Osteonecrosis

WHAT IS OSTEONECROSIS?

Bone is a living, growing material. It has a framework of protein and calcium strengthens the bone framework. The outer layer of bone has nerves and a network of small blood vessels. Bone is constantly breaking down and being renewed.

Osteonecrosis means bone death. A loss of blood supply starves the cells that create new bone. If osteonecrosis continues, bone replacement does not keep up with bone breakdown. The shape of the bone changes and the joint stops working smoothly. This causes inflammation (arthritis) and pain.

Osteonecrosis usually affects the hip. The head (knob) of the hip bone gets its blood supply from just one blood vessel. A narrowing or blockage in this blood vessel can cut off the blood supply and cause osteonecrosis. Osteonecrosis may also affect the shoulders or knees.

Osteonecrosis is rare. It affects between 10,000-20,000 people in the U.S. each year. Osteonecrosis usually shows up in people in their 30s-50s. Unlike osteoporosis, osteonecrosis does not get more common with advancing age. People with HIV have a higher rate of osteonecrosis than the general population.

WHAT CAUSES OSTEONECROSIS?

Osteonecrosis is caused by a loss of blood supply to the bone. It can be caused by a bone fracture or dislocation. It is not known why people with HIV have an increased risk for osteonecrosis. Some diseases can reduce the blood supply to bones. In some cases, fat clogs blood vessels in the bone. HIV infection can cause problems with fat metabolism. High levels of blood fats can contribute to a blood clot. Increased inflammation might increase blood coagulation and also increase the risk of blood clots.

Drugs used to reduce inflammation (corticosteroids such as prednisone or hydrocortisone) can increase the risk of osteonecrosis if they are used for a long time. Heavy alcohol use and smoking have also been linked to osteonecrosis.

There is no evidence linking the use of specific antiretroviral drugs (ARVs) to osteonecrosis.

HOW DO I KNOW IF I HAVE OSTEONECROSIS?

Osteonecrosis causes pain in the joints. Pain in the hip area could be a sign of osteonecrosis. At first the pain might only occur when you put weight on the joint. In more severe cases the pain could become constant. If osteonecrosis continues, it may become impossible to walk.

A magnetic resonance imaging (MRI) scan can detect early stages of osteonecrosis. X-rays and other scans

can detect advanced cases. Some healthcare providers use surgery to test for osteonecrosis.

WHAT CAN I DO ABOUT OSTEONECROSIS?

A healthy person can sometimes recover from osteonecrosis, especially if it was caused by an accident. The body can repair damaged blood vessels and rebuild damaged bone. If alcohol or steroid use caused osteonecrosis, stopping their use might let the body heal itself.

The first treatments can be pain medications. You can also reduce the weight you put on your joints. This is the opposite of treatment for osteoporosis.

Treatment with bisphosphonate drugs such as alendronate (Fosamax) or residronate (Actonel) may help rebuild damaged bone, at least for a short period of time. There have been rare reports of osteonecrosis of the jaw in people who used alendronate for more than five years. Most of these cases were linked to intravenous (IV) use of alendronate and to tooth extraction or infection.

Medication may work well for patients with early osteonecrosis in small areas of bone. However, it does not work for those with hip or knee osteonecrosis and progressive bone collapse. Surgical procedures may be recommended to relieve pain and prevent bone collapse. A procedure called core decompression may be used to remove a piece (core) of bone from the affected area in an attempt to improve blood flow. In more advanced cases, surgeons may remove dead bone and re-position the bone so that the weight-bearing joint surface is supported by healthy bone.

If the joint has already collapsed, the only way to reduce pain and restore function may be to replace the joint.

THE BOTTOM LINE

People with HIV have unusually high rates of osteonecrosis. HIV itself or some side effects of the medications used to treat HIV may contribute to this.

Pain in the joints, especially the hip area, could be a sign of osteonecrosis. If you have joint pain, talk to your healthcare provider before you increase your exercise program. Mild cases might be treatable with pain relievers and a reduction in use of the joint. Serious cases may require surgery.

MORE INFORMATION

Medline Plus: Osteonecrosis

The BodyPro: Osteonecrosis and HIV Disease

POZ: Hundred-Fold Greater Risk of Osteonecrosis in HIV

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