Paget's Disease of Bone

Paget's Disease is a bone remodeling disorder. The bone normally undergoes constant renewal and replacement. In Paget's Disease, this process is not regulated normally. New bone is placed where it is not needed. Old bone is removed where it is needed. This can distort the normal bone growth.

CAUSE

The cause of Paget's Disease is not known. It may be caused partially by a childhood virus. The viral particle, known as a *paramyxovirus nucleocapsid*, has been identified within the bone cells of individuals with Paget's Disease. This virus particle is not found in normal bone. While this relationship has been identified, there is no definite connection between the virus and the cause of Paget's.

Paget's Disease is most commonly diagnosed in the sixth decade. It increases in commonness as age increases. It is uncommon in individuals under 40 years of age. In most cases, Paget's most often is a mild disease that does not cause any problems or complications. Most cases are diagnosed following x-rays performed for an unrelated reason.

COMMON SYMPTOMS

Common *symptoms* (problems) of Paget's Disease are bone or joint pain. Other common symptoms include swelling of joints, tenderness or redness over the affected areas. Occasionally, individuals will not know they have Paget's until they experience a *fracture* (break in bone) through a weakened area of bone. The most common bones affected by Paget's are the pelvis, *femur* (thigh bone), spine, skull, and *tibia* (shin bone).

DIAGNOSIS

Diagnosis (learning what is wrong) is made by physical examination, x-rays, and laboratory studies. The physical examination may show abnormalities of the skeletal shape or bone deformities. X-rays commonly show abnormalities of bone turnover. This includes areas of increased and decreased bone deposition. Laboratory studies will always show an increased level of alkaline phosphatase. These are a byproduct of bone formation. Calcium levels within the body are usually normal.

COMPLICATIONS

Complications of Paget's Disease include fractures through weak bone, heart problems, boney deformities, arthritis and spinal *stenosis* (narrowing). Certain types of Paget's Disease have a low (less than 1%) risk of developing cancer of the bone.

TREATMENT

Treatment for Paget's Diseases consists of medications that alter the rate of bone turnover. The two most common medications are bisphosphonates and calcitonin. These are the same medications used in individuals with osteoporosis. The bisphosphonates bind to the bone to stop it from being reabsorbed. Calcitonin slows down the cells that absorb the bone. Both these drugs prevent the weak parts of bone that cause deformity and are at high risk for being fractured.

Sometimes surgery is needed if there is a significant bone deformity. Sometimes surgery is needed if there is a break in the bone. Fractures are most common in the *femur* (thigh bone) and *tibia* (shin bone). They are usually treated with an *intramedullary rod*. This is a rod that is inserted within the marrow cavity in the center of the bone. Fractures in patients with Paget's Disease often take a long time to heal. This is because of abnormalities in bone turnover.

Another common surgery in patients with Paget's is called an *osteotomy*. In this procedure a wedge of bone is removed to correct a malalignment. This means a crooked bone is made straighter. This procedure is often necessary when the bones of the legs become misshapen in the later stages of this disease.

HOME CARE INSTRUCTIONS

- Take medications as instructed.
- Call your caregiver as needed for instructions if increasing pain or problems occur in spite of treatment.

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