

Challenges and Advances in Geriatric Orthopaedics Evaluating Musculoskeletal Health in an Aging Population

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Perspective

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DESCRIPTION

As the global population ages, the field of geriatric orthopaedics has gained increasing importance. Orthopaedic care for older adults presents distinct challenges due to the physiological and anatomical changes that accompany aging. Conditions such as osteoporosis, osteoarthritis, fractures and spinal deformities are common in elderly patients and their treatment often requires personalized approaches that consider comorbidities, functional status and overall quality of life.

The aging process and its impact on musculoskeletal health

Aging is associated with various musculoskeletal changes that increase the vulnerability of older adults to orthopaedic problems. The most notable of these include.

Bone Density Decline (BMD): Bone Mineral Density (BMD) naturally decreases with age, particularly after menopause in women. This decline contributes to osteoporosis, which increases the risk of fractures, especially in weight-bearing bones like the hip, spine and wrist.

Degeneration of joints: Osteoarthritis (OA) is the most common joint disease in older adults, leading to joint pain, stiffness and reduced mobility. OA often affects the knees, hips and spine, severely limiting function and quality of life.

Muscle weakness and sarcopenia: Age-related loss of muscle mass and strength, known as sarcopenia, exacerbates joint instability and increases the risk of falls and fractures. Muscle weakness, particularly in the lower limbs, can lead to a reduced ability to perform daily activities and maintain independence.

Changes in spinal anatomy: Degenerative changes in the spine, such as intervertebral disc degeneration vertebral fractures and spinal stenosis are common in older adults and can cause significant pain and mobility issues.

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Common orthopaedic conditions in geriatrics

Several orthopaedic conditions are particularly prevalent in older populations.

Osteoporosis: Osteoporosis is characterized by reduced bone strength, making bones more fragile and prone to fractures. Hip fractures, vertebral compression fractures and wrist fractures are common consequences. Osteoporotic fractures are a major cause of morbidity and mortality in the elderly.

Osteoarthritis: The progressive degeneration of cartilage in joints, particularly in the knees, hips and hands, results in pain, swelling and limited range of motion. OA can significantly impair mobility and independence and it is a leading cause of disability in older adults.

Fractures: Older adults are at higher risk of falls and fractures are common in this age group. Hip fractures, in particular, are a significant cause of hospitalization, disability and mortality. Falls often lead to a cycle of increasing frailty and reduced mobility.

Spinal deformities: Conditions such as kyphosis and scoliosis are common in older adults, often due to age-related degenerative changes in the spine. These deformities can cause back pain, loss of height and difficulty with posture and balance.

Proximal humerus and distal radius fractures: Fractures of the proximal humerus and distal radius are particularly common in older adults due to falls. These injuries often require careful management to prevent long-term disability.

Foot and ankle disorders: Deformities such as bunions, hammertoes and flatfoot, as well as fractures and tendinopathies, affect the elderly, often leading to difficulty walking, balance problems and pain.

Geriatric orthopaedics is a specialized field that requires attention to the unique needs of older adults. With the increasing prevalence of musculoskeletal disorders in the aging population, it is essential to understand the physiological changes associated with aging and to adopt a comprehensive approach to treatment. By focusing on prevention, managing comorbidities, providing individualized treatment plans and employing a multidisciplinary care model, healthcare providers can improve outcomes and quality of life for elderly patients with orthopaedic conditions.