Management of Glenohumeral Joint Osteoarthritis

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This clinical practice guideline was approved by the American Academy of Orthopaedic Surgeons Board of Directors on March 23, 2020.

The complete document, *Management of Glenohumeral Joint Osteoarthritis Evidence-Based Clinical Practice Guideline,* includes all tables and figures and is available at www.aaos.org/gjocpg.

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Abstract

The *Management of Glenohumeral Joint Osteoarthritis Evidence-Based Clinical Practice Guideline* is based on a systematic review of published studies for the treatment of glenohumeral joint osteoarthritis. The purpose of this clinical practice guideline is to address the management of patients with glenohumeral joint osteoarthritis. It is not intended to address the management of glenohumeral joint arthritis from etiologies other than osteoarthritis (ie, rheumatoid arthritis, inflammatory arthritis, posttraumatic arthritis, osteonecrosis, rotator cuff tear arthroplasty, capsulorrhaphy arthroplasty, and postinfections arthroplasty) This guideline contains 13 recommendations to assist all qualified and appropriately trained healthcare professionals involved in the management of glenohumeral joint osteoarthritis. In addition, the work group highlighted the need for better research for implant survivorship of total shoulder arthroplasty, the efficacy of physical therapy and other nonsurgical treatment modalities, the use of advanced imaging modalities and software and their impact on clinical and functional outcomes, complication rates or implant survivorship, and the need for high-quality studies demonstrating improved clinical outcomes and/or implant survivorship for the use of reverse shoulder arthroplasty as opposed to anatomic shoulder arthroplasty in challenging situations.

Overview and Rationale

The American Academy of Orthopaedic Surgeons (AAOS), with inputs from the representatives of the American Shoulder and Elbow Surgeons, the American College of Radiology, the American Society of Shoulder and Elbow Therapists, the American Academy of Physical Medicine and Rehabilitation, and the Arthroscopy Association of North America, recently published their clinical practice guideline (CPG), the Management of Glenohumeral Joint Osteoarthritis.[1] This clinical practice guideline was approved by the AAOS Board of Directors in March 2020. The purpose of this clinical practice guideline is to assist physicians, surgeons, and other healthcare professionals who care for patients with glenohumeral joint osteoarthritis in clinical decision-making for the nonsurgical and surgical management of these patients based on the best current available evidence.

Symptomatic primary glenohumeral joint osteoarthritis is a condition presenting with pain, reduced range of motion, and progressive loss of shoulder function. Glenohumeral joint osteoarthritis is characterized by progressive humeral head cartilage loss, adaptive changes to the subchondral

bone, and development of inferior humeral head osteophytes. These changes result in a subsequent biomechanical change of the glenohumeral joint, joint space narrowing, and posterior humeral head subluxation, followed by progressive posterior glenoid bone loss. Although it has been hypothesized that there may be a genetic predisposition to disease progression, primary glenohumeral joint osteoarthritis has no specific causative factor that explains the etiology of the disease process other than the degenerative process that naturally occurs because of aging. Primary glenohumeral joint osteoarthritis can occur over a broad age range; it is most commonly seen in patients older than 60 years of age and more common in women. Radiographic data have found a prevalence rate of 94% in women and 85% in men over the age of 80 years.[2] Furthermore, Kerr et al[3] reported a 20% incidence of idiopathic glenohumeral joint osteoarthritis in patients older than 60 years who presented for shoulder symptoms. Although the true incidence and prevalence of glenohumeral joint osteoarthritis cannot be estimated currently, it is important to recognize it is common.

Chronic shoulder pain can result in notable dysfunction, disability, and increased healthcare costs. Shoulder pain has been reported as one of the most commonly affected joints for chronic pain, affecting 22.3 million patients older than 18 years in 2015.[4] It is estimated that shoulder pain affects 5% to 21% of the adult population in the United States, and glenohumeral joint arthritis affects nearly a third of the world's population older than 60 years.[5] The economic burden for the management of glenohumeral joint osteoarthritis is directly correlated with the duration of conservative management, surgical costs, perioperative complication rates as well as implant survivorship, and the need for revision shoulder arthroplasty. As the population ages, so does the disease burden of patients needing treatment of glenohumeral joint osteoarthritis. The reported annual increase of procedural volume from 2007 to 2015 has been estimated between 192% and 322%. Correspondingly, this will also result in an increased revision burden of approximately 4.5% to 7%.[6]

Therefore, the AAOS developed an evidence-based, CPG to aid practioners in the treatment of patients with glenohumeral joint osteoarthritis.[1] Furthermore, the CPG represents a resource demonstrating areas that need additional investigation to provide improved evidence-based guidelines for the treatment of glenohumeral joint osteoarthritis. An exhaustive literature search was conducted resulting initially in over 965 articles for full review. The articles were then graded for quality and aligned with the work group's patients, interventions, and outcomes of concern. For CPG PICO (ie, cohort, intervention, comparison, and outcome) questions that returned no evidence from the systematic literature review, the work group used the established AAOS CPG methodology to generate 16 companion consensus statements for procedural and clinical interventions including preoperative and postoperative physical therapy, alternative nonsurgical treatments, injectable biologics, opioid pain medication, biceps tenodesis and tenotomy, and the utilization of tranexamic acid.

In summary, the glenohumeral joint osteoarthritis guideline involved reviewing over 3,300 abstracts and more than 960 full-text articles to develop 13 recommendations supported by 69 research articles meeting stringent inclusion criteria. Each recommendation is based on a systematic review of the research-related topic which resulted in six recommendations classified as high, six recommendations classified as moderate, and one as limited. The strength of recommendation is assigned based on the quality of the supporting evidence. The strength of recommendation also takes into account the quality, quantity, and the trade-offs between the benefits and harms of a treatment; the magnitude of a treatment's effect; and whether there are data on critical outcomes.

Guideline Summary

The recommendations developed are meant to aid in the clinical decision-making process for the treatment of patients presenting with symptomatic primary glenohumeral joint osteoarthritis. Use of these guidelines helps physicians determine appropriate interventions which are most likely to provide predicable beneficial outcomes before recommending surgery. This set of updated CPGs is very different than the previous guidelines published in 2009.[7] The previous iteration presented 16 statements and only one of these statements provided moderate evidence for support of the recommendation. Fifteen of 16 recommendations were based on either level IV evidence, expert opinion (level

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V), or work group consensus. Fortunately, many of these factors/questions prompted investigation providing improved quality of the literature published, allowing for more definitive guideline recommendations.

The recommendation for the use of total shoulder arthroplasty (TSA) over hemiarthroplasty has now been upgraded to strong because of increases in supporting evidence. The growth in the body of literature allows for meta-analysis to strengthen this recommendation and demonstrate that anatomic TSA provides markedly better improvement regarding pain, range of motion, patient satisfaction, patient-reported outcomes, and lower complication rates. Additional follow-up is still needed to determine whether these findings maintain over time specifically related to implant survivorship.

Similarly, the strength of recommendations has been updated related to the use of either pegged or keeled all-polyethylene glenoid implants with the current strong recommendation now stating "strong evidence supports the use of pegged or keeled glenoid components with a well-functioning rotator cuff." Interestingly, two of the four studies[8,9] which met our work groups inclusion criteria had been published at the time of the previous CPG. A pooled data analysis of the studies which met the inclusion criteria found lower incidence of radiolucent lines for the pegged implants, but these findings did not influence patient outcomes, nor implant survivorship. These studies presented only short-term follow-up; therefore, long-term follow-up is needed (>8 to 10 years) to determine whether there will be a notable difference between these glenoid implant designs related to clinical outcome and implant survivorship. Currently, based on the best available evidence, this work group leaves it at the description of the surgeon as to what works best in their hands.

Management of the subscapularis was challenging in the 2009 CPG, with an inconclusive recommendation stating "unable to recommend for or against subscapularis transtendinous approach or lesser tuberosity osteotomy."[7] The addition of evidence from moderate-quality studies has allowed for strengthening this recommendation to a moderate and stating that surgeons can use subscapularis peel, lesser tuberosity osteotomy, or tenotomy when performing a shoulder arthroplasty. The results of the included studies have demonstrated no notable difference with healing or clinical outcomes comparing all three techniques.

This work group felt important to emphasize and make recommendations against the use of noncemented metal-backed glenoid implants with anatomic TSA because of the poor survivorship, high revision rates, and 76% failure rate. These implants have currently been abandoned and removed from the market in the United States. Future studies and improved implant design, specifically related to the interest in convertibility from anatomic to reverse TSA may solve this problem, but currently, this not an option for clinical use.

Recommendations on the influence of patient-related factors on predictors of postoperative complications, outcomes, and implant survivorship such as age, obesity, nicotine use, sex, mental health, and medical comorbidities are useful to guide surgeons to provide an optimal outcome. This current CPG addressed these factors with three strong statements regarding the influence on the number of patient medical comorbidities, sex, and body mass index (BMI) and how these influence surgical outcomes after a TSA. In addition, three moderate statements regarding patient age, depression, and tobacco use were also made as to how these factors influence the postoperative outcomes.

Interestingly, neither BMI nor sex has been shown to affect the outcomes after a TSA in the early postoperative period. For clarification, the studies which met the inclusion criteria to formulate the recommendations regarding the influence of BMI with the risk of postoperative complications only report the first 30 days after surgery. Similarly, the studies which met the inclusion criteria for sex only provide 30 and 90 day postoperative follow-up. The influence of these factors in the long-term complication rates, patient-reported outcomes, and survivorship cannot be extrapolated by these results in the early postoperative period, and future long-term, high-quality studies are needed to be able to formulate a stronger CPG recommendation.

The current CPG makes a strong recommendation against the use of hyaluronic acid injections as a modality during nonsurgical management of glenohumeral joint osteoarthritis indicating that the added costs provide no additional benefit. In addition, the use of viscosupplementation injections for the shoulder is not an approved by the FDA and therefore is off-label use.

The increase in humeral implant design has led to several options now available including stemmed (both long and short), stemless, or humeral head resurfacing prosthesis. Evidence supporting humeral implant choice provides a limited recommendation for the use of any of these humeral prostheses. The biggest limitation of the studies which met the inclusion criteria for this recommendation is that they do not make direct comparison of stemmed, stemless, and resurfacing as well as mixed the results of hemiarthroplasty and anatomic TSA. This work group recommends that although all are safe and effective options, these implants (especially the newer stemless prostheses) be used with caution because there are no long-term outcome studies of the survivorship or complications.

Strength of Recommendation	Overall Strength of Evidence	Description of Evidence Quality	Strength Visual
Strong	Strong	Evidence from two or more "high"-quality studies with consistent findings for recommending for or against the intervention. Also, this requires no reasons to downgrade from the EtD framework	
Moderate	Moderate or Strong	Evidence from two or more "moderate"-quality studies with consistent findings or evidence from a single "high"-quality study for recommending for or against the intervention. Also, this requires no or only minor concerns addressed in the EtD framework.	
Limited	Limited, Moderate, or Strong	Evidence from one or more "low"-quality studies with consistent findings or evidence from a single "moderate"-quality study recommending for or against the intervention. Also, higher strength evidence can be downgraded to limited because of major concerns addressed in the EtD Framework.	
Consensus	No reliable evidence	There is no supporting evidence, or higher quality evidence was downgraded because of major concerns addressed in the EtD framework. In the absence of reliable evidence, the guideline work group is making a recommendation based on their clinical opinion.	

High-quality prospective randomized trials or prospective cohort studies with a long-term follow-up (>10 years) which compare stemmed, stemless, and humeral resurfacing for both hemiarthroplasty and anatomic TSA are needed to provide evidence supporting how humeral implant type influences patient outcome, pain relief, and survivorship.

There are still many areas of uncertainty that the current CPG could not answer as is exemplified by the need for this work group to include 16 consensus recommendations. Questions still exist related to timing, duration, and formal versus a supervised home program for both preoperative and postoperative physical therapy. Although widely used in clinical practice, currently no reliable evidence exists to support or guide these modalities. Most of what is currently used is based on expert opinion, and one retrospective case-control study[10] found no difference between a home-based physician-directed versus a standard formal physical therapy program. Future research needs to be focused on the type of protocol, timing, duration, and method of delivery (ie, home-based physician-directed or formal physical therapist-directed). The use of injectable orthobiologics (platelet-rich plasma, bone marrow aspirate, and mesenchymal stem cells) continues to be an area of controversy with benefits and possible associated potential harm with the use of these unregulated materials. High-quality studies are needed to provide the safety profile, cost-benefit profile, and efficacy in glenohumeral osteoarthritis.

Imaging of the shoulder starting with radiographs with utilization of advanced imaging including CT scan may provide a more detailed assessment of glenoid bone morphology. Known preoperative risk factors for poor functional outcomes and increased risk of implant loosening with implant failure include large full-thickness rotator cuff tears, notable posterior glenoid bone loss, notable joint line medialization, and notable posterior humeral head subluxation.[11,12] Use of 3D CT reconstructions and possible use of preoperative planning software allows for detailed preoperative surgical planning to identify, understand, and correct these deformities. Further investigation is needed to determine how these modalities affect the patient outcome and implant survivorship.

Many additional areas related to nonarthroplasty options such as arthroscopic débridement or biologic resurfacing, use of polyethylene-metal hybrid glenoid implants, management of the head biceps, same day discharge, use of postoperative cryotherapy, multimodal pain management, and tranexamic acid are all areas that warrant future

research to provide high strength recommendations because there still remains a notable gap in knowledge in these areas.

It is clear that as best available evidence continues to grow more definitive guidance can be provided for the treatment of glenohumeral joint osteoarthritis.

Recommendations

This Summary of Recommendations of the AAOS *Management of Glenohumeral Joint Osteoarthritis Evidence-Based Clinical Practice Guideline* contains a list of evidence-based prognostic and treatment recommendations. Discussions of how each recommendation was developed and the complete evidence report are contained in the full guideline at www.aaos.org/gjocpg. Readers are urged to consult the full guideline for the comprehensive evaluation of the available scientific studies. The recommendations were established using methods of evidence-based medicine that rigorously control for bias, enhance transparency, and promote reproducibility.

The Summary of Recommendations is not intended to stand alone. Medical care should be based on evidence, a physician's expert judgement, and the patient's circumstances, values, preferences, and rights. For treatment procedures to provide benefit, mutual collaboration with shared decision-making between patient and physician/allied healthcare provider is essential.

A Strong recommendation means that the quality of the supporting evidence is high. A Moderate recommendation means that the benefits exceed the potential harm (or that the potential harm clearly exceeds the benefits in the case of a negative recommendation), but the quality/applicability of the supporting evidence is not as strong. A Limited recommendation means that there is a lack of compelling evidence that has resulted in an unclear balance between benefits and potential harm. A Consensus recommendation means that expert opinion supports the guideline recommendation although there is no available empirical evidence that meets the inclusion criteria of the guideline's systematic review.

Strength of Recommendations Descriptions

Hyaluronic Acid

Strong evidence supports that there is no benefit to the use of hyaluronic acid in the treatment of glenohumeral joint osteoarthritis.

Strength of Recommendation: Strong ★★★★

Implication: Practitioners should follow a Strong recommendation unless a clear and compelling rationale for an alternative approach is present.

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Prognostic Factors (BMI)

Strong evidence suggests that obese patients with glenohumeral osteoarthritis do not experience an increase in the rate of early postoperative complications.

Strength of Recommendation: Strong ★★★★

Implication: Practitioners should follow a Strong recommendation unless a clear and compelling rationale for an alternative approach is present.

Prognostic Factors (Gender/Sex)

Strong evidence supports that gender/sex is not associated with better or worse postoperative outcomes.

Strength of Recommendation: Strong ★★★★

Implication: Practitioners should follow a Strong recommendation unless a clear and compelling rationale for an alternative approach is present.

Prognostic Factors (Comorbidities)

Strong evidence suggests that patients with glenohumeral joint osteoarthritis who have more comorbidities experience higher rates of early postarthroplasty complications.

Strength of Recommendation: Strong ★★★★

Implication: Practitioners should follow a Strong recommendation unless a clear and compelling rationale for an alternative approach is present.

Total Shoulder Arthroplasty

Strong evidence supports that anatomic total should arthroplasty demonstrates more favorable function and pain relief in the short- to mid-term follow-up when compared with hemiarthroplasty for the treatment of glenohumeral osteoarthritis.

Strength of Recommendation: Strong ★★★★

Implication: Practitioners should follow a Strong recommendation unless a clear and compelling rationale for an alternative approach is present.

Glenoid Implant—Pegged or Keeled

Strong evidence supports that the clinician may use pegged or keeled

glenoid implants in patients with glenohumeral joint osteoarthritis and a well-functioning rotator cuff. Pegged implants demonstrate less radiolucent lines, but the effect on clinical outcomes and survivorship are unclear.

Strength of Recommendation: Strong ★★★★

Implication: Practitioners should follow a Strong recommendation unless a clear and compelling rationale for an alternative approach is present.

Prognostic Factors (Age)

Moderate evidence supports that older age at the time of surgery is associated with lower revision rates.

Strength of Recommendation: Moderate ★★★☆

Implication: Practitioners should generally follow a Moderate recommendation but remain alert to new information and be sensitive to patient preferences.

Prognostic Factors (Smoking)

Moderate evidence suggests that smoking is associated with inferior postoperative outcomes.

Strength of Recommendation: Moderate ★★★☆

Implication: Practitioners should generally follow a Moderate recommendation but remain alert to new information and be sensitive to patient preferences.

Prognostic Factors (Preoperative Function)

Moderate quality evidence suggests that although both higher and lower preoperative functioning patients with glenohumeral joint osteoarthritis will likely experience improvement after arthroplasty, patients with higher preoperative function may experience less functional improvement.

Strength of Recommendation: Moderate ★★★☆

Implication: Practitioners should generally follow a Moderate recommendation but remain alert to new information and be sensitive to patient preferences.

Prognostic Factors (Depression)

Moderate evidence suggests that depression is associated with inferior postoperative outcomes in patients with glenohumeral joint osteoarthritis undergoing arthroplasty.

Strength of Recommendation: Moderate ★★★☆

Implication: Practitioners should generally follow a Moderate recommendation but remain alert to new information and be sensitive to patient preferences.

Glenoid Implant—Metal-Backed Noncemented

Moderate evidence supports that surgeons not use metal-backed noncemented glenoid implants.

Strength of Recommendation: Moderate ★★★☆

Implication: Practitioners should generally follow a Moderate recommendation but remain alert to new information and be sensitive to patient preferences.

Total Shoulder Arthroplasty—Subscapularis Peel, Lesser Tuberosity Osteotomy, or Tenotomy

Moderate quality evidence supports that surgeons can use subscapularis peel, lesser tuberosity osteotomy, or tenotomy when performing shoulder arthroplasty.

Strength of Recommendation: Moderate ★★★☆

Implication: Practitioners should generally follow a Moderate recommendation but remain alert to new information and be sensitive to patient preferences.

Hemiarthroplasty—Stems

Limited evidence supports that clinicians may use stemmed, stemless, or resurfacing prosthesis for patients with glenohumeral joint osteoarthritis undergoing total arthroplasty or hemiarthroplasty.

Strength of Recommendation: Limited ★★☆☆

Implication: Practitioners should feel little constraint in following a recommendation labeled as Limited, exercise clinical judgment, and be alert for emerging evidence that clarifies or helps to determine the balance between benefits and potential harm. Patient preference should have a substantial influencing role.

Preoperative Physical Therapy

In the absence of reliable evidence, it is the opinion of the work group that physical therapy may benefit select patients with glenohumeral joint osteoarthritis.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Postoperative Physical Therapy

In the absence of reliable evidence, it is the opinion of the work group that clinicians may prescribe physical therapy in patients after shoulder arthroplasty.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Injectable Biologics

In the absence of reliable evidence, it is the opinion of the work group that injectable biologics, such as stem cells or platelet-rich plasma, cannot be recommended in the treatment of glenohumeral osteoarthritis.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Alternate Nonsurgical Treatments

In the absence of reliable evidence, the work group cannot recommend for or against the use of the following:

(1) Acupuncture,
(2) Dry needling,
(3) Cannabis,
(4) Cannabidiol (CBD) oil,
(5) Capsaicin,
(6) Shark cartilage,
(7) Glucosamine and chondroitin,
(8) Cupping, and
(9) Transcutaneous Electrical Nerve Stimulation (TENS)

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information as emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Opioid Pain Medication

In the absence of reliable evidence, it is the opinion of the work group that opioids not be prescribed because routine and long-term pain management of glenohumeral osteoarthritis.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Nonprosthetic Surgical Options

In the absence of reliable evidence, it is the opinion of the work group nonprosthetic surgical options may or may not provide short-term benefit for patients with glenohumeral joint osteoarthritis.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Radiographs

In the absence of reliable evidence, it is the opinion of the work group that patients with glenohumeral osteoarthritis undergoing arthroplasty should be imaged with axillary and true AP (Grashey view) radiographs, with imaging performed at the discretion of the clinician.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Cemented Stems

In the absence of reliable evidence, it is the opinion of the work group that either cemented or noncemented stems can be used in the treatment of patients with glenohumeral joint osteoarthritis and a well-functioning rotator cuff.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Anatomic or Revers Total Shoulder Arthroplasty

In the absence of reliable evidence, it is the opinion of the work group that clinicians may use either anatomic TSA or reverse TSA for the treatment of glenohumeral joint osteoarthritis in select patients with excessive glenoid bone loss and/or rotator cuff dysfunction.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Glenoid Implants—Polyethylene-Metal or All-Polyethylene

In the absence of reliable evidence, it is the opinion of the work group that clinicians may use polyethylene-metal hybrid glenoid implants or all-polyethylene implants during TSA for the treatment of glenohumeral joint osteoarthritis.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Bicep Tenodesis and Tenotomy

In the absence of reliable evidence, it is the opinion of the work group that clinicians may consider concomitant biceps tenodesis or tenotomy during shoulder arthroplasty.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Tranexamic Acid

In the absence of reliable evidence, it is the opinion of the work group that utilization of tranexamic acid during shoulder arthroplasty may result in reduced blood loss and reduced risk of blood transfusion.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Supraspinatus Tears

In the absence of reliable evidence, it is the opinion of the work group that for patients with small isolated, repairable supraspinatus tears, clinicians can perform anatomic TSA.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Discharge

In the absence of reliable evidence, it is the opinion of the work group that same-day discharge is an option after shoulder arthroplasty in selected patients.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Cryotherapy

In the absence of reliable evidence, it is the opinion of the work group that either continuous cryotherapy or cold packs can be used after shoulder arthroplasty.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

Multimodal Pain Management

In the absence of reliable evidence, it is the opinion of the work group that multimodal pain management strategies or nonopioid individual modalities can provide added benefit for postoperative pain management after shoulder arthroplasty.

Strength of Recommendation: Consensus ★☆☆☆

Implication: In the absence of reliable evidence, practitioners should remain alert to new information because emerging studies may change this recommendation. Practitioners should weigh this recommendation with their clinical expertise and be sensitive to patient preferences.

References

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