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Journal of Bone Research

Short Communication

An Overview of Paget's Disease of Bone

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DESCRIPTION

Paget's disease of the bone is a disease of the skeleton that lasts for years. In a procedure known as reconstruction, old pieces of bone are removed and replaced with new, healthy bone on top of healthy bone. Paget's disease causes this process to become unbalanced, causing new bone to become abnormally shaped, weak, and brittle. Paget's disease most commonly affects the elderly, occurring in approximately 2%-3% of the population over the age of 55. In most cases, treating Paget's disease involves taking medication to slow or stop the disease from progressing. Surgery may be needed in patients with complications to fix or fix the malformed bone. Paget's disease affects every bone in the skeleton. It is most commonly found in the spine, abdomen, long bones of the extremities, and skull. One bone or several bones, it affects the whole bone or just part of it [1-4].

Osteoclasts are more active than osteoblasts in Paget's disease. This indicates that bone restoration is higher than usual. The osteoblasts constantly produces new bone, but they overreact and produce bone that is overly large, bulky, and unstable. Normal bone has a rigid overlying structure like a well-built brick wall. Bones affected by Paget's disease have an irregular mosaic pattern, but the bricks appear to have simply fallen off. The end result is bones that are large and dense, but weak and brittle. The bone is prone to breakage, bending, and deformity [2].

Bone pain is the most common complaint in patients with symptoms. This pain may be related to active Paget's disease or its complications, including: fractures due to brittle bones, bone deformity, advanced arthritis in the joints near the affected bone, resulting in compression, loss of sensation, or movement from the elongated bone to adjacent bones. Most people with Paget's disease have no symptoms. The disease is most commonly diagnosed when X-rays are taken for some other reason or when normal blood function indicates levels of serum alkaline phosphatase. Symptoms also result from the effect of the disease, in the level of calcium in the bloodstream [2,3]. When Paget's disease is active in many bones, the more active osteoclasts release enough calcium from the bone, breaking it down to increase blood calcium levels. This rare complication can cause many symptoms, including: fatigue, weakness, loss of appetite, abdominal pain, and constipation. Very rarely, Paget's disease develops into a type of bone cancer called Paget's sarcoma. Paget's sarcoma occurs in only 1% of patients with Paget's disease. These patients are usually over 70 years old. This form of malignant bone tumor is extremely aggressive and has a poor prognosis [4].

A blood test called serum alkaline phosphatase can also be used to diagnose the disease, detected by urinalysis, showing rapid bone turnover. A bone scan can be used to determine which bones are affected. In this test, a very small amount of radioactive dye is injected into the vein. A special camera is used to detect areas of the skeleton as the radioactive material increases. These critical points represent areas where bone turnover is higher than normal. Paget's disease on the bone scan almost always looks hot unless the condition is long-term and burning. A biopsy is sometimes required to confirm or rule out Paget's diagnosis. During a biopsy, a small sample of the affected bone is taken and examined under a microscope. The technique can be performed as a minor open surgery or with a needle under local anesthesia. There is no cure for Paget's disease and no method to reverse its bone-damaging effects. The aim of treatment is to alleviate the symptoms and at the same time prevent possible consequences. In some cases, surgery may be needed to treat complications of Paget's disease, including: Broken bones, bone contamination or deformity, and severe arthritis. Surgical procedures used to treat fractures, malignancy, or arthritis in people with Paget's disease is similar to those used to treat similar conditions in people with normal bones. These procedures may include: Internal Stabilization-This procedure can be used to treat fractures in the affected bone. In internal fixation, bone fragments are first returned to their normal position and then held in place with screws, wires, pins, or metal plates attached to the outside of the bone [2,4].

Osteotomy can help relieve pain and restore alignment to weight-bearing joints, particularly the knee and hip affected by Paget's disease. During the procedure, your doctor removes a broken bone near the damaged joint to shift weight to the healthy part of the joint. In this procedure, damaged joints or parts of a joint are removed and replaced with a metal, plastic, or ceramic device called prosthesis. The prosthesis is designed to reflect normal, healthy joint movement. Surgery may also be necessary,

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Received: 01-Mar-2022; Manuscript No. BMRJ-22-16600; **Editor assigned:** 03-Mar-2022; PreQC. No. BMRJ-22-16600 (PQ); **Reviewed:** 17-Mar-2022; QC. No. BMRJ-22-16600; **Revised:** 23-Mar-2022; Manuscript No. BMRJ-22-16600 (R); **Published:** 30-Mar-2022, DOI: 10.35248/2572-4916.22.S1.002.

Citation: Ahmad S (2022) An Overview of Paget's Disease of Bone. J Bone Res. S1:002.

particularly when stretched bony nerves in the spine or skull contract. In the rare case of Paget's sarcoma, surgery is almost always done to completely remove the tumor. Because Paget's disease increases the blood supply to the bones, your doctor may recommend taking bisphosphonates for some time before surgery to reduce the potential. Scientists are currently investigating genes linked to Paget's disease. This work may prompt doctors to develop new therapies to test and treat who is at risk for the disease. As doctors learn more about why the disease occurs, they may be able to develop specific treatments for Paget's disease. Doctors hope to eventually reverse them rather than lessen the impact on bones.

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