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Medical Diagnosis/Disease: Total Hip Arthroplasty (THA)

NCLEX IV (8): Physiological Integrity/Physiological Adaptation

Anatomy and Physiology

Normal Structures

The hip joint is a ball-and-socket synovial joint supported by many muscles and ligaments that play a vital role in every day function. It is made up by the pelvis (hip bone) and the femur (thigh bone). It's responsible for not only weight-bearing, but carrying out our day-to-day functions and a range of mobility (flexion, extension, adduction, abduction medial/lateral rotation).

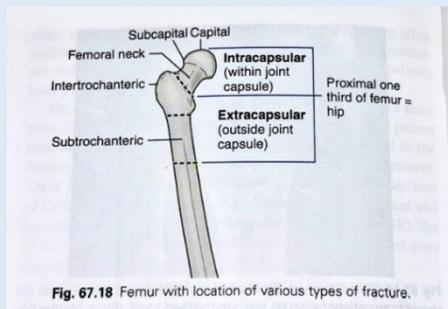
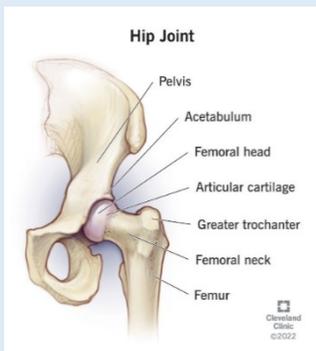
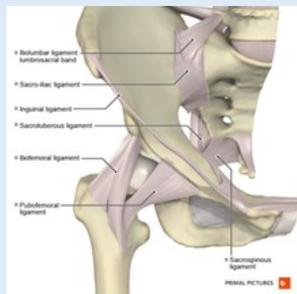
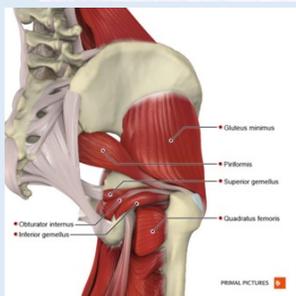


Fig. 67.18 Femur with location of various types of fracture.



Pathophysiology of Disease

A fracture refers to a disruption or break in the continuity of bone. Fractures can be a result of cancer/osteoporosis, but most come from traumatic injuries.

An individual may experience immediate pain, decreased function, and inability to weight bear or use the affected leg → may see an individual protect/guard their lower extremity against movement.

Within the hip, fractures are considered to take place in the proximal upper 1/3 of the femur, which comes together with the pelvic bone to form the synovial hip joint.

These are the most common fractures in older adults, with 95% resulting from a fall and compromising/damaging the bone.

Intracapsular fractures: (known as fragility fxs) are often associated with minor trauma and osteoporosis → leads to increased bone fragility)

- **Capital** (head of the femur)
- **Subcapital** (just below the head of the femur)
- **Transcervical** (femoral neck fx)

Extracapsular fractures: happen outside the joint capsule; often associated by direct severe trauma & a fall

- **Intertrochanteric** (region btwn. greater and lesser trochanter)
- **Subtrochanteric** (below the lesser trochanter)

NCLEX IV (7): Reduction of Risk

Anticipated Diagnostics

Labs

- CBC with diff
- CMP
- Vitamin D [assesses calcium levels in blood]
- Calcium [PTH function and calcium metabolism]
- Alkaline phosphate [detection of this enzyme may be indicative of bone disorder]
- Alpha defensive test [detects periprosthetic joint infection]
- Bone turnover markers [tests N-telopeptide, C-telopeptide, N-terminal propeptide of type I procollagen, Osteocalcin, Pyridium, and Bone-specific alkaline phosphatase → bone density test to determine bone fracture risk]

Additional Diagnostics

- H&P Assessment
- Bone scan [helps evaluate unexplained trauma/pain to a specific area; suspects abnormalities]
- Bone X-ray
- DEXA Scan [determines bone mineral content & density; diagnoses osteoporosis]
- Arthrocentesis with synovial fluid analysis [establishes dx of jt infection, arthritis, synovitis, or neoplasms in joint]
- CT Scan [evaluates swelling, pain, trauma, mass, infection, or questionable fracture]
- MRI [evaluates jt. Disorders, fractures, ligaments, tendons, cartilage, osteonecrosis, bone marrow disorders, bone/soft tissue tumors, inflammatory changes, edema, and avascular necrosis]
- Rheumatoid factor [determines rheumatoid arthritis]

NCLEX II (3): Health Promotion and Maintenance

Contributing Risk Factors

Patients at risk: those with osteopenia (low bone density) or osteoporosis (progressive chronic metabolic bone disease; marked by low bone mass & deterioration of bone tissue), altered center of gravity/inability to correct a postural imbalance, decreased fat/muscle (tissue shock absorbers), reduced skeletal strength

Risk for falls will increase patient risk, including those with: gait/balance problems, altered vision/hearing, slowed reflexes, orthostatic hypotension, and certain medication use

Signs and Symptoms

If an individual has sustained an injury, has history of arthritis, or any other bone disease. They may have an unsteady gait/balance, may experience pain in their hip when walking/sitting/performing ADLs, stiffness or limited ROM, and potential use of walking aids (walker, cane, crutches etc).

NCLEX IV (7): Reduction of Risk

Possible Therapeutic Procedures

Non-surgical

-Physical/occupational therapy
-Use of walking aid (walker, cane, gait belt w/assistance, crutches)

Surgical

-Actual surgery of hip by replacing hip joint with a prosthetic (total hip arthroplasty)

Prevention of Complications

(What are some potential complications associated with this disease process)
-May have a risk for infection post operatively, blood clotting (DVT) due to immobilization/limited movement, dislocation of the joint, nerve damage, chronic stiffness/pain, or rejection to prosthetic/metal that is replacing the joint

NCLEX IV (6): Pharmacological and Parenteral Therapies

Anticipated Medication Management

-Pain medication
-Supplements for Calcium and Vitamin D for those with osteopenia/osteoporosis. May have extra supplementation of bisphosphonate to decrease bone loss & increase bone density

NCLEX IV (5): Basic Care and Comfort

Non-Pharmacologic Care Measures

-Emphasis on repositioning (with movement precautions and adequate supportive equipment), adequate nutrition, and symptom management (ice pack to alleviate pain)
-Monitor pain, infection, and for a VTE (venous thromboembolism)

NCLEX III (4): Psychosocial/Holistic Care Needs

What stressors might a patient with this diagnosis be experiencing?

-Patients may be afraid that they will not be able to walk again or take care of themselves
-Patients may have a fear of falling, or having an injury to another body part/other hip
-Patients may not know how to modify things around their home to adjust post-operatively

Client/Family Education

NCLEX I (1): Safe and Effective Care Environment

List 3 potential teaching topics/areas

- Inform patient about positions and activities that may increase dislocation risk → (> 90 degrees of flexion, adduction across midline, and internal rotation of the hip). Inform pt that many ADLs may reproduce these positions, so they must be cautious
- Patient may have to modify how they sit → chair modifications with straight back and flat surface, and have elevated toilet seats when using the bathroom
- Inform patient (who is on anticoagulants) to report signs of bleeding to Health care provider

Multidisciplinary Team Involvement

(Which other disciplines do you expect to share in the care of this patient)
Physical and Occupational therapy, health care provider, surgeon, radiology/imaging team, case management, pharmacy, psychology (if needed)