Preconference Form

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Medical Diagnosis/Disease: Osteoarthritis

NCLEX IV *(8)*: Physiological Integrity/Physiological Adaptation

NCLEX IV *(7)*: Reduction of Risk

Anatomy and Physiology	Pathophysiology of Disease	Anticipated Diagnostics
Normal Structures -Bones contain both organic material in the form of collagen and inorganic material in the form of calcium/phosphate. -Classified according to structure, as cortical (compact/dense) or cancellous (spongy). -In cortical bone cylindrical structure units called osteons fit closely together to create a dense bone structure. -Within the systems the Haversian canals run parallel to the bones long axis. They contain the blood vessels that travel to the bone's interior from the periosteum. -Surrounding each osteon are concentric rings called lamellae which indicate mature bone. -Cancellous bone has a different structure, the lamellae occur along the lines of maximum stress placed on the bone. -Cancellous bones are filled with red or yellow marrow. -Three types of bone cells are osteoblasts, osteocytes, and osteoclasts. -Osteoblasts make organic bone matrix which is collagen. -Osteocytes are mature bone cells. -Osteoclasts breakdown bone tissue for bone remodeling which is the removal of old bone by osteoclasts and the deposit of new bone by osteoblasts. -Each long bone consists of an epiphysis, diaphysis, and metaphysis. -The epiphysis is the widened area at each end of the long bone, this allows increased weight distribution and provides stability. It is the main location for muscle attachment and articular cartilage covers the ends of the epiphysis which provides a smooth low friction surface for joint movement. -The diaphysis is the main shaft along the bone to provide support, the medullary cavity is in the center of the diaphysis and contains either red or yellow bone marrow. -A joint is a place where the ends of 2 bones are close and move in relation to each other. -Joints are classified by the degree of	-Slowly progressive non inflammatory disorder of the synovial joints that affects over 30 million adults in the US. -Involves the loss of articular cartilage with the formation of bony outgrowths (bone spurs). -OA is not a normal part of the aging process, but aging is one risk factor. -Other risk factors are decreased estrogen at menopause, obesity, lack of exercise, genetics, work that requires frequent kneeling, & sports. -The destruction of cartilage usually begins between ages 20 to 30 and most adults are affected by age 40. -Can be caused by an event or condition that directly damages cartilage or causes joint instability. -Normal articular cartilage is smooth, white, and translucent but as osteoarthritis progresses the cartilage becomes dull, yellow, and granular. It becomes softer and less elastic making it less able to resist wear with heavy use -Pain is later in the disease when articular cartilage is lost, and the bony joint surfaces rub against each other. -Manifestations range from mild discomfort the significant disability. -Joint pain is the main symptom and usually the reason the patient seeks medical care. -The pain typically worsens with activity and in early stages, rest relieves this pain. -Patients with advanced OA may have pain at rest and have trouble sleeping due to increased joint pain. -Pain can also worsen when the barometric pressure falls before severe weather. -As pain becomes worse it can cause disability and loss of function making it hard to sit down or get up. -Joint sniff stiffness can also occur after periods of rest or an unchanged position. It is common in the early morning and usually resolves within 30 minutes.	Labs -There are no specific labs to diagnose OA. -CBC/LFT's may be done to screen for related conditions or establish baselines. Additional Diagnostics -Joint fluid analysis -X rays/CT -Dexa scan to check for development of osteoporosis. -H & P -Bone scan -MRI

movement that they allow; the most common joint is the freely movable (synovial) type.
-Each joint is enclosed in a capsule of fibrous connective tissue which joins the two bones together. The capsule is lined by synovial membrane which secretes thick synovial fluid which lubricates the joint to reduce friction.
-There are three types of cartilage which are hyaline, elastic, and fibrous.
-Hyaline cartilage is the most common and it is found in the nose and articular surfaces of bones.
-Elastic cartilage has both collagen and elastic fibers and it is more flexible than hyaline cartilage.
-Fibrous cartilage consists mostly of collagen fibers and is a tough tissue that often functions as a shock absorber.
AGE:
-Increased bone reabsorption and decreased bone formation cause a loss of bone density.
-Almost 30% of muscle mass is lost by age 70
-Risk for falls increases due to loss of strength and balance making the person unsteady.

-This joint stiffness is how osteoarthritis is distinguished from inflammatory joint disorders like rheumatoid arthritis.
-Crepitation (grating sensation caused by loose cartilage particles in the joint cavity) is common in patients with knee osteoarthritis and can cause stiffness.
-Osteoarthritis usually only affects one side of the body.
-Osteoarthritis of the knee commonly causes obvious joint deformity for example the patient becomes bow legged.
-In advanced with hip osteoarthritis one leg may become shorter than the other as the joint space narrows.

Total Hip Arthroplasty:
-Also known as a total hip replacement, is used to provide pain relief and improved function for patients with joint deterioration from OA, RA, and other conditions.
-It can also be used to treat hip fractures.
-In this surgery an implant or prosthesis replaces the ball and socket joint formed by the upper shaft of the femur and pelvis.
-The ball and socket components can be cemented with polymethyl methacrylate into place which bonds to bone.
-Or they can be inserted without cement. Cementless THA may provide longer stability because it enables growth of new bone tissue into the porous surface coating of the implant.
-Cementless implants are better for younger more active patients or patients with good bone quality that has a chance to grow into the implant.
-Indications: pain, limited mobility, OA, RA, fracture, tumors in hip joint.
Nursing interventions/assessments for after the surgery are neurovascular assessments of the 6P's, elevation when in bed, maintaining limb alignment with pillows, teaching the patient about the risk of dislocation when doing everyday activities like crossing legs, educating on the need for elevated toilet seats, education on how to use the trapeze system on the bed if applicable.
-Potential post op complications: dislocation, blood clots, infection, nerve injury, leg length discrepancy, fracture, and hemorrhage.

NCLEX II *(3)*: Health Promotion and Maintenance

Contributing Risk Factors	Signs and Symptoms
-Age -Decreased estrogen at menopause -Obesity -Frequent kneeling and stopping -Smoking -Women	-Pain -Stiffness -Edema -Tenderness -Loss of flexibility -Crepitus -Bumps -Cysts -Balance issues -Loss of height -Decreased ROM

NCLEX IV *(7)*: Reduction of Risk

Possible Therapeutic Procedures	Prevention of Complications
Non-surgical -PT -Joint injections -Massage -Acupuncture -Yoga -Cortisone injections -Radiofrequency ablation Surgical -**Total hip arthroplasty** -Join replacement -Joint fusion (fusing of joint into permanent position) -Osteotomy -Spinal decompression -Arthroscopic surgery -Synovectomy -Knee replacement	(What are some potential complications associated with this disease process) -Osteoporosis -Bone spurs -Bone death (osteonecrosis) -Fractures -Pinched nerve for OA of spine -Falls -DVT

NCLEX IV *(6)*: Pharmacological and Parenteral Therapies

Anticipated Medication Management
-DMOADs (disease modifying osteoarthritis drugs) -NSAIDs -Topical agents/creams -Analgesics

NCLEX IV *(5)*: Basic Care and Comfort

Non-Pharmacologic Care Measures
-Exercise training -Weight loss -Heat and cold therapy -Braces/shoe inserts -Assistive devices -Aquatic therapy -Mental health therapy -Incentive Spirometer

NCLEX III *(4)*: Psychosocial/Holistic Care Needs

What stressors might a patient with this diagnosis be experiencing?
-Financials -Fear of death -Pain -Decreased mobility -Loss of normal life routine -Loss of job

Client/Family Education

List 3 potential teaching topics/areas
• Educate on need for physical therapy to increase ROM. • Need for weight loss to decrease stress on joints. • Need for smoking cessation to decrease cartilage breakdown and pain.

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)
-PT/OT -Orthopedic surgeon -Rheumatologist -Dietician -Primary care physician -Case Management