

Best Practices for Perioperative Nursing Care for Weight Loss Surgery Patients

Ann Mulligan,* Lorraine S. Young,† Sheldon Randall,‡ Carol Raiano,* Priscilla Velardo,* Catherine Breen,§ and Laura Bushee¶

Abstract

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Objective: To describe the unique nursing responsibilities involved in providing nursing care to severely obese weight loss surgery patients and to develop evidence-based guidelines for safe patient care.

Research Methods and Procedures: We performed a systematic review of the scientific literature using MEDLINE and CINAHL. A specific search of nursing journals from 1985 to 2004 identified 134 articles; 16 were found to be pertinent. These were reviewed in detail and used in the context of this report. The quality of the evidence was graded according to a system derived from established evidence-based models. Recommendations were developed from published evidence and expert opinion.

Results: This Task Group found that safe and competent nursing care requires assessment of, and provision for, the complex physical and psychological needs of weight loss surgery patients. We developed evidence-based guidelines for preoperative, perioperative, and postoperative care that address risk factors unique to severely obese patients. We also addressed issues related to the use of proper body mechanics and positioning to avoid on-the-job injury to nursing staff.

Discussion: We found that patient safety is best served

when nurses are specifically trained to deal with the physical, medical, and psychosocial needs of severely obese patients and when they play an integral role in the multidisciplinary healthcare team. This role should start with a patient's first contact with the system and continue through discharge and follow-up. Special attention needs to be paid to the widespread bias and discrimination that severely obese individuals often experience.

Key words: nursing, circulating nurse, preoperative nurse, discharge nurse, clinical pathway

Introduction

Weight loss surgery (WLS)¹ is a growing subspecialty that presents significant challenges to the nursing community. The majority of U.S. adults are overweight or obese, with >30% of adults considered obese (BMI \geq 30 kg/m²). An increasing number of adults are considered extremely obese (BMI \geq 40 kg/m²) (1).

Diet therapy with and without support organizations is relatively ineffective in treating obesity in the long term. There are currently no truly effective pharmaceutical agents to treat obesity, especially severe obesity (2,3). The rapid increase in severe obesity and lack of effective therapeutic options has caused a surge in demand for WLS. In the Commonwealth of Massachusetts, more than 2700 gastric bypass operations were carried out in 2003 compared with fewer than 150 in 1996 (4).

Although increasing numbers of people with severe obesity are undergoing WLS, little systematic research has been done to provide guidance on best practice nursing for severely obese patients. In this report, we provide evidence-based recommendations for best practice nursing within the context of a multidisciplinary team. We also provide evidence-based recommendations relative to medical error re-

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*Department of Nursing, Newton-Wellesley Hospital, Newton, Massachusetts; †Department of Endocrinology and Nutrition, Boston Medical Center, Boston, Massachusetts; ‡Department of Surgery, Lawrence Memorial Hospital, Medford, Massachusetts; §Department of Nursing, Brigham & Women's Hospital, Boston, Massachusetts; ¶Department of Nursing, Tufts-New England Medical Center, Boston, Massachusetts.

Address correspondence to Ann Mulligan, Newton-Wellesley Hospital, 2014 Washington Street, Newton, MA 02462.

E-mail: amulligan@partners.org

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¹ Nonstandard abbreviations: WLS, weight loss surgery; VS, vital sign; OR, operating room; PCA, patient-controlled analgesia; PACU, postanesthesia care unit; ICU, intensive care unit; CPAP, continuous positive airway pressure.

duction, systems improvement, credentialing of systems and practitioners, and research needed for the future.

Research Methods and Procedures

Our Task Group performed a systematic review of the scientific literature using MEDLINE and CINAHL. We searched nursing journals from 1985 to 2004 and identified 134 articles; 16 were found to be pertinent. These were reviewed in detail and used in the context of this report. The quality of the evidence was graded according to a system derived from established evidence-based models (5). We found no evidence-based research pertaining to perioperative nursing care of the WLS patient. We found only two randomized controlled trials (6,7) (Category A) regarding critical care. Most evidence was Category D. Recommendations are based on the best available evidence and expert opinion (Table 1).

Results

Patient Safety

Staff Education. Competency-based nursing care is essential to ensure the safety of WLS patients and nursing staff. Those who care for patients with severe obesity should complete a competency-based orientation that enables them to identify potential complications and prevent adverse outcomes. Core curriculum should cover the physiological and psychological effects of severe obesity, associated comorbidities, surgical options, and the benefits and risks of surgery. Nurses should be able to demonstrate skill and knowledge in the use of special equipment for patients with severe obesity.

Educational in-service sessions should be made available to increase understanding of obesity-related psychological issues and promote awareness of intended or unintended bias (e.g., groans during transport). Purhl and Brownell (8) have reported that widespread bias and discrimination based on weight have been documented in key areas of living, including education, employment, and health care. Wang et al. (9) have found internalized devaluation in overweight and obese individuals, an outcome with implications for changing the stigma of obesity and for understanding the psychosocial and even medical impact of obesity on those affected.

Recommendations (Category D):

- Educational in-service sessions on the unique physical and emotional needs (8,9) of WLS patients.
- Proven skill with the use of specialized equipment required for providing care to WLS patients.

Preoperative Care

Preoperative nursing care should include a comprehensive admission assessment, identification of the patient's

support system (family and/or friends), and education of the patient and family about the surgery and postoperative care. Other responsibilities include ensuring a safe physical environment; protecting patient privacy; providing size-appropriate materials (e.g., patient gowns); helping patients with activities of daily living, especially those that are made more difficult because of severe obesity; taking vital signs (VSs); checking laboratory work; and ensuring the completeness of paperwork. Nurses carry out a wide range of preoperative responsibilities.

Recommendations (Category D):

- Ensure a safe physical environment.
- Help patients with activities of daily living.
- Take VSs.
- Check lab work.
- Ensure that paperwork is complete.
- Confer with a dietitian.

Preoperative Circulating Nurse

Within the preoperative holding area, the circulating nurse should reassess the patient. The assessment should include special factors that affect positioning, physical limitations, and skin condition. Hahler (10) has suggested that skin evaluation should include careful assessment of all skinfolds. Data indicate that measures to prevent intraoperative injury to the patient should be part of the nursing care plan (11,12). Preoperative nurses should obtain appropriate sizing criteria for application of antiembolic stockings and appropriately sized sequential compression.

Recommendations (Category D):

- Develop, document, and implement a nursing care plan that includes measures to prevent intraoperative injury (11,12).
- Be able to assess whether antiembolic stockings are too constrictive.
- Be able to appropriately size sequential compression leg boots or pedal boots and place them over stockings.

Perioperative Care

The nurse's assessment should help to secure an appropriate bed designed to facilitate the recovery of patients with severe obesity. The nurse must work with the other team members to ensure the safe transfer of the patient to the operating room (OR). Careful consideration with respect to preoperative sedation should be taken if the patient must ambulate to the OR table or play a more active role in the transfer process. Graling and Elariny (11) have reported that nurses should be prepared to review the planned procedure with the patient and provide the patient with ample opportunity to ask questions (11–13).

Recommendations (Category D):

- Demonstrate deep breathing exercises that patients will need to do postsurgery.

Table 1. Results from the evidence review

Year of publication	First author	Reference no.	Major recommendations	Evidence grade
2004	Gallagher	19	Recommends that nurses who work in pre- and postoperative areas be well-educated re: the long-term benefits and risks of weight loss surgery	D
2004	Blackwood	15	Recommends that nurses have broad understanding of the health implications of obesity, be familiar with common WLS procedures, and know how best to meet the unique postoperative care needs of this increasing patient population	D
2003	Graling	11	Review of all nursing issues, except care in the ICU	D
2002	Barrow	12	Describes the Roux-en-Y method of gastric bypass and identifies pre- and postoperative nursing care	D
2003	Sandlin	13	Identifies special equipment needs of the bariatric patient. Recommends nursing care activities in and post-PACU	D
2003	Ferraro	18	Covers preoperative issues, OR/PACU/discharge teaching	D
2003	Davidson	14	Describes the special needs of the critically ill morbidly obese patient with a focus on the care of patients after obesity surgery	D
2004	Voelker	16	Review of preoperative, OR/PACU, and ICU nursing issues	D
2001	Bock-Lopez	22	Review of the special considerations for pre- and postoperative care. Recommends patient teaching regarding the specific operative procedure. Recognizes the importance of discharge teaching and psychosocial issues for the bariatric patient	D
2003	Reto	20	Describes psychological needs of the patient and nursing bias associated with obesity	D
2001	van den Berghe	6	Intensive insulin therapy to maintain glucose at or below 110 mg/dL reduces mortality	A, prospective randomized controlled study of 1548 patients
2000	Kress	7	Daily interruption of sedation decreases duration of ventilation	A, a randomized controlled trial of 128 patients

- Prepare/educate patients on what will happen during and after surgery (e.g., intravenous solutions, the possibility of blood transfusions, and leg exercises postsurgery to prevent deep vein thrombosis).
- Explain catheters and other invasive lines.
- Explain how to use patient-controlled analgesia (PCA).
- Review postoperative medications.
- Identify and address patient concerns and make referrals, as appropriate, to other care team members.
- Identify and document patient support systems.

OR

Nurses involved in abdominal prep should give special attention to manipulating between the skinfolds and under the panniculus. Barrow (12) notes the need to pay special attention to heightened risk for postoperative surgical infection in WLS patients. OR nurses must be prepared to administer all necessary medications. These may include: antibiotics, heparin or low-molecular weight heparin, prophylactic antiemetics, H₂ blockers, sedatives, and intravenous (IV) fluids. In dealing with severely obese patients, Hahler (10) has noted the need for nurses to use special care to ensure proper drug absorption if medications are administered using the subcutaneous or intramuscular route. The OR environment requires nurse managers to assess the need for extra staff. It may take as many as three staff members to retract the panniculus and thighs for urine catheter insertion. Extra assistance may also be necessary to position and place extra electrosurgical unit grounding pads to prevent burns. A nurse should be available to assist the anesthesia team at anesthesia induction and emergence, and during the surgery, if requested.

Recommendations (Category D):

- Position the patient properly to avoid nerve damage or other pressure-related injury.
- Be aware of the possible need for extra support.
- Secure patient extremities to prevent movement or nerve plexus injuries.

Postanesthesia Care Unit (PACU)

Davidson et al. (14) have noted that safe transfer of an unconscious patient may require the efforts of up to five trained staff members. Blackwood (15) has reported the need to pay special attention to airway stability, hemodynamic stability, and pain management in severely obese patients. Both Sandlin (13) and Davidson et al. (14) have reported that the head of the patient's bed should be maintained at a 35° to 40° angle to reduce abdominal pressure and increase tidal flow. Voelker (16) has noted that severely obese patients are at heightened risk for quick oxygen desaturation and require close monitoring. Barrow (12) has demonstrated the need to recognize lipophilic drugs that would place patients at risk for re-sedation. Sandlin (13) has

also described the need for increased awareness regarding oversedation of severely obese WLS patients.

Sandlin (13) has reported the need for nurses to assess WLS patients for postoperative nausea and vomiting; in the case of gastric banding, prevention and/or treatment of postoperative nausea or vomiting could prevent band slippage. Sullivan (17) has documented issues to consider in the safe transfer of severely obese WLS patients. Ferraro (18) and Davidson et al. (14) have also documented various ways to transfer WLS patients, including use of a transfer mat or board or the use of several trained staff to transfer the patient laterally. Davidson et al. (14) have reported that passive and active range of motion exercises are imperative for WLS patients who are bedridden on a long-term basis. The PACU nurse is responsible for monitoring patients according to hospital standards of care.

Recommendations (Category D):

- Pay special attention to airway stability, hemodynamic stability, and postoperative pain management.
- The nurse should be accompanied by a respiratory therapist when any ventilated patient travels out of the PACU or intensive care unit (ICU) for testing.
- Continuous oxygen saturation monitoring for patients receiving continuous positive airway pressure (CPAP) and using PCA.

Discharge and Follow-Up

WLS patients are typically discharged on postoperative day 3 or 4 but may require more monitoring due to risk from obesity-related comorbid conditions (15,19).

Recommendations (Category D):

- Thorough discharge instructions, including detailed plans for follow-up care.
- A phone call to WLS patients 48 hours after discharge to clarify instructions, determine progress, provide encouragement, and give patients an opportunity to ask additional questions.
- Solicit patient feedback on their treatment during hospitalization.

Strategies for Medical Error Reduction

Reto (20) has noted that clinical pathways can improve coordination of care and achieve desired outcomes that can lead to successful discharge (Table 2). Standardized order sets and/or clinical pathways can minimize medical errors. Clinical pathways, used in acute care settings to outline care plans and define expectations, can also improve coordination, communication, and delivery of appropriate care.

Recommendation (Category D):

- Communication among the nurses, surgeons, and other members of the WLS care team must be clear and open.

Table 2. Sample clinical pathway for the postoperative nursing care of the WLS patient

	Day of surgery		
	POD 1	POD 2	POD 3
Prophylactic medication	Preoperative antibiotic; preoperative Heparin/Lovenox; postoperative antibiotic q 8 hours × three doses	Complete antibiotic course Heparin/Lovenox sc	Heparin/Lovenox sc
Cardiovascular fluid management	VS q 4–6; call doctor if T > 101, HR > 110, SBP < 100, IVs @ 200 mL/h; Foley to CD; check output q 2 hours × 24 hours; call doctor if UO < 50 mL/h × 2 hours; Hct 4 hours postoperative call doctor if less than 6 points compared with preoperative; glucose level checks	VS q 4 to 6 hours; call doctor if T > 101, HR > 110, SBP < 100, Foley to CD call doctor if UO < 30 mL/h; CBC, BUN, creatinine	VS q 4 to 6 hours, call doctor if T > 101, HR > 110, SBP < 100, hep lock IV if tolerating PO fluids; discontinue Foley DTV in 8 hours; reinsert Foley if unable to void
Pulmonary management	CPAP as ordered O ₂ via NC/face mask to keep O ₂ saturation > 94%; IS q 2 hours while awake; elevate HOB 30° to 45°	CPAP as ordered; discontinue O ₂ if O ₂ sat on room air > 94%; IS q 2 hours while awake; elevate HOB 30° to 45°	Same
Pain management	PCA as ordered; call doctor for shoulder or back pain	Same	Same
GI	Absence of nausea, vomiting, distention	Bowel sounds, nondistended	Flatus, nondistended
Diet	NPO, ice chips in moderation	Stage 1 of diet	Stage 2 of diet if Stage 1 tolerated; RD consult to begin diet teaching
Activity	OOB/ambulate with assistance; SCD when at rest and until ambulating independently	Ambulate with assistance; OT/PT consult PRN; same	Ambulate independently; same; same
Wound/drain care	Assess dressing JP to bulb drainage if in place	Dressing change by doctor; assess wound	Assess wound; change dressing
Discharge teaching		Review expected; LOS; discuss home care needs and rehab plan; collaborate with Case Manager	Review discharge medications and instructions

POD, post op day; VS, vital sign; q, every; sc, subcutaneously; T, temperature; HR, heart rate; SBP, systolic blood pressure; CD, constant drainage; UO, urine output; hep, Heparin; CPAP, continuous positive airway pressure; NC, nasal cannula; HOB, head of bed; PCA, patient-controlled analgesia; NPO, nothing by mouth; PO, by mouth; OOB, out of bed; OT, occupational therapy; PT, physical therapy; JP, Jackson-Pratt; IS, incentive spirometry; RD, Registered Dietician; SCD, sequential compression devices; LOS, length of stay; rehab, rehabilitation; VNA, visiting nurse; prm, as needed; DTV, total volume.

Systems Improvements

Use of a dedicated area, fully and appropriately equipped for the care of patients with severe obesity, will improve the quality of care, the patient's experience, and the productivity and morale of participating clinicians. Gastric bypass patients may need to spend extended time on ventilators or in the ICU. Many computerized tomography scanners will not hold patients > 500 lbs (21).

Recommendation (Category D):

- The use of a dedicated area, fully and appropriately equipped for the care of patients with severe obesity.

Credentialing of Systems and Practitioners

At this time, there is no specific national certification for nurses who specialize in the care of patients undergoing WLS. Institutions should provide opportunities for ongoing nursing education to advance and maintain specialized knowledge in the care of severely obese WLS patients.

Recommendation (Category D):

- Ongoing nursing education to advance and maintain specialized knowledge in the care of severely obese WLS patients.

Research Needed for the Future

This task group recommends research in the following areas:

- Nurses' attitudes toward patients with severe obesity (8,9).
- Impact of nurses' attitudes and biases on patient outcomes and experiences (8,9).
- Identification of teaching techniques that promote readiness for surgery and discharge, improved outcomes, and patient safety.
- Risk of injury to clinicians and others who provide care for hospitalized patients with severe obesity.
- Identification of best practices to improve staff safety and prevent injury.
- Identification of best practices for reduced-narcotic pain management in patients with severe obesity.

Discussion

Gallagher (19) demonstrates that competency in assessment and intervention skills leads to optimal patient outcomes and safety. Nursing care of the WLS patient begins with preadmission screening and education for lifestyle change; prepares the patient for demands and pitfalls in the immediate postoperative period; and prepares him or her for discharge, armed with knowledge of potential complications, dietary instructions, and the benefits of participation in support groups.

Blackwood (15) has reported that in severely obese patients, nursing care must focus on airway and hemodynamic

stability, pain management, and infection control. Safe and competent nursing care requires assessment of, and provision for, the complex physical and psychological needs of patients undergoing WLS. Nurses' knowledge of severe obesity, understanding of surgical procedures, assessment skills, and early recognition and reporting of complications are an integral part of successful patient recovery.

Empathy and sensitivity to the psychological impact and emotional damage incurred by those who are exposed to widespread discrimination on the basis of weight alone are equally critical (8,9). The goals of this evidence-based review were to detail the unique nursing responsibilities involved in caring for severely obese WLS patients and to provide evidence-based guidelines for the safest possible best practice care that promotes their physical and emotional well-being.

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