



OSTEONECROSIS

WHAT IS OSTEONECROSIS?

Bone is a living, growing material. It has a framework of protein. 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. Osteonecrosis is also called avascular necrosis (AVN.) In this fact sheet, osteonecrosis and AVN mean the same thing.

If AVN 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.

AVN 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 AVN. AVN may also affect the shoulders or knees.

AVN is rare. It affects between 10,000 and 20,000 people in the US each year. AVN usually shows up in men and women in their 30s, 40s or 50s. Unlike osteoporosis (see fact sheet 557,) it does not get more common with advancing age. People with HIV have a higher rate of AVN than the general population.

WHAT CAUSES IT?

AVN 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 living with HIV have AVN. 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 (see fact sheet 123) can contribute to a blood clot. Increased inflammation (see fact sheet 484) 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 AVN if they are used for a long time. Heavy alcohol use and smoking have also been linked to AVN.

There is no evidence linking the use of specific anti-HIV drugs to AVN.

HOW DO I KNOW IF I HAVE OSTEONECROSIS?

Osteonecrosis causes pain in the joints. Pain in the hip area could be a sign of AVN. At first the pain might only occur when you put weight on the joint. In more severe cases the pain could become constant. If the AVN continues, it could 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 health care providers use surgery to test for osteonecrosis.

WHAT CAN I DO ABOUT AVN?

A healthy person can sometimes recover from AVN, 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 AVN, 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 AVN of the jaw in people who used alendronate for more than 5 years. Most of these cases were linked to intravenous use of alendronate and to tooth extraction or infection.

Medication may work well for patients with early AVN 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 also called avascular necrosis or AVN. 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 health care 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.

FOR MORE INFORMATION

Medline Plus:

<http://www.nlm.nih.gov/medlineplus/osteonecrosis.html>

Spanish version:

<http://www.nlm.nih.gov/medlineplus/spanish/osteonecrosis.html>

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