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Medical Diagnosis/Disease: THA : Total hip arthroplasty

NCLEX IV (8): Physiological Integrity/Physiological Adaptation

Anatomy and Physiology Normal Structures

on 2nd and 3rd page

Pathophysiology of Disease

- provides significant relief of pain and improves function for pt with joint deterioration from OA, RA
- treat hip fractures

NCLEX IV (7): Reduction of Risk

Anticipated Diagnostics

Labs
- CBC
- Cmp
- CRP
- ESR

Additional Diagnostics
- x RA
- H and P
- MRI
- Bone scan

NCLEX II (3): Health Promotion and Maintenance

Contributing Risk Factors

- lupus
- obesity
- rheumatoid arthritis
- sedentary lifestyle
- previous surgeries
- hip fractures

Signs and Symptoms

- shock
- numbness/ tingling
- tenderness
- bruising
- edema
- erythema
- shortening of leg
- difficulty moving leg

NCLEX IV (7): Reduction of Risk

Possible Therapeutic Procedures

Non-surgical
- joint injections
- PT
- weigh management

Surgical

prosthesis replaces the ball-and-socket joint formed by the upper shaft of the femur and pelvis

Prevention of Complications

(What are some potential complications associated with this disease process)
- Infection
- DVT / PE
- Pressure Ulcers
- Pneumonia
- Muscle Atrophy and Weakness
- Joint Stiffness and Contracture
- Functional Decline
- Malunion or Nonunion
- Leg Length Discrepancy
- Heterotopic Ossification

NCLEX IV (6): Pharmacological and Parenteral Therapies

Anticipated Medication Management

- analgesics
- calcium and vitamin D supplements
- NSAID
- Antibiotics
- Anticoagulants
- muscle relaxers

NCLEX IV (5): Basic Care and Comfort

Non-Pharmacologic Care Measures

- ice therapy
- elevate extremity
- wound care
- ambulation

NCLEX III (4): Psychosocial/Holistic Care Needs

What stressors might a patient with this diagnosis be experiencing?

- anxiety
- fear
- change in life style
- support

Client/Family Education

List 3 potential teaching topics/areas

- safe ambulation with assistive devices with weight bearing restrictions
- establish exercise plan and teach how to perform safely
- high protein diet for optimal healing

NCLEX I (1): Safe and Effective Care Environment

Multidisciplinary Team Involvement

(Which other disciplines do you expect to share in the care of this patient)
- Hospitalist
- orthopedic surgeon
- case management
- pt/OT / RT

Anatomy/physiology

Bone function

- support
- protect internal organs
- voluntary movements
- Blood cell production
- mineral storage. → calcium/phosphous

- Allows body to bear weight and parts of it absorb shock
- bones are a attachment for muscles and ligaments.

muscles → bone

via tendons

- Bones act as a lever for muscles
- ligaments provide stability to joints
- Bone marrow contains the tissues responsible for making red and white blood cells.

3 types of bone cells

osteoblasts- make collagen, they are the basic bone forming cells (inner layer of bone)

osteocytes - mature bone cells

osteoclasts- take part in bone remodeling by helping break down bone tissue .

Bone remodeling-removal of old bone by osteoclasts (reabsorption) and the deposits of new bone by osteoblasts (ossification).

structure

cortical - compact and dense

- osteons fit closely together to create a dense bone structure

cancellous- spongy

- haversian canals run parallel to the bone's long axis
  - contain vessels that travel to the bones interior from the periosteum

- surrounding each osteon are concentric ring called lamellae, this indicates mature bone.

canals = canaliculi

lacunae -mature bone cells are embedded here

cancellors bone has lamelae occur along the lines of maximum stress placed on the bone

- filled with red or yellow marrow
- blood reaches the bone cells by passing through spaces in the marrow

gross structure

long bone consist of:

epiphysis - widen area at each end of a long bone, made up of cellous bone.

- allows greater weight distribution
- amnaidn lpocraotvioindfeors msutsacbleilaittt
- Articular cartilage covers the ends of the epiphysis, provides smooth, low-friction surface for joint movement.

diaphysis- main shaft of long bone.

- provides structural support
- with stand bending and twisting forces more easily.
- metaphysis-flared area between the epiphysis/diaphysis .

epiphysealplate-growth plate, cartilage area between the epiphysis and the metaphysis

periosteum- composed of fibrous connective tissue that covers the bone.

- tiny blood vessels penetrate the periosteum to bring nutrition to underlying bone.

the medullary-marrow

- red marrow is mainly found in flat bone → sternum/pelvis/scapula and at the end of the long bone
- red bone marrow involved in blood cell production. (hematopoiesis)
- yellow bone marrow- adipose tissue, storage site for triglycerides.

The acetabulum is part of the pelvis and is lined with articular cartilage, a smooth tissue that allows frictionless movement within the joint.

The femoral head is also covered with articular cartilage.

Pelvis: The hip joint is formed by the articulation of the femur (thigh bone) with the acetabulum, a concave socket in the pelvic bone.

Femur: The femoral head fits into the acetabulum, forming a ball-and-socket joint.

Ligaments:

Ligamentum Teres: Connects the femoral head to the acetabulum, providing stability.

Iliofemoral, Pubofemoral, and Ischiofemoral Ligaments: These ligaments form a strong capsule around the joint, providing stability and limiting excessive movement.

Muscles:

Hip Flexors: Include muscles like the iliopsoas (iliacus and psoas major), which assist in flexing the hip.

Hip Extensors: The gluteus maximus is a major extensor.

Hip Abductors: Muscles like the gluteus medius and minimus perform abduction.

Hip Adductors: Muscles on the inner thigh, including the adductor longus and adductor magnus, bring the leg toward the midline.

Rotators: Various muscles contribute to internal and external rotation of the hip.

Blood Supply: Blood is supplied to the hip joint by branches of the femoral and obturator arteries

Movement:

The hip joint allows for a wide range of movements, including flexion, extension, abduction, adduction, internal rotation,,and external rotation. These movements are essential for activities like walking, running sitting, and more.

Weight-Bearing:

The hip joint bears a significant portion of the body's weight, providing stability during activities like standing and walking.

Shock Absorption:

The articular cartilage in the hip joint absorbs shocks and provides a smooth surface for movement, reducing friction and preventing damage to the bones.

Stability:

Ligaments and muscles work together to provide stability to the hip joint, preventing dislocations and ensuring proper alignment during movement.

Weight Distribution:

The hip joint plays a crucial role in distributing the body's weight between the lower limbs, contributing to overall balance and posture.