfortable as possible.

There is a growing awareness in the health care community of the role of the post anaesthesia nurse. Major and complicated surgical procedures are becoming more prevalent with each passing year and therefore, the patient is more prone to crisis in the post-operative period than at any other time throughout the surgical experience. Because of this, the recovery room nurse must have the skills to recognize and treat post-operative complications.

Recovery room nursing is a continuous process of assessment of needs, planning, implementation and evaluation of nursing interventions.

The Recovery Room Nurse

The R.R. nurse must be a "jack of all trades". She or he must have a sound background in physiology, pathophysiology and surgical procedures. An understanding of medicine, pediatrics and geriatrics is also essential. In addition, R.R. nurses must be thoroughly versed in the pharmacodynamics of anesthesia and analgesia, (Drain and Shipley, 1979).

The R.R. nurse must be:

1. Independent
- the majority of problems arise in the absence of the anesthetist.
- gets only brief moments of direct supervision.

2. Logical and possess good judgement
- possesses diagnostic abilities.
- is able to anticipate problems and complications.
- knows when to get help.

3. Phlegmatic
- uncomplicated recovery is the norm.
- the occasional life threatening emergency must be attended to in a calm, rapid fashion.

4. Conscientious
- it is an extremely responsible job.

Author

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Roles of Recovery Room Nursing Staff

The recovery room must be staffed with specially trained staff in sufficient numbers to be able to provide consistently safe care.

More specifically the recovery room nursing staff is responsible for the following.

- providing a safe, comfortable and therapeutic environment for post-operative/post anaesthetic patients.
- providing readily available, specialized equipment in good running order and in sufficient supply.
- using the nursing process to provide individualized nursing care based on each patient's individual needs.
- providing constant observation of recovering patients to facilitate early detection of post-anaesthetic/post surgical complications.
- maintaining the level of theoretical knowledge and clinical practice required for efficient and safe recovery nursing.
- collaborating with other members of the health care team and other hospital departments to provide optimal physiological and psychological care.
- providing decisive specialized care to recovery patients who are in immediate life threatening situations, (i.e. respiratory failure, haemmorhage, cardiac arrest, shock).
- implement prescribed orders and procedures according to policy.
- remain abreast of changes in techniques and equipment and contribute to change through participation in research whenever possible.
- providing clear, concise and accurate documentation on each patient during their stay in recovery.
- being committed to and participating in quality assurance programs to ensure that optimal quality of patient care is achieved and maintained.

Admission to Recovery Room

It is imperative that a nurse fully assess the total physical condition of each patient on admission and at frequent intervals throughout the recovery room period. Physical assessment must begin immediately upon admission to recovery room. The Report is given by the anaesthetist and the O.R. nurse. Since all anaesthetics are depressants, post-operative assessment and care will generally be the same, regardless of the specific agent used.

The emphasis in recovery room nursing is on anticipation and prevention of post-operative and post-anaesthetic complication.

On admission to the recovery room the nurse should do a quick assessment:

A - Airway - open, patency, start O_2

B - Breathing - assess respirations, color

C - Circulation - B/P - pulse, ECG monitor, dressings and drains.

We start this assessment while we are receiving the report from the OR nurse and the anaesthetist.

Once the initial observations are made it is essential to assess systematically the patient's total condition. The assessment may be made from head to toe, or by systems, whichever the individual nurse prefers, the observations are identical.

One approach to post-operative patient assessment is the A-B-C's systems approach.

A - Airway: Must be assessed first

- Note the presence of an artificial airway.

Airways are used primarily to maintain patient air passage so respiratory exchange is not hampered. Even with an artificial airway, respiration may be hampered.

- Patient may require chin held or jaw thrust.
- The airway must be kept clear of secretions to serve its purpose and may need to be suctioned.
- The airway should not be removed until the patient's laryngeal and pharyngeal reflexes, which enable him to control his tongue, to cough and to swallow return.
- Do not pull on airway. Watch for caps or loose teeth.
- Remove airway if patient is coughing or yawning.
- Endotracheal tubes can be removed as soon as the patient is able to maintain his airway without it or when the danger of aspiration is over. Many of our anaesthetists tell us to wait until the patient can extubate themselves.
- If intubated, check the cuff and have a syringe at the bedside.

Oxygen. Follow anaesthetist order if you don't have routine orders. Most of our patients have an oxygen catheter down their airway. When awake it is continued per nares. When ordered to be continued on the nursing unit, we change to what is ordered, e.g. nasal prong, cold neb, etc.

Use pulse oximetry if available. In our hospital, if the patients O_2 saturation is less than 90% on room air in recovery room, O_2 per nasal prongs at 2-3 L is

started for 24 hours and then reviewed. This is a standing order for recovery room. We write the order on the order sheet for the nursing units to follow.

Position. When possible, patients in R.R. should be maintained in a semi-prone, side lying position. This position promotes maintenance of a patent airway, prevents aspiration of vomitus into the trachea, and permits optimal ventilation of the lower lobes.

B. Breathing

The post-operative patient has experienced some interference with his respiratory system, therefore attention must be directed towards maintaining an adequate gas exchange.

- Respiratory function is assessed by observing the rate and character of the respirations and the patients color. Check the mucus membranes.

- The resting rate of respirations in the normal adult is approximately 16-20 cycles per minute, regular in rate and rhythm.

- Respirations should be quiet, free and easy. The most important respiratory problems encountered in the immediate post operative period are hypoventilation, airway obstruction and atelectasis from obstruction of the bronchus.

- Chest should be move freely as a unit and expansion should be equal bilaterally. Alteration in symmetry may be due to many factors; including pain that may cause splinting at the incisional site; consolidation or pneumothorax.

- Note the character of respiration. An example is nasal flaring.

- Depth of respiration is as important as the rate. Shallow respirations are the cardial sign of continuing depression from anesthesia or preoperative medication but may be due to other factors, such as pain, or obesity.

- Assess patients with shallow breathing and check frequently for signs of complications.

- Chest movements in themselves are not adequate evidence that air exchange is occuring. You should place a hand over the patient's airway and feel the amount of exhaled air.

- Check the patient's color. This is sometimes a difficult evaluation. Cyanosis when present, is a late sign indicative of severe tissue hypoxia. Restlessness, confusion, anxiety or apprehension are early signs of hypoxemia and carbon dioxide retention and also should receive immediate attention to differentiate the cause. This is where a pulse oximeter is very useful.

- Listen to the patient's respirations. Normal respirations should be quiet. Noisy breathing indicates problems. Extraneous sounds always indicate some kind of obstruction, however quiet breathing does not indicate freedom from problems. Some sounds you might here:

1) Gurgling sounds usually indicate the accumulation of mucus or other secretions in the respiratory passage.

2) Crowing may indicate laryngospasm, a sudden violent contraction of the vocal cords, that may result in complete or partial closure of the trachae. Note that total blockage of the airway due to laryngospasm has no sound because of the absence of moving air. With complete obstruction, there is sternal retraction.

If the patient goes into laryngospasm:

- establish airway
- suction carefully to remove secretions making sure you don't go near the vocal cords
- give patient O_2
- may have to bag patient with O_2 100% via ambubag, giving a sustained push of O_2 and hold a few times to open vocal cords and break the spasm.
- If unable to break the spasm the patient will require a muscle relaxant and be reintubated.

3) Wheezing may indicate bronchospasm caused by reflex from some irritating mechanism such as secretions (blood, mucus, vomit) or it may be from an allergic reaction from blood, drugs such as antibiotics.

- It may also be from pulmonary congestion due to fluid overload.

- Bronchospasm occurs most often in patients with pre-existing pulmonary disease.

- The patient may need ventolin, either through aerosol or nebulizer.

- Encourage patient to cough and mobilize secretions.

4) Laryngeal Edema following endotracheal intubation is not uncommon and contribute significantly to airway obstruction.

- These patient may have:
  A croup like cough
  Inspiratory stridor
  Apprehesion
  Use excessory muscles for ventilation

Patients may be treated with: a cold humidifier, steriod therapy, or may need reintubation.

C - Circulation

Most assessment is aimed at evaluating cardiac output. Blood pressure and pulse should be taken frequently. Cardiac monitoring if available.

Blood pressure readings in the post-operative period should be compared to baseline pressures taken before surgery to compare their significance. A low post-operative blood pressure may be due to a number of factors including muscle relaxants, pre-op medication, blood loss and changes in the patient's condition. The administration of oxygen to help eliminate anaesthetic gases will cause an increase in blood pressure. Deep breathing may help to raise the blood pressure.

An increase in blood pressure post-operatively is not uncommon, due to the effects of the anaesthesia, decreased respiratory rate, or pain.

The pulse should be checked for rate and character. A tachycardia may be present due to fever, pain or anxiety. Evaluate cause of tachycardia before treatment, remembering increasing tachycardia is an early sign of shock. A bradycardia may be due to prostigmine.

Patient temperature.

Peripheral vasodilation and skeletal muscle relaxation contribute to heat loss. If patients are hypothermic, they have slower circulation which could cause them to be drowsier and have shallow respirations. These patients will shiver. Shivering may increase O_2 consumption by up to 400%. In such cases, give patients warm blankets. We are using a Bair Hugger which is a patient warming system.

D - Depth of Consciousness

Patients arrive in the recovery room at all levels of consciousness from fully awake to completely anesthetized. Emergence from anesthesia is generally quiet and uneventful, occasionally a patient will become agitated and thrash about, this seems to occur in teenagers and young adults more often that any other age group.

The patient should be told where he/she is and that his/her surgery is over as part of the stir up routine. It is important to remember that although the patient's consciousness may be impaired, their hearing usually is not.

E - Examination of Surgical Site

Check operative site, dressing, drains, sumps or if a cast, check fingers or toes for circulation.

Also this is where we includeand examination of IV's, Foley Catheter, CVP's, arterial lines etc. Care must be taken to ensure that all drainage tubes and intraveneous catheters remain in place, remain patent and that no tension on any of these lines is created.

F - Freedom From Risk of Injury and From Pain

Safety measure include side rails up, warm blankets, optimum position of semi-prone side lying.

Before giving any medications check for allergies.

Pain Assessment

Pain is a very individualized experience, therefore the control of pain must be individualized and treatment must take into account not only the physical status but also the wide variety of sociologic and psychologic influences incorporated into the patient's perception of pain.

The patient's responses to pain will vary in accordance with the extent to which his level of consciousness is altered. As the patient emerges through the second stage of anesthesia there may be a period of excitement and overaction to all stimuli including pain. As he emerges through the first stage of anaesthesia there may be enough pain relieving effect from the anesthetic that he awakens then falls asleep again.

In our recovery room the administration of post operative analgesia is usually intravenously and occassionally intramuscular. Before analgesia is given, assess the patient and perhaps try other pain relieving measures. Examples include:

- Positioning to avoid stress on the incision
- Reassurance to an anxious patient. Fear and anxiety may significantly contribute to post-operative pain by causing rigid muscle contractions in an attempt to splint the operative site.

Before we give an analgesia, we check what was given in the O.R., i.e., Narcon, and what was given as a premed (if one given). Check for allergies.

We follow the anaesthetist's orders which are written on the recovery room record. Use your nursing judgement and common sense in deciding your narcotic dose. Inadequate analgesia can be as harmful as too much. It can make breathing more painful producing inadequate ventilation or it may produce restlessness and hyperventilation.

The drug and dose vary with each anesthetist. All drugs given in the recovery room are underlined in red. Any IV drugs are checked by two R.N.'s and double signed according to hospital policy.

If the patient has an epidural line, these are topped up by the anesthetist. If there is to be a continual infusion into the epidural line, such as fentayl, the nurse in recovery room initiates this according to the anaesthetist orders. Adjust the rate according to the

patient's condition.

The assessment of pain in children and infants is more complex than that of adults. When assessing a crying, restless child, you must ask yourself if the the child is experiencing:

A) Hypoxia
B) Emergence Delirium (occurs aprox 2% G.A.)
C) Hunger
D) Physical Pain
E) Separation Anxiety

G) Gather Data and Chart

Document as per hospital policy and procedure. Charting is the only source of patient information. It must be accurate, clear and not ambiguous. It must also be free from distortion of time and recall.

Charting should include:
- initial assessment
- ongoing assessments
- treatments
- actions, occurrences or complications which are significant.
- evaluation of treatments
- report attempt or successful communication with doctor. (Including whether or not orders were received)

Remember, in a court of law, the chart is what they use. The chart must indicate what was done or the court will conclude that the nursing action was not performed.

The checklist charting is recognized; however, some nursing observations and nursing actions cannot be recorded by the checklist. Therefore, make sure to document accurately and at the time, or nearest to the time of occurrence. Essentially, if it isn't written, it wasn't done.

Patients stay in recovery room different lengths of time according to the hospital's policy. In our recovery room the minimum length of stay is 30 minutes.

If the patient is given an analgesic, they stay 20 minutes, and some stay longer as the case warrants.

We use a scoring system which is on the back of our record. A patient should meet a score of eight before discharge, or a written order for discharge from recovery room is obtained from the anaesthetist or attending physician.

Before discharge: check dressings, pads, drains. Change or reinforce dressings. Empty any drainage receptacles (Chart these). Label the IV's. Chart the patient's condition and time of discharge.

Contact the nursing unit before leaving R.R., and ensure the unit is informed that special equipment is needed, e.g., oxygen, suction, a lifting board.

A registered nurse always accompanies the patient back to their unit. We have a porter on days who goes with us. Sometimes on evenings or nights due to understaffing, we have to call the nursing unit and request they pick-up their patients.

Once in the patient's room, transfer the patient from the stretcher to his/her own bed. (Some patient's come to O.R. in their own bed, eg. hips, discectomies, or anyone who weighs over 200 pounds). Ensure that the patient's call bell is properly positioned, siderails are up and the bed is lowered.

The nurse from recovery should give a complete report to the receiving nurse including pertinent facts about the following:

1. The operative procedure performed.
2. The anesthesia used.
3. Length of anaesthesia time.
4. Patient's general condition including vital signs.
5. The incision, drains, catheter etc
6. The intravenous.
7. Any medications given in the R.R.
8. Doctor's orders.

For spinal or epidural anaesthesia, the following nursing care is provided in the recovery room.

1. Good body alignment
   - Don't hyperextend joints
2. Careful turning
   - Rapid turning can cause a decrease in BP. The circulation system cannot compensate.
3. Check for bladder distention
   - May cause bradycardia
4. Return of sensation and motor control
- Anaesthetic works its way back from extremities
- Keep in R.R. if the block is high.
5. Watch for Hypotension
- Due to vasodilation and loss of sympathetic tone
- May need expansion of circulation volume and/or a vasoconstrictor such as Ephedrine.
6. - May cause nausea and vomiting with continuous epidural line
- Anchor line securely to avoid accidental removal.

References

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Sources

Standards of Care for Post-Anaesthetic Nursing:
1. ASPAN - American Society of Post Anesthesia Nurses, 11508 Allecingie Parkway, Suite C., Richmond, VA USA 23235
2. OPANA Ontario Post-Anaesthetic Nursing Association, 486 Evans Avenue, Box 173, Toronto, Ontario, M8N 2I7

Hyaluronic acid could be the "wonder oil" of the future

Several world-wide companies hope to be first to put hyaluronic acid to greater use in medicine. They are working on applications in which the body's natural lubricant would be used to ease pain and facilitate the movement of arthritic knees, to prevent complications from surgery, to moisten dry eyes and even to smooth out facial wrinkles.

Hyaluronic acid is a slippery substance that lubricates the joints, protects delicate tissues in the eyes and helps the skin stretch and bend.

"The ideas there have been around for a long time," said Bryan Toole, chairman of anatomy and cellular biology at Tufts University Medical School and an expert on hyaluronic acid. "Some people really think it's going places. Others are not so sure."

Hyaluronic acid, according to a New York Times News Service report, is also called hyaluranon or simply HA, which is actually a complex sugar that is present in all animals, usually in the spaces between adjacent cells.

But what makes hyaluronic acid special is its mechanical properties. "It is the most visoelastic substance known to mankind," said Dr. Endre Balazs, of Columbia University Medical School and a pioneer in the purification of hyaluronic acid.

Hyaluronic acid is biocompatible and has already found widespread use in skin moisturizers and other cosmetics, like Estee Lauder's Night Repair.

Since 1980, it has been used to help the eye retain its shape and to protect sensitive tissues during ophthalmic surgery, particularly in removing cataracts and implanting intraocular lenses.

Kabi Pharmacia, the Swedish company that is the leader in this market, had United States sales $72.5 million for its product, known as Healon, in 1991. For all vendors combined, worldwide sales are estimated to be about $200 million.

Hyaluronic acid is difficult to manufacture and is expensive. The material used in eye surgery sells for millions of dollars a pound, said James Bracke, founder and chief executive of Lifecore Biomedical. Fortunately, he said, only about $100 to $200 worth is needed for an eye operation.

Kabi obtains its hyaluronic acid from the combs of roosters, which, for reasons not yet fully understood, have a high concentration of the stuff. But several companies now make hyaluronic acid through fermentation of certain types of bacteria.

Another factor that could result in broader use is that companies have also succeeded in modifying natural hyaluronic acid to improve its properties. They can make forms that last longer in the body and thus would by more effective as medical treatments, and have produced solids, gels, membranes and other forms for specific functions.