

Adult Hip and Knee Reconstruction: Review Questions

Brian J. McGrory, MD

Michael W. Becker, MD

QUESTIONS

Choose the single best answer for each question.

- The most common neural injury at the time of primary total hip arthroplasty is:**
 - Femoral nerve
 - Obturator nerve
 - Superior gluteal nerve
 - Sciatic (peroneal division)
 - Sciatic (tibial division)
- A 28-year-old construction worker who had a hip fusion at age 14 years for recurrent sepsis presents with significant ipsilateral knee pain. Spine, knee, and contralateral hip examination and radiographs are normal. The fusion is adducted 20 degrees, flexed 20 degrees, and in 5 degrees of external rotation. Which of the following is the best treatment option for this patient?**
 - Amputation
 - Fusion take-down and total hip replacement
 - Fusion take-down and resection arthroplasty
 - Osteotomy and repositioning in neutral abduction
 - Osteotomy and repositioning in 10 degrees of abduction
- Mid-term results (10 to 15 years) of noncemented total hip arthroplasty demonstrate that the most commonly encountered problem is:**
 - Thigh pain
 - Infection
 - Osteolysis
 - Polyethylene wear-through
 - Aseptic loosening
- In contemporary total knee arthroplasty, all of the following can lead to patellofemoral maltracking EXCEPT :**
 - Excessive lateral facet resection
 - Tibial component internal rotation
 - Medial positioning of the patellar component on the patella
 - Medial shift of the femoral component
 - Internal rotation of the femoral component
- The C-reactive protein (CRP) blood test is useful in evaluating cases of infection after total joint replacement. All of the following statements regarding CRP are true EXCEPT :**
 - CRP levels return to normal 2 to 4 weeks after total joint replacement surgery.
 - CRP levels return to normal more quickly and increase faster than the erythrocyte sedimentation rate (ESR).
 - CRP levels can be normal in some infections.
 - CRP levels return to normal more quickly after total knee arthroplasty than after total hip arthroplasty.
 - CRP tests are usually no more expensive than ESR.
- The goal of prophylaxis in joint replacement patients is to prevent deep vein thrombosis (DVT) and its complications, pulmonary embolism and postphlebotic syndrome. All of the following have been shown to be efficacious in DVT prophylaxis in surgery patients EXCEPT :**
 - Early mobilization
 - Foot pump
 - Elastic stockings
 - External pneumatic compression
 - Warfarin

(turn page for answers)

Dr. McGrory is Clinical Associate Professor and Dr. Becker is Attending Surgeon, Department of Orthopaedic Surgery and Rehabilitation, University of Vermont School of Medicine, Burlington, VT. Drs. McGrory and Becker are Co-Directors of the Maine Joint Replacement Institute, Portland, ME.

EXPLANATION OF ANSWERS

1. **(D) Sciatic (peroneal division).** The incidence of nerve palsy following primary total hip replacement is reported to be 0% to 3%. The peroneal division of the sciatic nerve (with or without the tibial division) accounts for most of these lesions (0.5% to 2%). Compression, traction, and ischemia, alone or in combination, may cause neural injury. The fibers of the sciatic nerve are spatially oriented as the nerve passes through the sciatic notch. The peroneal division is located more laterally and its fibers are more superficial than those of the tibial division. Therefore, the peroneal division is more susceptible to injury.
2. **(D) Osteotomy and repositioning in neutral abduction.** Malposition of a poorly functioning arthrodesis is best treated by corrective osteotomy, rather than by take-down arthroplasty. Several studies have proven the long-term success of arthrodesis; the optimum position is 20 degrees flexion in the sagittal plane, neutral or slight adduction, and neutral or slight external rotation. In a young laborer, a good 20-year result is more likely to emerge after arthrodesis than arthroplasty. Arthroplasty after previous fusion has a significant incidence of complications, including dislocation, limp caused by muscle insufficiency, stiffness, and heterotopic ossification. In this case, history of sepsis at a young age also indicates osteotomy because muscle loss and recurrent sepsis are possible. The presence of knee pain without evidence of arthritis, in conjunction with a normal low back examination, is further indication for osteotomy.
3. **(C) Osteolysis.** Osteolysis is the most commonly encountered problem 10 years or longer after noncemented total hip arthroplasty. Thigh pain is reported in 4% to 8% of cases. Incidence of infection in noncemented total hip arthroplasty is no greater than in cemented or hybrid total hip replacement, and infection is primarily a perioperative problem. Polyethylene wear-through can occur (particularly with thin polyethylene and large femoral heads), as can aseptic loosening; however, osteolysis is encountered more frequently.
4. **(C) Medial positioning of the patellar component on the patella.** Patellofemoral maltracking is one of the most common problems after contemporary total knee arthroplasty. Asymmetric patellar resection (typically, excessive lateral facet resection) and lateral positioning of the patellar component on the patellar remnant cause maltracking. In addition, any rotatory or medial-lateral malalignment of the tibial or femoral components that allows lateral subluxation of the patella (eg, tibial or femoral component internal rotation, medial shift of the tibial or femoral component) can lead to maltracking complications.
5. **(D) CRP levels return to normal more quickly after total knee arthroplasty than after total hip arthroplasty (FALSE).** CRP levels return to normal more quickly, increase faster, and are no more expensive than the ESR. CRP levels can be normal in some infections; however, this finding is quite rare. Unlike ESR, which can remain elevated for up to 1 year after total joint arthroplasty, CRP levels return to normal 2 to 4 weeks after total joint replacement surgery. CRP levels return to normal equally quickly after total hip and total knee arthroplasty, but peak levels are significantly greater after total knee replacement.
6. **(A) Early mobilization.** No controlled study to date has evaluated early mobilization as a specific DVT prophylaxis regimen. Comparisons with historic control groups do not suggest that early mobilization alone has had a major influence on the venous thromboembolic disease rate in joint replacement patients. The use of a foot pump, elastic stockings, external pneumatic compression, and warfarin have all been proven effective in decreasing the rate of DVT in postoperative patients.

Copyright 2000 by Turner White Communications Inc., Wayne, PA. All rights reserved.

ORTHOPAEDIC SURGERY

A current list of certification and recertification exam dates and registration information is maintained on the American Board of Orthopaedic Surgery Web site, at <http://www.abos.org>