

Managed Care Clinical Corner: Osteoarthritis of the Hip— A Surgical Approach

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CASE

History: A 65-year-old woman with osteoarthritis has progressively worsening bilateral hip pain (right side more painful than left) and decreased exercise capacity. This occurred despite 2 years of conservative treatment with adequate doses and regular use of oral nonsteroidal anti-inflammatory drugs (NSAIDs). Recently, she has needed a cane to walk.

Physical examination: Pain with internal rotation of the hip was greater on the right side. Flexion and extension were full bilaterally. Peripheral pulses were palpable (1+) bilaterally. No neurologic deficit was noted.

X-ray films: Anteroposterior and lateral hip films showed a loss of joint space bilaterally without evidence of fractures.

Clinical course: Right hip replacement was recommended. One unit of autologous blood was banked.

An uneventful right total hip replacement (THR) was performed the day the patient was admitted. After surgery, she was transferred to an unmonitored unit. Sequential support hose were applied and oral warfarin started immediately. The next morning, the patient was able to transfer to a chair and physical therapy was started. She was discharged home on the fourth postoperative day taking warfarin and acetaminophen for pain.

Clinicians' Observations and Issues

This patient is typical of the mature person with osteoarthritis of the hip who requires reconstructive surgery using total joint arthroplasty. Total hip replacement, introduced in the United States in 1970, has revolutionized the specialty of orthopedic surgery

A Word from the Editor

Managed care has brought into even sharper focus the appropriate use of hospital, technological, rehabilitative, and pharmaceutical resources. Outcomes research and cost-effectiveness analysis must be an integral part of clinical problem solving and is included in any mention of "best practice."

In this column, an orthopedic surgeon (Dr. Rothman) offers clinically focused commentary on the case, while Dr. Hudson presents a managed care perspective. I offer a final commentary.

and significantly improved the quality of life of older patients. No operation in the history of medicine has yielded such a generous return to the community for the investment, in terms of patient quality of life, independence, and freedom from pain.

Indications. Appropriate indications for THR include disabling pain, loss of function, lack of response to a reasonable course of nonsurgical treatment, and radiographic evidence of the disease process. These indications are often nonparametric and based on the common sense and judgment of both the patient and the surgeon. X-ray films serve only as a diagnostic marker and are not indicators for the appropriateness of surgical intervention.

In younger patients, THR should be considered only if symptoms are significant, since joint replacement surgery has a finite life span. In elderly patients, lesser degrees of disability are acceptable, since the durability of the joint will be less severely tested. However, if surgery is delayed too long, patients enter a higher risk category and may ultimately be denied the benefits of joint replacement.

In deciding whether a patient is a candidate for THR, clinicians must remember that the definition of elderly is changing. Today, a 50-year-old woman has

a 1 in 3 chance of living to age 100. Thus by most measures this patient would be considered youthful, and surgery should be deferred until the pain is truly disabling. On the other hand, a younger patient must not be arbitrarily denied a functional life and the ability to remain productive and independent. In contrast, a 70-year-old thin, healthy patient might benefit from THR at that age rather than deferring surgery until her 80s, when her incapacity will be greater and her medical risk factors perhaps prohibitive.

Differential Diagnosis. A typical patient with osteoarthritis of the hip has pain in the groin, anterior thigh, and knee. Symptoms may also radiate into the leg, buttock, and lower back. Spinal disorders, including spinal stenosis, neoplasms, and retroperitoneal disease, must be ruled out in patients who report such pain. Pain from osteoarthritis also is frequently confused with that caused by inguinal hernias. Because vascular claudication can produce symptoms similar to those of osteoarthritis of the hip, careful examination of pulses is warranted.

Should Bilateral Surgery Be Considered? For the one out of three patients who have bilateral osteoarthritis of the hip or knee, both the patient and the surgeon must consider simultaneous bilateral surgery. The overall risk levels for simultaneous bilateral hip or knee arthroplasty are equivalent to those for sequential unilateral surgery, in which the operations are performed 3 months or more apart. Patient satisfaction, however, is greater with simultaneous surgery; this approach also allows for more effective rehabilitation.

Patients undergoing simultaneous bilateral surgery should have few medical risk factors and be thin and physiologically youthful. Fragile or obese patients and those with substantial medical risk factors are not candidates for bilateral surgery.

Blood Conservation. Various ways of conserving blood during primary THR have been studied, including autologous blood banking before surgery, Cell Savers, and drains that allow blood from the surgical wound to be reprocessed. Our own data indicate that in unilateral primary THR neither Cell Savers nor drains are routinely indicated, except perhaps in patients, such as Jehovah's Witnesses, whose religion prohibits the use of banked or autologous blood. Autologous blood banking is routinely used in our institution, with three units of blood banked for younger patients and two units for older patients. This practice has almost entirely obviated the need for banked blood and its attendant risks of transfusion reactions and transmission of viral disease, such as hepatitis and acquired immunodeficiency syndrome. Even so, some managed care organizations do not yet

cover the cost of autologous blood, a seemingly illogical position.

Discharge Timing. Despite the universal rush toward early discharge, this practice has not proved to be an effective means of containing costs among patients who have undergone THR. In a recent study, researchers found that patients discharged before the fifth postoperative day were more likely to be transferred to a rehabilitation hospital while those who were hospitalized longer usually could be discharged home. Thus investing in a longer hospital stay may be a more cost-efficient strategy. Good data on the safety and efficacy of early discharge before the fifth postoperative day are not yet available.

Even if discharged later, patients who lack a home support system often must be discharged to a skilled nursing facility or a rehabilitation hospital. However, if a spouse or child can care for the patient, he or she can be discharged directly home and take advantage of home physical therapy, home nursing, and family support to complete the recovery process. Discharge to home is a safe and cost-effective practice.

Future Strategies. Current strategies that show promise for improving the quality of postoperative support and safety include a strong preoperative educational program, careful preoperative planning for postoperative care, a well-organized program for prophylaxis of thromboembolic complications, and adequate support at home for postoperative patients, including home health nurses or aides and home physical therapy.

Managed Care Perspective

The use of NSAIDs as the primary medical treatment for patients such as the woman described in our case is consistent with national trends. However, because of concerns about the possible deleterious effects of NSAIDs on articular cartilage metabolism and the greater risk of toxicity from prolonged NSAID therapy in elderly patients with osteoarthritis, some clinicians question the lead role of NSAIDs in managing osteoarthritis.¹ In a survey of practitioners across the United States, we² found that board-certified, community-based rheumatologists follow a uniform approach to the medical management of osteoarthritis of the hip, beginning with acetaminophen and followed by non-aspirin NSAIDs and nonacetylated salicylates, with aspirin rarely used. In a regional survey of 207 family practitioners and internists in Maryland and Virginia conducted in 1992, we found that 99% prescribed NSAIDs frequently or always for patients with osteoarthritis of the hip, 12% prescribed steroidal agents frequently, and 7% always prescribed steroidal

agents (Kristin Kjerulf, PhD, and James I. Hudson, MD, unpublished data). In contrast, among 439 orthopedic surgeons in Maryland and Virginia, 98% prescribed NSAIDs frequently or always, only 6% prescribed steroidal agents frequently, and only 1% always prescribed steroidal drugs (Kristin Kjerulf, PhD, and James I. Hudson, MD, unpublished data). These preferences are consistent with recently published guidelines³ prepared for the American College of Rheumatology recommending acetaminophen as the initial drug of choice. If patients do not respond to acetaminophen, an NSAID is indicated.

The role of ambulation aids (eg, canes), weight reduction, physical therapy, and therapeutic and aerobic exercises in treating osteoarthritis of the hip have been reviewed by Minor⁴ and Puett and Griffin.⁵ In our national and regional surveys, we found that 67% of rheumatologists,² 69% of family practitioners and internists, and 91% of orthopedic surgeons (Kristin Kjerulf, PhD, and J. Hudson, unpublished data) frequently or always recommended the use of a cane for ambulation.

The 1991 Practice Guidelines and Recommendations for THR from the Minnesota Clinical Comparison and Assessment Program (MCCAP)⁶ are silent on the degree of joint pain and disability and degree of radiographic changes necessary to justify surgery. Most orthopedic surgeons base their decision to perform THR in patients with osteoarthritis of the hip largely on patients' reports of pain and disability and to a much lesser extent on radiographic signs.^{7,8}

In conjunction with our Hip Fracture and Osteoarthritis Patient Outcomes Research Team, we sought to assess the utility of radiographic findings in deciding whether to perform THR in patients with osteoarthritis of the hip. We compared the radiographic features and global severity of hip osteoarthritis and the severity of radiographic osteoarthritis with the level of pain and disability reported by 95 consecutive patients over age 65 undergoing THR in one of 12 Baltimore area hospitals between 1991 and 1993. Only 8 patients (8.4%) had mild or no signs of osteoarthritis in the hip to be replaced, and 4 of these patients had had their opposite hip replaced previously. We concluded that radiographic changes of moderate to severe hip osteoarthritis are associated with clinical findings and the need to perform THR in most patients. Patients who have had a prior hip replacement are more likely to have a contralateral replacement done earlier, before radiographic signs are evident.⁹

The 1986 National Institutes of Health Consensus Conference on management of thromboembolic dis-

ease strongly recommended the use of effective prophylaxis (eg, dextran, adjusted-dose heparin, or low-dose warfarin) in patients undergoing hip surgery. Oster et al,¹⁰ from a decision model based on an extensive review of the literature through 1986, found that several methods of prophylaxis for postoperative venous thromboembolism were cost-effective in patients undergoing major orthopedic surgery. These methods included warfarin, heparin, intermittent pneumatic compression, graduated compression stockings, heparin plus sodium dihydroergotamine mesylate, and heparin plus compression stockings. Unfractionated heparin and warfarin are the most commonly used prophylactic agents today, although both are associated with serious bleeding complications.¹¹ A multicenter clinical trial¹² comparing the prophylactic use of enoxaparin, a low-molecular-weight heparin, with that of unfractionated heparin found that enoxaparin was more effective than and as safe as unfractionated heparin in patients undergoing hip replacement. Other studies^{13,14} have shown that low-dose warfarin after orthopedic surgery is equivalent in efficacy and safety to higher-dose warfarin.

In a survey of 428 orthopedic surgeons in Maryland and Virginia (Kristin Kjerulf, PhD, and James I. Hudson, MD, unpublished data), 90% strongly agreed on the use of prophylactic anticoagulants. Of those who agreed, 67% used warfarin as their drug of choice, 17% listed low-dose heparin as their primary choice, and 16% cited aspirin or another drug as their first choice. Sixty percent of the surgeons prescribed anticoagulant therapy postoperatively, and 60% also routinely used pneumatic antiembolism stockings.

In the case we described, the patient was discharged home on the fourth postoperative day. Among 330 patients older than age 65 who underwent THR for hip osteoarthritis in 12 Baltimore region hospitals in 1991 or 1992, we found that the mean length of stay was 9.3 days.

Current means of preventing infection and thromboembolism after THR have considerably reduced the complication rate associated with this procedure. Side effects associated with prophylactic regimens also have decreased. Thus few problems arise when patients are discharged to home. However, as more elderly patients undergo THR, a 4-day stay appears to be the minimum acceptable limit. Discharge before the fourth postoperative day places an unacceptable burden of responsibility on the home caregiver.

Afterword

Outcome studies, such as those of the Hip Fracture and Osteoarthritis Patient Outcomes Research Team,

help to identify the best means of medically and surgically treating osteoarthritis. With the influence of managed care, clinicians must determine the optimal treatment so that quality of care is preserved while cost-effective medicine is practiced. Both Drs. Rothman and Hudson independently agree on the optimal management of this patient, stressing a few key points.

First, initial treatment for osteoarthritis should be medical therapy with NSAIDs and the use of assistive walking devices.

Second, radiographic evidence of the disease process is necessary to justify THR, with the possible exception of patients who have undergone prior contralateral THR. Patients also should be evaluated for any neurologic deficit.

Third, patient satisfaction and effective rehabilitation are greater with simultaneous bilateral THR. Undoubtedly, this practice would be cost-effective as well.

Fourth, the optimal length of stay has yet to be determined. The overall duration of care will be a variable mix of preoperative staging, acute inpatient hospitalization, inpatient physical therapy, and home care.

Lastly, perioperative considerations, such as autologous blood banking, embolic prophylaxis, and rehabilitation, are critical for ensuring the best possible outcomes for patients with osteoarthritis of the hip undergoing THR.

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To Our Readers

If you would like to submit a case or if there is a condition you would like to see covered in a future column, please send your suggestions to:

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