Hip fractures are associated with significant morbidity and mortality in the geriatric population. Depression and a decline in functional mobility are seen in over 20% of older adults who sustain a hip fracture. Between 18-33% will die within one year.

Key aspects of these post-fracture complications relate to in-hospital management and post-discharge care. Central among pre-operative considerations is assuring early surgical repair (within 48 hours and ideally within 24 hours after the fracture). Studies show that deconditioning and medical complications are less likely to occur with early repair and restoration of mobility.

Pre-Operative Management

In the pre-operative phase, emphasis should be placed on managing medical co-morbidities, recognition and prevention of geriatric syndromes, and clarification of advance directives. But, as noted, it is crucial not to delay hip repair surgery for these considerations because delayed surgery increases the risk of complications.

Managing Medical Co-Morbidities includes assessment of cardiac and renal risk, and instituting prophylactic anticoagulation.

Cardiac risk (of peri-operative ischemia or myocardial infarction [MI]) is increased in patients who have elevated blood pressure (>180 mmHg systolic or >110 mmHg diastolic), elevated troponin levels, and/or decompensated heart failure. In the absence of these conditions, additional pre-operative testing is unlikely to change management and the patient will suffer from the delay in surgery. On the other hand, cardiology consultation is recommended if a patient has decompensated heart failure, acute coronary syndrome, severe valvular disease, or a significant arrhythmia. Guidelines on pre-operative evaluation are available from the American Heart Association (see resource list on next page).

The Revised Cardiac Risk Index lists predictors of cardiac complications of surgery (Table 1). The use of beta blockers in patients with more than one of these risk factors has been shown to decrease the rate of cardiac death, nonfatal MI, and nonfatal cardiac arrest in some studies. If used, beta blockers should be started before surgery at a low dose, titrated to a heart rate of 60, and continued for 30 days after surgery.

### Table 1. High Risk Factors Warranting Consideration of Beta Blocker Therapy

<table>
<thead>
<tr>
<th>High Risk Factor</th>
<th>Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of coronary artery disease</td>
<td>Diabetes on insulin</td>
</tr>
<tr>
<td>History of heart failure or stroke</td>
<td>Creatinine &gt;2.0 mg/dL</td>
</tr>
</tbody>
</table>

Renal risk. Patients with hip fracture commonly present with dehydration due to blood loss from the fracture, lack of fluid intake, or diuretic medications. Dehydration can increase the risk for postoperative delirium. Fluid replacement, to include blood transfusion if hemoglobin is less than 10 gm/dL preoperatively, requires a balance between restoring hydration and causing fluid overload.

Anticoagulation. There is a high rate of venous thromboembolism (VTE) in patients who have hip fractures. The risk begins at the time of the fracture and extends beyond 30 days postoperatively. Because of this, the American College of Chest Physicians has issued recommendations for prophylactic anticoagulation with hip fracture repair. The Guidelines are found at [http://chestjournal.chestpubs.org/content/133/6_suppl/71S.full](http://chestjournal.chestpubs.org/content/133/6_suppl/71S.full) on page 81s. The American College of Chest Physicians recommends against aspirin for VTE prophylaxis. In fact, medications with anti-platelet activity, like aspirin, clopidogrel, and non-steroidal anti-inflammatory drugs, along with oral anticoagulants like warfarin, should generally be stopped in patients with hip fracture.

### TIPS FOR DEALING WITH PATIENTS WHO HAVE A HIP FRACTURE

- Seek to have surgery performed within 48 hours, and ideally within 24 hours.
- Assess medical conditions and hydration before surgery.
- Assess for and prevent delirium throughout the patient’s treatment.
- Get the patient up and out of bed on the first post-operative day. Early mobilization aids in recovery.
- Treat osteoporosis with calcium, vitamin D, and (unless contraindicated) bisphosphonates.
- Continue rehabilitation for at least 4-6 weeks after discharge.
Recognition of Geriatric Syndromes. Geriatric syndromes are a group of medical problems, commonly found in elderly individuals, that impair functional recovery and contribute to delirium and morbidity (Table 2). These syndromes, which include delirium, pressure ulcers, malnutrition, and polypharmacy, need to be addressed and managed throughout the hospitalization. Delirium can also be induced by pain, so careful attention should be given to pain control both before and after hip repair surgery.

Post-Operative Management
Post-operative management of the geriatric patient with a hip fracture stresses early mobility, prevention and management of delirium and pain, while addressing osteoporosis and post-discharge rehabilitation. Mobilization of the patient on the first post-operative day has been shown to decrease the incidence of delirium, VTE, and pneumonia. Eliminating tethers (urinary catheters, IVs, and drains) helps to encourage mobility.

Post-Discharge Care
Osteoporosis. Low-impact hip fractures are, by definition, due to the osteoporosis. All patients with these fractures need treatment with bisphosphonates, calcium (1,200 mg daily), and vitamin D (800-1000 IU daily). Start calcium and vitamin D while in the hospital. There is no clear recommendation about when to start bisphosphonates following a hip fracture, but in the absence of contraindications, therapy can begin as early as 2 weeks after surgery (but always within 6 months). Men with osteoporosis also require an evaluation to determine the cause.

Rehabilitation. Involve social workers early to assess post-discharge needs to support safety and maximize independent function. Early physical and occupational therapy are essential, with the therapy setting (home, outpatient, institutional) dependent on the patient’s functional loss, ability to participate in therapy, and medical status. Therapy for 4-6 weeks after discharge is typical. Schedule a follow-up office visit within 2-3 weeks to assess progress. Emphasize the importance of fall prevention through home safety and exercise, and if not already started, begin bisphosphonate therapy.

Advance Directives. Communication with the patient and family or caregivers helps to establish a clear picture of the patient’s wishes should an adverse event occur. The existence of a prior “do not resuscitate” (DNR) sometimes causes confusion when patients are about to undergo surgery. A DNR order should be discussed with the patient if possible, and with family and caregivers, but it is not a reason to withhold hip surgery, which results in substantial pain relief.

Table 2. Geriatric Syndromes Affecting Hip Fracture Outcomes

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delirium</td>
<td>Develops in up to 60% following hip surgery. Portends poor recovery. May lead to death or institutionalization.</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>Predisposes to infection and impedes recovery.</td>
</tr>
<tr>
<td>Polypharmacy</td>
<td>Inappropriate medications can precipitate delirium.</td>
</tr>
<tr>
<td>Pressure ulcers</td>
<td>Prevented by early mobilization.</td>
</tr>
</tbody>
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优先级表：在骨科老年患者管理中的优先事项

<table>
<thead>
<tr>
<th>阶段</th>
<th>术前（PRE OPERATIVE）</th>
<th>术后（POST OPERATIVE）</th>
<th>术后出院（POST DISCHARGE）</th>
</tr>
</thead>
<tbody>
<tr>
<td>评估和稳定合并症</td>
<td>早期活动性</td>
<td>治疗骨质疏松症</td>
<td></td>
</tr>
<tr>
<td>重新补液；消除非必要药物</td>
<td>预防失能和管理疼痛</td>
<td>继续康复治疗后出院</td>
<td></td>
</tr>
<tr>
<td>提高先进指示</td>
<td>移除所有捆绑/限制/导管</td>
<td>锻炼和预防跌倒</td>
<td></td>
</tr>
</tbody>
</table>

VTE 预防性治疗

参考资料和资源

http://content.onlinejacc.org/cgi/content/full/j.jacc.2009.07.010#SEC11.2.1

http://chestjournal.chestpubs.org/content/133/6_suppl/71S.full


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老年人的综合健康问题

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