Postoperative Pain Guidelines

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Background and Objectives: Postoperative pain is the expected but nonetheless undesirable byproduct of all surgical procedures. Humanitarian concerns and recent quasi-governmental regulations have heightened awareness about the importance of treating postoperative pain. This guideline builds upon the foundation created by the Agency for Health Care Policy and Research guideline published in 1993, highlights changes that have occurred over the past 10 years, and makes recommendations based on the current scientific evidence. In addition, it takes advantage of the versatile information management inherent in a web-based format to make the information readily available.

Methods: A multidisciplinary group of physicians, dentists, nurses, pharmacists, physical therapists, psychologists, and ethicists from the Veterans Health Administration (VHA) and Department of Defense (DoD) in conjunction with the VHA Office of Quality and Performance and a consultant group developed a postoperative pain algorithm and supporting documentation. The guideline structure and content were determined by a standardized rating of the evidence gleaned from comprehensive electronic searches.

Results: An interactive electronic and traditional "paper" guideline with a pre- and postoperative algorithm was developed. A table, which provides a menu of analgesic choices organized by specific operation, was constructed. Preferences for particular analgesic techniques and classes of medications were identified. A postoperative pain interactive pharmacopoeia and printable patient educational materials were also provided. The guideline may be reviewed at the following website: www.oqp.med.va.gov/cpg/cpg.htm.

Conclusions: This postoperative pain guideline provides readily accessible information and evidence-based guidance to a variety of providers. It highlights deficiencies in our understanding of the pain and recovery processes and how they might guide our choices of postoperative analgesic techniques. In combination with the powerful system-wide data collection capabilities of the VHA, there may be improved understanding of what techniques are useful. Finally, it may lead to the development of reliable, individualized analgesic plans for specific surgical procedures that incorporate the full range of pharmacologic and nonpharmacologic techniques. *Reg Anesth Pain Med 2003;28:279-288.*

Key Words: Postoperative pain, Guidelines.

Postoperative pain is the expected, undesirable byproduct of all surgical procedures, including those within the Veterans Health Administration (VHA) and Department of Defense (DoD). Despite its universal occurrence, our understanding of the causes and our ability to treat postoperative pain is still incomplete. Because we lack a good understanding of the conceptual basis for pain, our treatments are largely the result of applying existing techniques to control symptoms rather than a specific attempt to control or minimize physiologic, sensory, affective, cognitive, behavioral, and sociocultural events leading to the pain response.[1] As an outgrowth of a 1998 report from a 1997 survey of pain management within the VHA, the VHA identified pain management as a priority.[2] Humanitarian concerns and quasi-governmental regulations have heightened awareness about the importance of treating postoperative pain. In addition, scientific studies examining the effects of pain on postoperative recovery have underlined practical reasons for improving postoperative pain management.

Some practitioners have attempted to apply the World Health Organization (WHO) cancer pain treatment paradigm to the treatment of postoperative pain.[3,4] However, there are significant disparities between the 2 entities. Cancer pain begins slowly and is progressive with little long-term hope

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of improvement. Postoperative pain begins at its peak intensity and rapidly improves. Accordingly, the ladder of analgesic care for cancer pain using lower rung medications first and progressing as needed is inversely matched to postoperative pain, which requires potent agents initially and progresses rapidly to less potent agents.

Acute postoperative pain guidelines have been previously developed in several countries including Australia, New Zealand, and the United Kingdom. The 1993 Agency for Health Care Policy and Research (AHCPR) acute pain management guideline was a significant starting point for the United States in the process of differentiating postoperative pain from other pain states.[5] The AHCPR guideline reflected the available literature, but was too generic to use clinically.[6] Since that time, there has been progress in developing a conceptual basis for the treatment of postoperative pain, refinement of regional anesthetic techniques for postoperative use, development of new analgesic agents, improvements in postoperative monitoring, development of postoperative pain management services, and a significant amount of research devoted to the nuances of postoperative rehabilitation.

The primary purpose of this guideline is to provide a state of the art, readily disseminated guideline outlining a full range of safe and effective therapies to improve postoperative pain management within the VHA and DoD. This guideline has several secondary goals. These include to: (1) highlight preferred techniques based on current scientific evidence in a fashion that is flexible and allows the practitioner to evaluate their current practice and introduce new techniques that may be appropriate in the same setting, (2) provide evidence-based recommendations for nonpharmacologic techniques, (3) provide educational materials for the provider and the patient, and (4) accommodate the wide variety of economic and personnel issues that may affect the delivery of postoperative pain care within the VHA and DoD.

Methods

A multidisciplinary working group consisting of physicians, dentists, nurses, pharmacists, physical therapists, psychologists, and an ethicist in conjunction with the VHA Office of Quality and Performance and a consultant group created the guideline (see Table 1). The guideline-working group was educated regarding the guideline development process. Following this, they reviewed the current evidence, selected seed guidelines, and developed pre- and postoperative pain management algorithms. The algorithms were tested using clinical scenarios and specific review of the evidence.

The Evidence

References to support the guideline were generated through research questions performed using the National Library of Medicine's (NLM) MEDLINE database. Papers selected for further review were those published in English language peer-reviewed journals between 1980 and 2000. Preference was given to randomized, controlled clinical trials or nonrandomized case-control studies published between 1995 and 2000. If this initial search did not produce adequate results, the search was expanded to involve studies dating back to 1980. Studies involving meta-analyses were also reviewed. Additional references suggested by the working group were added. In areas of the guideline where evidence is not part of recent literature or is part of common clinical practice, textbooks were cited on a non-rated basis. References used in the guidelines were listed in the bibliography and electronically linked.

Rating the Evidence

Evidence-based practice involves integrating clinical expertise with the best available clinical evidence derived from systematic research. The working group reviewed the articles for relevance and graded the evidence using a rating scheme US Preventive Service Task Force Guide to Clinical Preventive Services (USPSTF, 1996 Second Edition), shown in Table 2. The Quality of Evidence (QE) rating is based on experimental design and overall quality. Randomized controlled trials (RCT) received the highest ratings (QE = I), while other well-designed studies received a lower score (QE = II-1, II-2, or II-3). The QE ratings are based on the quality, consistency, reproducibility, and relevance of the studies.

The USPSTF grading process suggests assigning a second grade that reflects the strength of the recommendation (SR) for each appraised study. The evidence grade score (i.e., the SR) reflects the significance of the evidence as drawn from the scientific studies, but does not always reflect the importance of the recommendation to individual patient care.

In lieu of the SR rating, a recommendation rating (R), using a rating scale from A to E was formulated by the working group after an orientation and tutorial on the evidence grading process. When appropriate and necessary, expert opinion was formally derived from the working group panel to

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Table 2. Quality of Evidence Rating Scheme (USPSTF, 1996)

Quality of Evidence	
Grade	Description
I	Evidence is obtained from at least one properly randomized, controlled trial (RCT).
II-1	Evidence is obtained from well-designed controlled trials without randomization.
II-2	Evidence is obtained from well-designed cohort or case-controlled analytical studies, preferably from more than one center or research group.
II-3	Evidence is obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940) could also be regarded as this type of evidence.
III	Opinions of respected authorities are based on clinical experience, descriptive studies, and case reports or reports of expert committees.

supplement or balance conclusions reached after reviewing the scientific evidence.

The R rating (displayed in Table 3) is influenced primarily by the significance of the scientific evidence. Other factors taken into consideration when making the R determination include standard of care, policy concerns, cost of care, and potential harm.

Algorithm Structure

A step-by-step decision tree defines an algorithm. The algorithm is made up of standardized shapes: (1) rounded rectangles (clinical state), (2) hexagons (decision points requiring yes or no answers), (3) rectangles (an action), and (4) ovals (links to other sections of the guideline). Algorithms allow a linear approach to evaluation and management of clinical information. The use of discrete logic trees may allow for improved intermediate and final outcome. Previous acute pain guidelines have had limited usefulness. To avoid becoming unwieldy, previous acute pain guidelines condensed available information and suppressed the multidimensional nature of pain to fit a linear format. The resultant guidelines covered postoperative pain in broad strokes, but provided little guidance to the management of specific postoperative pain problems encountered in clinical practice.

Postoperative pain changes with time in 6 identified domains (physiologic, sensory, affective, cognitive, behavioral, and sociocultural). Postoperative pain management planning traditionally focused on the sensory and physiologic domains, but now is expected to addres s all 6 domains. These 6 domains in combination with the individual needs of the patient and the available resources shaped the pre- and postoperative pain algorithms (Table 4 and Fig 1). This yielded traditional algorithms with a nonlinear multi-intervention summary table (Fig 2). This table allows for simultaneous selection of multiple regimens addressing multiple domains in a nondeductive manner. These multimodal interventions are nonlinearly assessed in Fig 2, hexagon L, (Did it produce adequate and tolerable pain relief?) yielding a linear response.

The decision to develop a site-specific intervention summary table was critical to this guideline's development. This table differentiates it from previously published guidelines. This table recognizes current medical practice in that (1) health care providers and resources are organized by type of operation, (2) medical literature regarding postoperative pain is operation specific, and (3) surgical procedure frequently defines the available routes of administration.

The route of administration component of the summary table is equally important. Route of administration is important because (1) available routes change with time during the perioperative period, (2) resources across health care systems and patient preferences are not consistent and multiple choices must be available, (3) presenting the full range of available techniques may encourage facilities presently not using preferred methods to foster their development, and (4) cognitive and nonpharmacologic therapies were given equal exposure compared with traditional pharmacologic therapies to encourage their consideration.

Annotations to the algorithm (explanations of

Table 3. Recommendation Rating Scheme

Recommendation	
Grade	Description
A	A strong recommendation, based on evidence or general agreement, that a given procedure or treatment is useful/effective, always acceptable, and usually indicated.
B	A recommendation, based on evidence or general agreement, that a given procedure or treatment may be considered useful/effective.
C	A recommendation that is not well established or for which there is conflicting evidence regarding usefulness or efficacy, but which may be made on other grounds.
D	A recommendation, based on evidence or general agreement, that a given procedure or treatment may be considered not useful/effective.
E	A strong recommendation, based on evidence or general agreement, that a given procedure or treatment is not useful/effective, or in some cases may be harmful, and should be excluded from consideration.

Table 4. Site-Specific Pain Management Interventions

Type of Surgery by Body Region	Pharmacologic Therapy (Route)							Nonpharmacologic		Comments
	PO	IM	IV	Epidural	Intrathecal	IV PCA	Regional	Physical	Cognitive	
Head and neck										
Ophthalmic	*OP, NS*	*OP, NS*	*OP, NS*	—	—	Rarely	**LA**	*C*	*X*	If there is risk of or actual bleeding avoid NS*
Craniotomy	*OP, NS*	*OP, NS*	*OP, NS*	—	—	*OP*	*LA*			If there is risk of or actual bleeding avoid NS* If renal hypoperfusion avoid all NS
Radical neck	*OP, NS*	*OP, NS*	*OP, NS*	—	—	*OP*	*LA*		*X*	
Oral maxillofacial	*OP, NS, CS*	*OP, NS, CS*	*OP, NS, CS*	—	—	*OP*	*LA*	**C, I**	*X*	
Thorax-noncardiac										
Thoracotomy	*OP, NS*	*OP, NS*	*OP, NS*	**OP, LA**	*OP, LA*	*OP*	**LA**	**C, T**	*X*	If there is risk of or actual bleeding avoid NS* If renal hypoperfusion avoid all NS
Mastectomy	*OP, NS*	*OP, NS*	*OP, NS*	*OP, LA*	*OP, LA*	*OP*	*LA*	*C, T*	*X*	
Thoracoscopy	*OP, NS*	*OP, NS*	*OP, NS*	*OP, LA*	*OP, LA*	*OP*	*LA*	*C, T*	*X*	
Thorax-Cardiac										
CABG	*OP, NS*	*OP, NS*	**OP, NS**	Rarely	*OP*	*OP*	Rarely			If there is risk of or actual bleeding avoid NS* If renal hypoperfusion avoid all NS
MID-CAB	*OP, NS*	*OP, NS*	*OP, NS*	Rarely	*OP*	*OP*	*LA*		*X*	If there is risk of or actual bleeding avoid NS* If renal hypoperfusion avoid all NS
Upper abdomen										
Laparotomy	*OP, NS*	*OP, NS*	*OP, NS*	**OP, LA**	*OP, LA*	*OP*	*LA*	**E, T**	*X*	Opioids may impair bowel function. If there is risk of or actual bleeding avoid NS* If renal hypoperfusion avoid all NS.
Laparoscopic cholecystectomy	*OP, NS*	*OP, NS*	*OP, NS*	Rarely	Rarely	*OP*	*LA*	*E, T*	*X*	Opioids may cause biliary spasm
Nephrectomy	*OP, NS*	*OP, NS*	*OP, NS*	**OP, LA**	*OP, LA*	*OP*	*LA*	*E, T*	*X*	
Lower abdomen/pelvis										
Hysterectomy	*OP, NS*	*OP, NS*	*OP, NS*	*OP, LA*	*OP, LA*	*OP*	*LA*	*E*	*X*	Opioids may impair bowel function
Radical prostatectomy	*OP, NS*	*OP, NS*	*OP, NS*	**OP, LA**	*OP, LA*	*OP*	—	**E**	*X*	Opioids may impair bowel function. If there is risk of or actual bleeding avoid NS* If renal hypoperfusion avoid all NS.
Inquinal Hernia	*OP, NS*	*OP, NS*	*OP, NS*	Rarely	*OP*	Rarely	**LA**	*C*	*X*	
Back/Spinal										
Laminectomy	*OP, NS*	*OP, NS*	*OP, NS*	Rarely	Rarely	*OP*	—	**C, E**	*X*	
Spinal fusion	*OP*	*OP*	*OP*	Rarely	Rarely	*OP*	—	**E, I**	*X*	Use of NS may be associated with nonunion
Extremities										
Vascular	*OP, NS*	*OP, NS*	*OP, NS*	**OP, LA**	*OP, LA*	*OP*	*LA*	**C, E**	*X*	If there is risk of or actual bleeding avoid NS* If renal hypoperfusion avoid all NS.
Total hip replacement	*OP, NS*	*OP, NS*	*OP, NS*	**OP, LA**	*OP, LA*	*OP*	*LA*	**C, E, T**	*X*	Use of NS is controversial
Total knee replacement	*OP, NS*	*OP, NS*	*OP, NS*	*OP, LA*		*OP*	**LA**	**C, E, T**	*X*	Use of NS is controversial
Knee arthroscopy/Arthroscopic joint repair	*OP, NS*	*OP, NS*	*OP, NS*	Rarely	*OP*	*OP*	*LA*	**C, E, T**	*X*	
Amputation	*OP, NS*	*OP, NS*	*OP, NS*	*OP, LA*	*OP, LA*	*OP*	*LA*	**C, E, T**	*X*	
Shoulder	*OP, NS*	*OP, NS*	*OP, NS*	—	—	*OP*	*LA*	**C, E, I, T**	*X*	

Abbreviations: OP, opioids; NS, NSAIDs; CS, corticosteroid; LA, local anesthetics; C, cold; E, exercise; I, immobilization; T, TENS; X, use of cognitive therapy is patient-dependent rather than procedure-dependent

Indications for use: bold; preferred based on evidence (QE = I, R = A); *italicized*; common usage based on consensus (QE = III); plain text; possible use.

*Bleeding is not contraindication for COX-2.

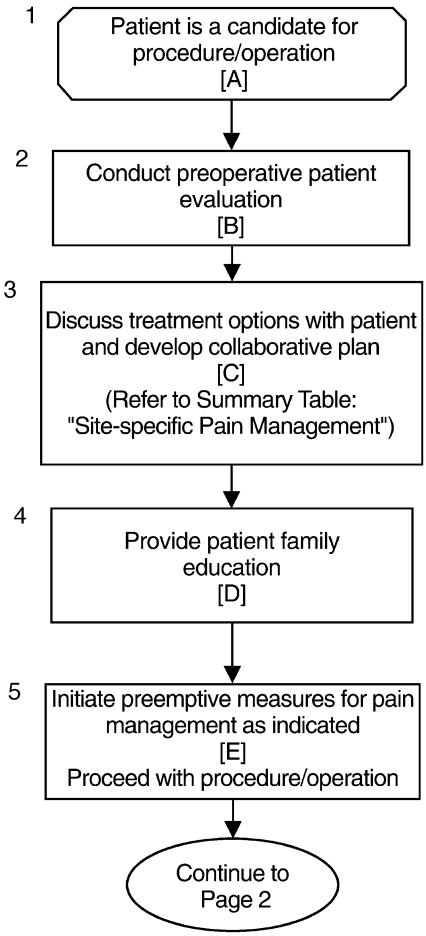

Fig 1. Management of postoperative pain—preoperative management.

the algorithm contents) were essential. For example, annotation "Figure 2 hexagon L- did the intervention produce adequate and tolerable pain relief?" encompasses not only intensity and patient acceptability targets (patient derived), but also functional targets (patient and health care provider derived). Another example is the annotation which follows; box Figure 2 rectangle M- "change drug, interval, dose, route, modality; add adjuvant or treat side effects" was produced by combining several mini-algorithms into 1 annotation that feeds back to the all encompassing "did the intervention provide adequate and tolerable pain relief?"

As the multidimensional nature of the guideline became evident, the need to provide a native electronic format preference to a paper format became obvious. The ability to rapidly evaluate a particular patient's circumstances, the appropriate methods available, and the evidence to support their use to provide educated choices to the consumer is difficult to replicate on paper. For example, a 21-year-old woman having a thoracotomy could benefit from a regional or epidural pain management technique (doses and strengths available) with adjunctive nonsteroidal therapy (doses and strengths available), transcutaneous electrical nerve stimulation (TENS) therapy, and distraction therapy in the form of music therapy. After formulating the postoperative pain plan, appropriate educational materials for the medications and epidural can be printed and given to the patient. This same process can be performed using the paper version of the guideline. However, this requires flipping between sections, comparing choices on different pages, and having to sort through routes.

Results

Major Findings From the Acute Pain Guideline Process

The product of the guideline development process was a dynamic algorithmic structure supported by over 500 references electronically linked within the document. It addressed the multidimensional nature of pain and changed with the patient's capabilities and medical condition. The algorithm highlights unavailable resources and techniques and provides evidence that acquisition of additional resources and techniques may improve postoperative pain control. This guideline may be viewed in its entirety at: www.oqp.med.va.gov/cpg/cpg.htm. A central feature of the guideline is the site-specific pain management interventions table (Table 4). This table outlines specific postoperative pain control techniques for specific types of operations and differentiates between those supported by IA evidence (Tables 2 and 3), those based on common consensus, and those that represent potential use. The presence of level IA evidence for a particular postoperative pain control technique does not mean that it is appropriate for all patients undergoing that operation. The relative risks and benefits of a given technique in the context of a specific patient's medical condition must be taken into consideration in making a choice for postoperative pain control.

Nonetheless, this guideline found strong evidence for the application of particular techniques and drug class combinations for postoperative pain control following specific operations involving specific body regions. It delineates areas in which current practice lacks strong support from the medical literature and identifies numerous opportunities to improve our knowledge of the best methods to provide postoperative pain control.

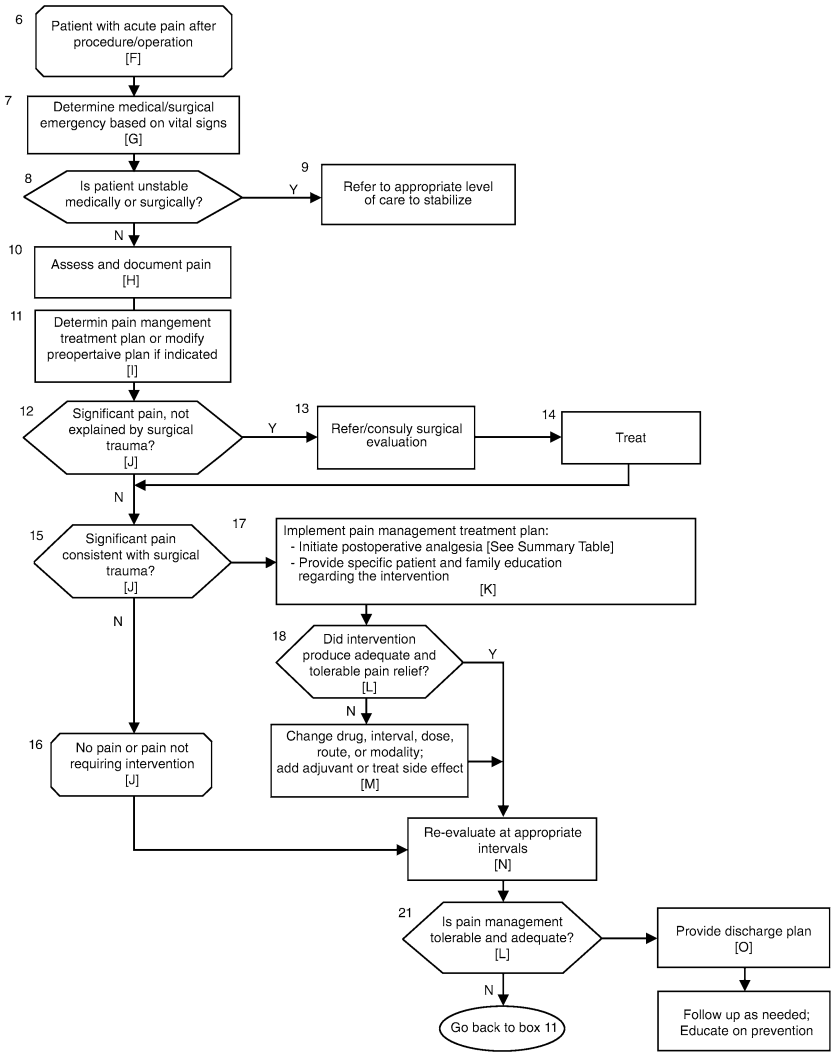

Fig 2. Management of postoperative pain—postoperative management.

Pharmacologic Interventions

There are many pharmacologic agents and delivery methods described for control of postoperative pain. The use of the oral route of administering pain medications primarily relates to the use of opioids and nonsteroidal anti-inflammatory drugs. There is little recent data regarding the efficacy of these compounds, and their use has become accepted by convention. They are most often described in a textbook setting. They are effective and commonly used, but there are no recent studies to suggest novel administration regimens or to support the use of a particular opiate or nonsteroidal medication over another. The only other class of oral agents described for control of postoperative pain is corticosteroids in the setting of oral maxillofacial surgery.

The use of the intramuscular (IM) route for delivering postoperative pain control medications has been described for opioids and nonsteroidal anti-inflammatory agents. This route has lost favor and is less commonly used due to the ready availability of intravenous (IV) medications and the unnecessary pain and erratic absorption associated with this specific delivery method.[7] The use of IV pain medications has become increasingly common with the introduction of patient-controlled analgesia (PCA) devices. These devices allow rapid, patient controlled, safe use of small doses of IV opioids throughout the hospital. This has produced reliable analgesia with maintenance of more consistent plasma drug levels without the need for the continuous presence of medical personnel to administer analgesic compounds. The absence of recent level IA evidence to support the use of IV PCA over IM or nurse-administered IV medications should not be misconstrued as a lack of support for this well accepted and commonly used method of delivering

opioids for postoperative pain control. The absence of recent studies is a testament to its acceptance and its relegation to textbook information regarding the management of postoperative pain.[8] Unlike PO and IM delivery methods, IV methods have level IA evidence to support their use to deliver opioids and nonsteroidal anti-inflammatory drugs following coronary artery bypass grafting (CABG). In particular, the use of IV opiates administered in a nonpatient–dependent format for the first 24 hours was beneficial following CABG.

Neuraxial and Regional Interventions

There are a wide variety of interventional techniques available for providing postoperative pain control. The medical literature outlining the use of these techniques and evaluating their success or failure revolves around their application to specific surgical procedures, rather than examination of the technique alone. This results in a need to look at pain control following specific surgical procedures to critically evaluate the utility of various pain control techniques with level IA evidence from randomized, controlled trials.

Good pain control after thoracotomy is often difficult to achieve. There is level IA evidence that documents the ability of thoracic epidural analgesia or paravertebral blocks to provide active analgesia following thoracotomy. This is distinct from the passive analgesia and sedation that is often associated with the use of opioids in the early perioperative period for pain control following thoracotomy. The need to continue normal ventilation in the presence of a fresh surgical incision and chest tubes provides ongoing nociceptive stimuli. In this setting, inadequate analgesia may lead to relative hypoventilation, splinting, and the development of pneumonia. It is no longer adequate to provide passive analgesia in which the patient is comfortable only with minimal movement and shallow breathing. Rather, active analgesia that allows deep breathing, coughing, and participation in chest physical therapy and ambulation is preferred.

There is level IA evidence to support the use of epidural analgesia for laparotomy and radical prostatectomy. There are distinct physiologic changes that occur following intra-abdominal surgery that include, but are not limited to, diaphragmatic dysfunction, reduction in vital capacity, and ileus. Inadequate pain control may result in splinting and subsequent development of pneumonia. It may limit movement and increase the risk of deep vein thrombosis (DVT). The use of higher doses of opioids to provide adequate pain control may prolong the duration of the postoperative ileus. The ability to provide active analgesia during ambulation, deep breathing, and coughing and decrease time to recover bowel function and perhaps decrease the risk of myocardial ischemia make epidural analgesia following abdominal surgery a good choice.

The use of regional anesthesia for inguinal herniorrhaphy is associated with decreased postoperative pain and improved recovery. Although all regional anesthesia techniques provide improved postoperative analgesia and a reduced incidence of postoperative side effects following inguinal hernia repair, the use of field blocks or peripheral nerve blocks stands out in this regard. They provide adequate surgical anesthesia and prolonged postoperative analgesia with minimal side effects that might otherwise delay discharge from the hospital or ambulatory surgery setting.

There is level IA evidence to support the use of epidural anesthesia and epidural analgesia following major peripheral vascular surgery. Although adequate analgesia may be achieved with the use of IV-PCA, administration of epidural local anesthetics has been demonstrated to decrease the incidence of thromboembolism and graft occlusion following vascular bypass surgery. In addition, the use of regional anesthesia intraoperatively and postoperatively has been associated with decreased morbidity and mortality in multiple studies.[9] There is level IA evidence to support the administration of epidural opioids and local anesthetics for postoperative pain control following total hip arthroplasty. These interventions provide analgesia that is superior to IV-PCA. However, the rapid transition to oral analgesics as well as significant concerns regarding epidural analgesia in the presence of anticoagulants commonly used in the postoperative period mean that careful planning and communication with the surgeon are critical to providing improved analgesia with minimal risk to the patient.

The use of regional analgesia either in the form of continuous peripheral nerve blocks or epidural analgesia is associated with decreased postoperative pain and improved recovery following total knee arthroplasty. This improved recovery profile associated with the use of these techniques is most dramatic with respect to the ability to tolerate the use of continuous passive motion (CPM) devices postoperatively that increase early range of motion. Although no long-term differences in range of motion (ROM) can be demonstrated in association with the use of these techniques, the ability to meet ROM goals earlier with epidural analgesia or femoral nerve block facilitate earlier discharge from the hospital and/or the rehabilitation facility. In this setting, the use of continuous femoral nerve block

with local anesthetic is preferred over epidural analgesia due to a decreased incidence of side effects.

Nonpharmacologic Interventions

There are a wide variety of nonpharmacologic techniques that have been examined for their ability to provide postoperative pain relief or to reduce the dose requirement for other analgesic medications. In this guideline, an attempt was made to look at these techniques with the same degree of rigor applied to conventional postoperative pain control techniques. In some cases, the success of these techniques is controversial, with well-performed studies drawing opposite conclusions about their utility. In addition, the utility of these particular techniques appears to be heavily dependent on the specific surgical procedure to which they are applied.

The use of cold as a means of improving postoperative analgesia appears to be most effective in the setting of surgical procedures involving the extremities or oral maxillofacial surgery. In these settings, direct application of cold to the surgical site reduces the need for additional pain medications, reduces swelling, and in the case of extremity procedures, facilitates physical therapy.

The use of TENS for reduction of postoperative pain remains controversial. There are well-designed, randomized, control trials supporting the use of TENS as an adjunct to reduce opiate requirements for postoperative pain control in abdominal pain and cholecystectomy. TENS has also been evaluated in a variety of other settings including major orthopedic surgery, amputation, and thoracotomy. In these settings, the evidence is significantly less supportive, and numerous articles demonstrate little or no benefit.

Activity following surgery has become a standard component of the postoperative care plan. There is good evidence (IA) that exercise after surgery reduces the risk of venous thrombosis and decreases pain following discectomy. There is weaker evidence to support its use in knee and shoulder pain.

The use of cognitive techniques as analgesic adjuncts is efficacious for a variety of operations, but its effective use is determined largely by patient factors rather than specific technique. Because evidence does not favor one strategy over others in postoperative pain management, patients should be provided information about different relaxation or distraction techniques and assisted in choosing the strategy that they are most motivated to learn and practice. Further, the use of these techniques is enhanced by patient education before the surgical procedure.

Discussion

This guideline was written to provide useful, state of the art, readily accessible pain management guidance to providers of postoperative care. The ultimate success of this guideline will be judged by improvements in pain scores and patient function following surgical procedures. Intermediate indicators of success may come in the way of website traffic, requests for copies, citations in the literature, and expansion of pain management services with strong evidence ratings within the VHA.

To the frequent practitioners of pain management, the findings of the guideline are as expected. Of course, benefits that are accrued from the judicious use of a multimodal postoperative analgesic plan include better pain control and patient satisfaction, lower morbidity, and faster discharge from the hospital or ambulatory surgery center. There may be a variety of methods selected to improve pain management. Proper pain management practice requires planning and cooperation. What may be unexpected is that there is enough available information to structure an easily navigable outline for rational postoperative pain care.

This guideline may not reflect the current practice of postoperative pain management in the VHA, but rather where the scientific evidence suggests it should be. It differs from previously published acute pain guidelines that presented the range of postoperative pain control methods without making specific recommendations for specific techniques to control pain after certain operations.

The guideline is written acknowledging that it can be used in a variety of ways. It is expected that some may only print the education materials, some will use it as a reference to look up a dose of a drug that they use infrequently, some as an outline for giving a lecture, some as a repository for reference material, and others a general textbook on postoperative pain. Because it is electronic, it is capable of doing all of these things, not only for those with a printed copy, but wherever Internet access is available.

The guideline does make our deficiencies evident. Recommendations are made for techniques and medications, which are not universally available. The conceptual deficiencies in postoperative pain management are reflected in nebulous “adequate and tolerable” decision points. There is no interaction matrix to guide or prevent the selection of modalities that are additive, synergistic, or incom-

patible. As an example, it is reasonable to expect that too much opioid use may interfere with cognitive techniques. However, it is also possible that TENS use might interfere with cognitive techniques. In most cases, the literature examining the use of nonpharmacologic techniques to provide postoperative pain control is sparse or absent.

This guideline does not address the technical aspects of performing the various regional or neuraxial techniques outlined in the guideline, which may be found in various textbooks of regional anesthesia. It does not address the specific indications, contraindications, or potential complications associated with the performance of these techniques. In particular, the specific concern about the use of neuraxial anesthetic/analgesic techniques in association with anticoagulants is not addressed. Guidelines regarding this particular issue have been published by the American Society of Regional Anesthesia and Pain Medicine and may be found at www.asra.com.

Perhaps in the future, postoperative pain management will allow selection of a mean analgesic requirement determined by a level of function known to optimize recovery. The practitioner and patient could select various components of the analgesic/functional armentarium to arrive at mutually selected goals. This guideline is expected to be part of that future. It is planned to update the guideline every 3 years, incorporating information sent from users of the new guideline, data collected system-wide by the VHA computerized patient record system (CPRS), and new literature.

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