Nursing Management: Musculoskeletal Trauma and Orthopedic Surgery

By: Aun Lauriz E. Macuja
SAC_SN4
• The most common cause of musculoskeletal injuries is a traumatic event resulting in fracture, dislocation, and associated soft tissue injuries.

• Nurses have an important role in public education about the basic principles of safety and accident prevention.
SOFT-TISSUE INJURIES

✓ A **sprain** is an injury to tendinoligamentous structures surrounding a joint, usually caused by wrenching or twisting motion.

✓ A **strain** is an excessive stretching of a muscle and its fascial sheath. It often involves the tendon.
• Symptoms of sprains and strains are similar and include pain, edema, decrease in function, and contusion.

• Mild sprains and strains are usually self-limiting, with full function returning within 3 to 6 weeks.

• Severe strains may require surgical suturing of muscle and surrounding fascia.

• Stretching and warm-up prior to exercising and before vigorous activity significantly reduces sprains and strains.
REST

ICE

COMPRESSION

ELEVATION

Overlap the Bandage

Make Figure Eight Turns

Circle the Calf
DISLOCATION

- Dislocation is a severe injury of the ligamentous structures that surround a joint.

- The most obvious sign is DEFORMITY, also local pain, tenderness, loss of function of injured part, and swelling of soft tissues in joint region.

- Requires prompt attention with the dislocated joint first realigned in its original anatomic position.

- Extremity then is immobilized by bracing, taping, or using a sling to allow torn ligaments and tissue time to heal.
SUBLUXATION

• Subluxation is a partial or incomplete displacement of the joint surface.

• Manifestations are similar to a dislocation but are less severe. Treatment is similar to a dislocation, but it may require less healing time.

• The nursing care is directed toward pain relief, support and protection of injured joint.
REPETITIVE STRAIN INJURY

• Repetitive strain injury (RSI) is a cumulative traumatic disorder resulting from prolonged, forceful, or awkward movements.

• It can be prevented through education and ergonomics.
• Treatment includes identifying the precipitating activity, modification of activity, pain management with heat/cold application, drugs, rest, physical therapy for strengthening and conditioning, and lifestyle changes.
CARPAL TUNNEL SYNDROME

• Carpal tunnel syndrome (CTS) is caused by compression of the median nerve, which enters the hand through the narrow confines of the carpal tunnel.

• It is often caused by pressure from trauma or edema caused by inflammation of tendon, rheumatoid arthritis, or soft tissue masses.

• Signs are weakness (especially in thumb), burning pain, and numbness.

• Holding the wrists for 60 seconds produces tingling and numbness over the distribution of the median nerve, a positive Phalen’s test.

• Prevention involves educating employees and employers to identify risk factors.
Early symptoms usually relieved by stopping the aggravating movement and by placing hand and wrist at rest by immobilizing them in a hand splint.

Injection of a corticosteroid drug directly into carpal tunnel may provide some relief.
Rotator cuff injury may occur gradually from aging, repetitive stress, or injury to the shoulder while falling.

Manifestations include shoulder weakness and pain and decreased range of motion.

Conservative treatment involves rest, ice and heat, NSAIDs, corticosteroid injections into joint, and physical therapy.

Surgery may be done with complete tear or no improvement with conservative therapy.
MENISCUS INJURIES

• Meniscus injuries are associated with ligament sprains that commonly occur in athletes.

• Pain is elicited by flexion, internal rotation, and then knee extension. Surgery may be indicated for a torn meniscus.

• Proper stretching may make the patient less prone to meniscal injury when a fall or twisting occurs.
Bursitis results from repeated or excessive trauma or friction, rheumatoid arthritis, or infection.

Manifestations are warmth, pain, swelling, and limited ROM in the affected part.

Rest is often the only treatment needed for bursitis.
FRACTURE

• Fracture is a disruption or break in the continuity of the bone structure.

• Traumatic injuries account for the majority of fractures. It often described according to: 1) type, 2) communication or non-communication with the external environment, and 3) anatomic location.

• Signs include immediate localized pain, decreased function, and inability to bear weight or use affected part. Obvious bone deformity may/may not be present.

• It require nursing assessments of the peripheral vasculature (color, temperature, capillary refill, peripheral pulses, and edema) and neurologic systems (sensation, motor function, and pain).

• Treatment goals are anatomic realignment of bone fragments, immobilization to maintain realignment, and restoration of function.
• Lower extremity injuries are often immobilized by casts, dressings, or splints/immobilizers.

• The majority of fractures heal without complications, which include bone infection, a vascular necrosis, compartment syndrome, venous thrombosis, fat embolism, and shock.

• Nursing care involves comfort measures for pain, maintenance of nutrition, and prevention of complications associated with immobility.

• A Colles’ fracture is a fracture of the distal radius. Usually managed by closed manipulation, by immobilization by splint or a cast, or, if displaced, by internal or external fixation.

• Fractures involving the shaft of the humerus are a common injury among young and middle-aged adults. If surgery is done, skin or skeletal traction may be used for reduction and immobilization.

• Pelvic fractures range from benign to life threatening depending on mechanism of injury and associated vascular insult.
• Physical examination demonstrates local swelling, tenderness, deformity, unusual pelvic movement, and echymosis on abdomen.
• Treatment depends on the injury severity and ranges from limited intervention to pelvic sling traction, hip spica casts,
Types of Bone Fractures

- Transverse
- Linear
- Nondisplaced
- Displaced, Compound
- Spiral
- Greenstick
- Comminuted

Image of bone fractures and a bloodied arm.
• Hip fractures are common in older adults.
• Manifestations are external rotation, muscle spasm, shortening of affected extremity, and severe pain in region of fracture.
• Surgical repair is preferred for managing intra-capsular and extra-capsular fractures.
• After surgery—in addition to teaching on how to prevent prosthesis dislocation—the nurse should place a large pillow between patient’s legs when turning, avoid extreme hip flexion, and avoid turning the patient on affected side until approved by surgeon.
• The nurse assists both the patient and family in adjusting to restrictions and dependence imposed by hip fracture.
AMPUTATION

- Older persons have the highest incidence of amputation due to effects of peripheral vascular disease, atherosclerosis, and diabetes.
- Indications for amputation include circulatory impairment resulting from a peripheral vascular disorder, traumatic and thermal injuries, malignant tumors, and infection of the extremity.
- Goal of surgery is to preserve extremity length and function while removing all infected, pathologic, or ischemic tissue.
- Goals for the nurse are that the patient will have pain relief from the underlying health problem, satisfactory pain control, maximum rehabilitation potential, and ability to cope with the body image changes.
Joint replacement surgery is the most common orthopedic operation performed on older adults.

Surgery is aimed at relieving pain, improving joint motion, correcting deformity and mal-alignment, and removing intra-articular causes of erosion.

Types of joint surgeries include synovectomy, osteotomy, debridement, and arthroplasty.

Arthrodesis is the surgical joint fusion which may be done if articular surfaces are too damaged or infected to allow joint replacement or for reconstructive surgery failures.

Postoperatively, neurovascular assessment is performed to assess nerve function and circulatory status. Anticoagulation therapy, analgesia, and antibiotics are administered.
• Ambulation is encouraged as early as possible to prevent immobility complications.

• Patient discharge teaching includes instructions on reporting complications, including infection and dislocation of the prosthesis (e.g., pain, loss of function, shortening or malalignment of an extremity).
That’s all FOLKS..

Thank You for Listening!
1. The Goal of this surgery is to preserve extremity length and function while removing all infected, pathologic, or ischemic tissue.

2. **Is a partial or incomplete displacement of the joint surface.** Manifestations are similar to a dislocation but are less severe. Treatment is similar to a dislocation, but it may require less healing time.

3. **An excessive stretching of a muscle and its fascial sheath.** It often involves the tendon.

4. **The surgical joint fusion which may be done if articular surfaces are too damaged or infected to allow joint replacement or for reconstructive surgery failures.**

5. Provocative test used in the diagnosis of carpal tunnel syndrome.
MATCHING TYPE

6. Sprain

7. Repetitive Strain Injury

8. Meniscus

9. Bursitis

10. Greenstick
• Pick one Musculoskeletal Trauma and Orthopedic Surgery and Explain it also state its symptoms. (5 points)