

JOINT NOMENCLATURE

ARTHRITIS --Arthritis typically refers to the wearing away of joint surfaces. Arthritis falls into one of three categories: Osteoarthritis is primary arthritis of the joint and may be related to family history. Traumatic arthritis is arthritis that develops after injury to a joint. Inflammatory arthritis occurs when a disease affecting the patient causes the cartilage to die off. Treatment is dependent on the cause and extent of the arthritis and may entail medication, bracing or surgery.

ARTHROGRAM – a diagnostic test in which a contrast fluid is injected into the shoulder joint and an x ray is taken to view the fluid's distribution in the joint. Leaking of fluid into an area where it does not belong may indicate a tear or opening.

AVULSION – a tearing away or forcible separation.

BALL AND SOCKET -- a multiaxial synovial joint in which a more or less extensive sphere on the head of one bone fits into a rounded cavity in the other bone, as in the hip joint

BIAXIAL – joint in which there are two principal axes of movement situated at right angles to each other

BICONDYLAR – a synovial joint in which two more or less distinct, rounded surfaces of one bone articulate with shallow depressions on another bone

BURSAE – filmy sac-like structures that permit smooth gliding between bone, muscle, and tendon. Two bursae cushion and protect the rotator cuff from the bony arch of the acromion.

BURSITIS -- inflammation of a fluid-filled sac, or bursa, that lies between tendon and skin or between tendon and bone. Normally, a bursa protects the joint and helps make movement more fluid.

CARTILAGE - Cartilage is a living tissue that lines our joints. It is a matrix of proteins and collagen that is tough, absorbs shock and is very smooth. Healthy cartilage can, and often does, last our whole life without problems. Disease of the cartilage or trauma can cause the cartilage cells to die. Unlike most tissues in our body, joint cartilage cells do not reproduce themselves once our skeletons are adult. Much research is currently in progress in clinical and basic science and has led to recent innovations in cartilage transplantation and growth.

CARTILAGINOUS JOINTS – include synchondroses and symphyses.

CHONDRAL DEFECT - Focal tears can occur in hyaline cartilage as a result of shearing injuries across the joint surface, and they may create mechanical symptoms mimicking meniscal pathology. These are best depicted on T2 weighted spin echo or T1 weighted gradient echo images [1], where they are seen as focal signal abnormalities along the joint surface that spare the subchondral cortex. These lesions may also be termed chondral fractures or fracture- separations of articular cartilage. In chronic cases, the MRI findings may overlap with those of chondromalacia.

CONDYLAR – a modified ball and socket synovial joint in which the surfaces are elongated or ellipsoidal; it is a biaxial joint, i.e., two axes of motion at right angles to each other, the radiocarpal is an example.

CONDYLE – a rounded projection on a bone, such as those occurring on the femur, occiput and mandible.

CONTUSION – A bone bruise results from compressive forces incurred during an injury. The damaged area occurs in the medullary portion of the bone and can be accompanied by bleeding and swelling. Bruises are often caused by falls, sports injuries, car accidents, or blows received by other people or objects. Bruises can last from days to months, with the bone bruise being the most severe and painful.

CYST – an abnormal sac containing gas, fluid or a semisolid material, with a membranous lining.

DEGENERATIVE JOINT DISEASE -- pathologic alterations in articulations resulting from degeneration. Degenerative joint disease is widespread and common; in synovial joints, it is known as osteoarthritis.

DISLOCATION – A dislocation is a separation of a bone where it meets a joint. (Joints are areas where two or more bones come together.) A dislocated bone is no longer in its normal position. A dislocation may also cause ligament and nerve damage.

EDEMA – an accumulation of an excessive amount of watery fluid in cells or intercellular tissues

ELLIPSOID – see condylar

FIBROUS JOINT – a union of two bones by fibrous tissue such that there is no joint cavity and almost no motion possible. The three types are sutures, syndesmoses and gomphoses (type of fibrous joint which occur only between the teeth and adjacent bone) .

FRACTURE -- Bone - broken; Fracture; Stress fracture --If more pressure is put on a bone than it can stand, it will split or break. A break of any size is called a fracture. If the broken bone punctures the skin, it is called an open fracture (compound fracture). A stress fracture is a hairline crack in the bone that develops because of repeated or prolonged forces against the bone.

HINGE – a uniaxial joint in which a broad, transversely cylindrical convexity on one bone fits into a corresponding concavity on the other, allowing of motion in one plane only, as in the elbow.

GANGLION – a cyst containing mucopolysaccharide-rich fluid within fibrous tissue or, occasionally, muscle bone or a semilunar cartilage; usually attached to a tendon sheath in the hand, wrist, or foot, or connected with the underlying joint.

HYPERTROPHY – enlargement of a part or organ as a result of increase in size of its constituent cells.

JOINT – the place of union, usually more or less movable, between two or more rigid skeletal components, bones, cartilage or parts of a single bone. Joints between skeletal elements exhibit a great variety of form and function and are classified into three general morphologic types: fibrous joints, cartilaginous joints and synovial joints.

JOINT CAPSULE – a sac enclosing the articulating ends of the bones participating in a synovial joint, formed by an outer fibrous layer and an inner synovial membrane.

EFFUSION – escape of synovial fluid into the joint.

LIGAMENTS – tough bands of connective tissue that attach bones to each other, providing stability.

MULTI-AXIAL – movement of joint in three planes, example is ball and socket joints

MYXOMA – a benign connective tissue tumor composed of primitive cells and stroma resembling mesenchyme. These tumors are invasive, may appear at any age and sometimes recur. Myxomas of soft tissues may be associated with fibrous dysplasia of adjacent bone. Juxta-articular myxomas are also known as meniscal cysts.

OLECRANON - a bone projection from the ulna at the elbow, the anterior surface of which forms the trochlear notch

OSTEOCHONDRITIS DISSECANS - results from a loss of the blood supply to an area of bone underneath a joint surface and usually involves the knee. The affected bone and its covering of cartilage gradually loosen and cause pain. This problem usually arises spontaneously in an active adolescent or young adult. It may be due to a slight blockage of a small artery or to an unrecognized injury or tiny fracture that damages the overlying cartilage. A person with this condition may eventually develop osteoarthritis. Lack of a blood supply can cause bone to break down (avascular necrosis).* The involvement of several joints or the appearance of osteochondritis dissecans in several family members may indicate that the disorder is inherited.

OSTEOARTHRITIS -- the most common joint disorder. The chronic disease causes the cushioning (cartilage) between the bone joints to wear away, leading to pain and stiffness. It can also cause new pieces of bone, called bone spurs, to grow around the joints.

OSTEOMYELITIS -- an acute or chronic bone infection, usually caused by bacteria.

OSTEOPHYTE – An outgrowth or excrescence of a bone.

OSTEOPHYTOSIS -- a condition characterized by formation of multiple osteophytes.

PERI-ARTICULAR CYST – GANGLION CYST - A synovial cyst is synovial lined and arises in locations where synovium ordinarily resides (periarticular or peribursal). A ganglion is non-synovial lined and contains thick gelatinous material. Location rather than any specific MRI features occasionally serves to distinguish these lesions. Numerous bursa also reside about the knee joint and may become visible when inflamed or fluid filled. The term 'peri-articular cyst' is loosely applied to encompass all of these fluid signal masses.

PIVOT – a synovial joint in which a section of a cylinder of one bone fits into a corresponding cavity on the other, as in the proximal radioulnar joint.

PLANE – a synovial joint in which the opposing surfaces are nearly planes and in which there is only a slight, gliding motion as in the intermetacarpal joints; a flat joint.

PLICAE -- synovial remnants found in the knee that divide the joint into three compartments. Suprapatellar, medial patellar and infrapatellar plicae are commonly encountered and can be identified by various means, such as arthrography, computed tomography, MRI or arthroscopy

SADDLE – a biaxial synovial joint in which the double motion is affected by the opposition of two surfaces, each of which is concave in one direction and convex in the other, as in the carpometacarpal joint of the thumb.

SOLID JOINTS – joints in which there is no cavity between the articulating bones and the components are held together by connective tissue. There are two types are fibrous joints and cartilaginous joints.

SPRAIN – a stretch and/or tear of a ligament (a band of fibrous tissue that connects two or more bones at a joint). One or more ligaments can be injured at the same time. The severity of the injury will depend on the extent of injury (whether a tear is partial or complete) and the number of ligaments involved.

STRAIN – an injury to either a muscle or a tendon (Fibrous cords of tissue that connect muscle to bone). Depending on th severity of the injury, a strain may be a simple overstretch of the muscle or tendon, or it can results from a partial or complete tear.

SUTURES – type of fibrous joint which occur only in the skull where adjacent bones are linked by a thin layer of connective tissue termed a sutural ligament.

SYNCHONDROSES – cartilaginous joint where two ossification centers in a developing bone remain separated by a layer of cartilage, for example, the growth plate that occurs between the head and shaft of developing long bones – those joints allow bone growth and eventually become completely ossified.

SYNDESMOSES – type of fibrous joint where two adjacent bones are linked by a ligament, for example, the ligamentum flavum which connects adjacent vertebral laminae, or by an interosseous membrane which links, for example, the radius and ulna in the forearm.

SYMPHYSES – cartilaginous joint where two separate bones are interconnected by cartilage – most of these types of joints occur in the midline and include the pubic symphysis between the two pelvic bones and intervertebral discs between adjacent vertebrae

SYNOVITIS – inflammation of the synovial membrane of a joint.

SYNOVIAL FLUID – fluid secreted by the synovial membrane; lubricates joint surfaces and nourishes articular cartilages.

SYNOVIAL JOINTS – joints in which the articulating bones are separated by a fluid-containing joint cavity. This arrangement permits substantial freedom of movement, and all synovial joints are freely movable diarthroses (relating to two joints). All joints of the limbs – indeed, most joints of the body -- fall into this class.

SYNOVIUM – the membrane that lines the joint and secretes a lubricating liquid called synovial fluid.

TENDONS – tough cords of connective tissue that attach the shoulder muscles to bone and assist the muscles in moving the shoulder.

TENDONITIS -- inflammation, irritation, and swelling of a tendon, which is the fibrous structure that joins muscle to bone. In many cases, **TENDINOSIS** (tendon degeneration) is also present.

TENDONOPATHY – any disease or dysfunction of a tendon. The form of tendonopathy is named for the affected tendon, as in Achilles tendonopathy or rotator cuff tendonopathy.

TENOSYNOVITIS - inflammation of a tendon and its enveloping sheath

UNI-AXIAL – joint in which movement is around one axis only, example is hinge joints.

SOURCES: www.acr.org; www.radiologyinfo.org; www.nlm.nih.gov; Stedman's Medical Dictionary 27th edition.



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