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FAQs: Bone Lesions and Avascular Necrosis

Frequently Asked Questions

Questions & Answers

Q: What is AVN?

A: Avascular Necrosis (AVN) is an abnormal and possibly crippling condition in which blood cannot get to the bone. When the blood supply to the bone is blocked, the area without blood supply can die, creating a necrotic bone lesion. The area of the body most commonly affected by AVN is the femoral head and neck. This may lead to collapse of the bone requiring replacement with an artificial hip joint. However, if bone lesions resulting from AVN are recognized in the early stages, it may be possible to save the joint.

Q: How does AVN affect the hip?

A: A healthy hip joint allows you to walk, squat and turn without pain. A problem hip can interfere with many activities you enjoy. Damaged hip bones, such as those affected by AVN, can cause pain and discomfort and may limit your ability to walk, run and get around.

Q: Who is at risk of AVN?

A: [2-7] Most people who are diagnosed with AVN are between 30-40 years old. Approximately 10,000 to 20,000 people in the U.S. are affected by the disease every year.[1] In some patients, the risk factor remains unknown, despite the numerous studies that have been conducted on the disease. However, below are a few factors that may increase your risk of developing AVN.

Possible risk factors include, but are not limited to:

- **Femoral head/neck fracture**
- **Hip dislocation**
- **Corticosteroid use**
- **Alcohol abuse**
- **Sickle cell disease**
- **Prior radiation therapy**
- **Organ transplantation**

Q: What are the symptoms of AVN?

A: [7-8] There are four main stages that AVN patients will experience. At the beginning, the patient may not recognize any changes in their body or any indications of pain. They are able to perform daily activities like usual. Early in the second stage the affected area will begin to hurt when pressure is applied to the area. The patient may be able to detect limitations in mobility and pain in the upper leg or groin area. In the third stage, the unattended area will hurt even when no pressure has been placed on the area. Individuals might show signs of limping as mobility decreases and pain progresses. In the final stage, if AVN persists, it will lead to the eventual collapse of the hip bone and joint area. From the first stage to the collapse, AVN symptoms range from several months to just under two years.

Q: What treatment options are available for AVN symptoms?

A: In order to reduce pain, stop the progression of joint and bone damage, and restore functionality to the area, the patient's current stage of AVN needs to be diagnosed.[7] Your doctor may recommend getting an X-ray, CT scan or MRI to see how far the disease has progressed.Based on the results and a doctor's recommendations, the patient can continue in either a non-surgical or surgical procedure.[7]

Non-surgical options can include medications, weight-bearing exercises, physical therapy to encourage mobility and electronic bone growth stimulation.[9] When these methods fail and pain persists, surgery may be necessary to prevent femoral head collapse, repair damaged bone or to receive a total joint replacement. Surgical options include core decompression, bone grafting or total joint replacement.[9]

Q: What is core decompression?

A: Core decompression is a surgical technique to decompress bone lesions associated with Avascular Necrosis that involves creating one or more channels into the dead bone (necrotic lesion). Creating a channel into the necrotic lesion is intended to relieve intraosseous pressure within the bone and provide a channel to restore blood flow to the diseased area.[10,11] Often, core decompression involves the removal of a plug of bone out of a necrotic lesion.

Core decompression has been demonstrated to lower pressure in the affected bone, and can decrease pain in some patients presenting with Stage 1 or Stage 2 AVN.[12-16] During a core decompression procedure, your doctor may choose to augment the procedure with a bone graft, or biologic such as platelet-rich plasma or bone marrow aspirate (BMA).

Q: Is there any clinical literature supporting biologically augmented core decompression?

A: [17] In a clinical study, patients with stage 1 and 2 AVN were treated with either core decompression or core decompression with a BMA augmentation.[17] Five years after treatment, the core decompression plus bone marrow aspirate group had a significant decrease in pain (p=0.129) and improved joint symptoms. In addition, the portion of bone affected by lesions in the hip decreased by 42% at year five for the core decompression plus bone marrow aspirate group compared to 22% for the control group.

Patients in the core decompression with BMA group experienced significantly less progression to Stage 3 disease than patients with core decompression alone (p=0.038). This study also showed significant pain reduction (p=0.009) in the core decompression with BMA group compared to core decompression alone.

Results of the study are not necessarily typical, indicative, or representative of all recipient patients. Results will vary due to health, weight, activity and other variables. Not all patients are candidates for core decompression with BMA. Only a medical professional can determine the treatment appropriate for your specific condition. Talk to your surgeon about whether core decompression with BMA is right for you and the risks of the procedure. For additional information or to find a surgeon near you, visit www.zimmerbiomet.com.