Legg-Calvé-Perthes Glossary of Terms

a. **Acetabulum**: socket part of the hip joint

b. **Arthrogram**: This is a procedure where a dye that can be seen by X-ray is placed into the hip joint to determine the shape of the ball part of hip joint (femoral head) and whether the femoral head is covered (contained) by the socket part of the hip joint (acetabulum). Usually, this minor procedure is performed with the patient asleep or sedated.

c. **Bisphosphonate therapy**: bisphosphonates are drugs used to preserve bone in conditions such as osteoporosis, malignancy induced bone resorption, Paget's disease of the bone, and osteogenesis imperfecta. Its use in treating children with Perthes disease is not established.

d. **Dysplasia**: This term refers to the abnormal development of the acetabulum and/ or femoral head.

e. **Femoral head**: ball part of the hip joint

f. **Growth plate cartilage** and the **growth plate**: The growth plate is a specialized cartilaginous tissue where growth of bone takes place. The proximal femoral growth plate is located just beneath the femoral head and can be affected to variable degrees by Perthes disease. This growth plate produces growth of the femoral neck. The femoral head also grows as a round structure and this comes from the growth plate cartilage surrounding the bony part of the femoral head. This cartilage is also affected by Perthes disease. No growth of the bony part of the femoral head (often called the ossific nucleus or the secondary center of ossification) is one of the earliest X-ray signs of Perthes disease.

g. **Leg-length discrepancy**: The difference between the lengths of one leg and the other. In some patients with Perthes disease, the affected leg can be short (usually not more than an inch).

h. **Necrosis**: refers to extensive cell death in general; Osteonecrosis refers to bone death.

i. **Ossification**: This is a process of new bone formation performed by osteoblasts. The re-ossification stage of the disease follows the resorptive stage, but these stages can overlap.

j. **Osteoblasts**: These are one of the cell types involved in the healing process. These cells make new bone to build up the femoral head. They contribute to bone formation in the "reossification" stage of the disease.

k. **Osteoclasts**: These are one of the cell types involved in the healing process. These cells remove bone. They contribute to bone loss and weakening of the femoral head in the "resorptive" or "fragmentation" stage of the disease.

l. **Osteotomy**: This is a surgical procedure where a bone is cut to shorten, lengthen or change its alignment.

m. **Range of motion**: Checking for hip joint movement in various directions to see if the hip motion is affected. In Perthes disease, a decrease in hip abduction (to spread out the leg) is one of the earliest movements to decrease or to become restricted.

n. **Referred pain**: Pain perceived as originating at a certain site but actually originating from somewhere else. In Perthes disease, some patients complain of knee or thigh pain instead of hip pain. This can cause confusion in the source of pain, and X-rays and MRIs of the knee are often performed instead of the hip joint, delaying the diagnosis.

o. **Resorption**: This is a process of removing the dead bone by osteoclasts. The resorptive stage of the disease usually follows the initial stage and is marked by a fragmented, disorganized appearance of the femoral head with areas showing bone removal.

p. **Subluxation**: when the ball part of the hip joint begins to slide out partly from the socket, it is called subluxation. This is seen on x-rays in some patients with Perthes disease. The hip joint does not come out completely. Subluxation may be due to femoral head collapse/flattening with a mismatch of the femoral head and its socket. It can also be accentuated by more bone being formed on the lateral, extruded part of the femoral head cartilage.

q. **Tenotomy**: surgically lengthening or releasing a tendon that is tight to improve hip joint motion. In some patients with Perthes disease, muscles that bring the leg in (adduction) called hip adductors can get tight and prevent the leg from being abducted (i.e. bring the leg out). If the abduction movement is lost, the hip adductors may need to be lengthened, and this surgical procedure is called adductor tenotomy.