38.3D: Bone and Joint Disorders

The most common bone and joint disorder are types of arthritis.

Learning Objectives

• Describe the causes and treatments for gout, rheumatoid arthritis, and osteoarthritis

Key Points

• Arthritis is a common disorder of synovial joints that involves inflammation of the joint; there are a few major subtypes of this disorder.
• The most common type of arthritis is osteoarthritis, which is associated with “wear and tear” of cartilage.
• Gout is a form of arthritis resulting from the deposit of uric acid crystals within a body joint.
• Rheumatoid arthritis is an autoimmune disease in which the joint capsule and synovial membrane become inflamed.

Key Terms

• synovial joints: The most common type of joint in the body, which includes a joint cavity.
• arthritis: A joint disorder that involves inflammation in one or more joints.

Synovial joints are the most common type of joint in the body. A key structural characteristic for a synovial joint that is not seen at fibrous or cartilaginous joints is the presence of a joint cavity.
Arthritis is a common disorder of synovial joints that involves inflammation of the joint. This often results in significant joint pain, along with swelling, stiffness, and reduced joint mobility. There are more than 100 different forms of arthritis. Arthritis may arise from aging, damage to the articular cartilage, autoimmune diseases, bacterial or viral infections, or unknown (probably genetic) causes. Arthritis is the most common cause of disability in the USA. More than 20 million individuals with arthritis have severe limitations in function on a daily basis.

**Osteoarthritis**

The most common type of arthritis is osteoarthritis, which is associated with aging and “wear and tear” of the articular cartilage. Risk factors that may lead to osteoarthritis later in life include injury to a joint; jobs that involve physical labor; sports with running, twisting, or throwing actions; and being overweight.

Osteoarthritis of the Finger Joints

The formation of hard nobs at the middle finger joints (known as Bouchard’s nodes) and at the farther away finger joint (known as Heberden’s node) are a common feature of Osteoarthritis in the hands.

Osteoarthritis begins in the cartilage and eventually causes the two opposing bones to erode into each other. Osteoarthritis typically affects the weight-bearing joints, such as the back, knee and hip. There is no cure for osteoarthritis, but several treatments (surgery, lifestyle changes, medications) can help alleviate the pain.

**Gout**

Gout is a form of arthritis that results from the deposit of uric acid crystals within a body joint. Usually only one or a few joints are affected, such as the big toe, knee, or ankle. The attack may only last a few days, but could return to the same or another joint. Gout occurs when the body makes too much uric acid or the kidneys do not properly excrete it. A diet with excessive fructose has been implicated in raising the chances of a susceptible individual developing gout.
Figure \(\PageIndex{1}\): **Gout**: Gout presenting in the metatarsal-phalangeal joint of the big toe: Note the slight redness of the skin overlying the joint.

### Rheumatoid Arthritis

Other forms of arthritis are associated with various autoimmune diseases, bacterial infections of the joint, or unknown genetic causes. Autoimmune diseases like rheumatoid arthritis produce arthritis because the immune system of the body attacks the body joints.

In rheumatoid arthritis, the joint capsule and synovial membrane become inflamed. As the disease progresses, the articular cartilage is severely damaged or destroyed, resulting in joint deformation, loss of movement, and severe disability. The most commonly involved joints are the hands, feet, and cervical spine, with corresponding joints on both sides of the body usually affected, though not always to the same extent.

Figure \(\PageIndex{1}\): **Rheumatoid Arthritis**: A untreated hand affected by rheumatoid arthritis.

**Rheumatoid Arthritis**: A untreated hand affected by rheumatoid arthritis.
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