Hip Fractures in the Elderly: Review Questions

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QUESTIONS

Choose the single best answer for each question.

1. **An 83-year-old ambulatory woman has a simple fall at home. She cannot walk or bear weight on her right lower extremity and is immediately brought by ambulance to the emergency department. Radiographs reveal that the patient has a displaced right femoral neck fracture, without other radiographic findings. Compared with a similar patient with a displaced intertrochanteric hip fracture, what is this patient at greater risk for?**
   (A) Decubitus ulcer
   (B) Deep vein thrombosis (DVT)
   (C) Fracture malunion
   (D) Osteonecrosis
   (E) Urinary tract infection

2. **The above patient, who has had no prior history of right hip complaints, is now admitted to the hospital following orthopaedic evaluation and medical consultation. Following medical stabilization, what is the optimal treatment for her displaced femoral neck fracture?**
   (A) Closed reduction and bed rest
   (B) Hemiarthroplasty
   (C) Nonsurgical management
   (D) Open reduction and internal fixation
   (E) Traction

3. **A 73-year-old ambulatory man has a simple fall at home. He cannot walk or bear weight on his left lower extremity and is immediately brought by ambulance to the emergency department. Radiographs reveal that the patient has a displaced intertrochanteric hip fracture, without other radiographic findings. Following medical stabilization, what is the optimal treatment for this patient's displaced intertrochanteric hip fracture?**
   (A) Closed reduction and bed rest
   (B) Hemiarthroplasty
   (C) Nonsurgical management
   (D) Open reduction and internal fixation
   (E) Traction

4. **Compared with geriatric patients with hip fracture who are treated surgically the first day after hospitalization, what is the approximate increase in the 1-year mortality rate for geriatric patients with hip fracture who are treated surgically more than 2 calendar days after hospitalization?**
   (A) 20%
   (B) 40%
   (C) 60%
   (D) 80%
   (E) 100%

5. **Patients who sustain a hip fracture and present to the hospital without delay have a 6% risk of DVT. What is the risk of DVT for patients who have a more than 2-day delay from the time of hip fracture to hospital presentation?**
   (A) 15%
   (B) 35%
   (C) 55%
   (D) 75%
   (E) 95%

(turn page for answers)

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ANSWERS AND EXPLANATIONS

1. **(D) Osteonecrosis.** A displaced femoral neck fracture will disrupt the blood supply to the femoral head, while an intertrochanteric hip fracture will not have the same affect on the vascular supply to the femoral head. Both fractures can be associated with DVT, decubitus ulcer, and urinary tract infection. Fracture malunion can result from both fracture patterns when treated nonoperatively.
2. **(B) Hemiarthroplasty.** The displaced nature of the fracture will disrupt the blood supply to the femoral head, and, therefore, acceptable healing is not anticipated. Nonsurgical management in a functioning patient who was able to ambulate prior to the fracture can result in fracture malunion or nonunion, in addition to an unacceptable increase in morbidity and mortality. Nonsurgical management is reserved for nonambulators with minimal pain. Traction does not provide definitive care nor does it significantly contribute to pain control preoperatively. Closed reduction does not provide definitive care, and bed rest will result in an unacceptable increase in morbidity and mortality in patients who were previously functional. In this type of patient, open reduction and internal fixation is the treatment option for displaced intertrochanteric hip fractures, not displaced femoral neck fractures. Open reduction and internal fixation can be considered in young adult patients in an effort to preserve the anatomy.
3. **(D) Open reduction and internal fixation.** Reduction of the fracture to achieve anatomic alignment along with internal fixation with a sliding screw and side plate construct to maintain the alignment during the healing phase is the best course of treatment. Nonsurgical management, traction, and closed reduction with bed rest all would leave the patient in pain that would restrict mobility and increase morbidity and mortality. As opposed to the patient in question 2, hemiarthroplasty is not indicated for an intertrochanteric hip fracture in this presentation.
4. **(E) 100%.** Surgical delay of more than 2 calendar days after hospitalization approximately doubles the risk of death within 1 year of surgery for hip fractures.[1] However, when medical circumstances do not allow this time course to surgery and the surgery is not an emergency (eg, vascular compromise of the extremity), it is more important to ensure the patient has a complete medical evaluation and has medical problems corrected before proceeding with surgery. Once the patient is stable, surgery should proceed on an urgent basis.
5. **(C) 55%.** There is a significantly higher risk for DVT upon presentation for medical care if there is a delay of more than 2 days.[2] Therefore, an evaluation of DVT preoperatively should be considered in patients with delayed presentation.

REFERENCES

1. Zuckerman JD, Skovron ML, Koval KJ, et al. Postoperative complications and mortality associated with operative delay in older patients who have a fracture of the hip. J Bone Joint Surg Am 1995;77:1551–6.
2. Hefley FG Jr, Nelson CL, Puskarich-May CL. Effect of delayed admission to the hospital on the preoperative prevalence of deep-vein thrombosis associated with fractures about the hip. J Bone Joint Surg Am 1996;78:581–3.

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