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Case report

A Case Report on Osteoid Osteomas:An Overview

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A R T I C L E I N F O

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Tumour.

A B S T R A C T

A typical kind of bone tumor is an osteoid osteoma. They may cause the patient great pain and misery even when they are not malignant. Getting rid of the discomfort is the main goal of treatment. Nonsteroidal anti-inflammatory medications (NSAIDs) or surgery were traditionally used to treat these tumors in the past. However, due to their efficiency and low risk, percutaneous ablative treatments have grown increasingly well-liked. The first method of treating these tumors was radiofrequency ablation. Microwave ablation has grown in acceptance recently. Nevertheless, the literature on this medication's safety and efficacy is scarce. In this article, we review the existing research on microwave ablation and discuss our experience utilizing it to treat osteoid osteomas in patients. Osteoid osteoma may be treated safely and successfully using microwave ablation. [1]

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Introduction

A small, benign tumor known as an osteoid osteoma often appears in the long bones of the lower extremities. The thigh bone is the most typical site, but it can also happen in the hand bones and, very rarely, in the lower spine. In this instance, the right femur contains the osteoid osteoma. Osteoid osteomas typically have a diameter of less than 1.5 cm and are non-growing. They frequently promote the development of reactive bone around them, though. They also manufacture osteoid bone, a special kind of aberrant bone material. The nidus, which may be seen as a distinct area on X-rays, is the primary component of the tumor that is created by this osteoid bone and the tumor cells. Any bone in the body can develop osteoid osteomas, although they most frequently affect the bones in the legs. They can also be present in the spine, hands, and fingers. [1]

Although osteoid osteomas can develop at any age, they are most frequently detected in people between the ages of 4 and 25. About three times as many men as women experience this condition. These tumors are benign, which means they aren't cancerous and don't spread to other body areas.

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CAUSE:
It is unknown causes osteoid osteomas. [2]

SYMPTOMS:
A tumor called an osteoid osteoma
produces a dull, agonizing discomfort of average intensity. Particularly at night, this pain may intensify and become very uncomfortable. It does not frequently relate to physical activities. In some circumstances, people may endure this annoying, painful achefor years before seeking medical help. Additionally, depending on where the tumor is, edema might happen.

DOCTOR EXAMINATION:

To identify the tumor in you or your child, the doctor will perform a physical examination in addition to imaging investigations and other testing.

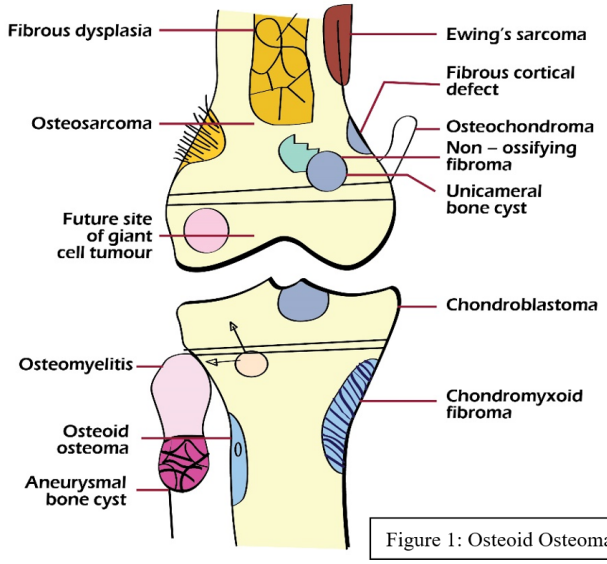


Figure 1: Osteoid Osteoma

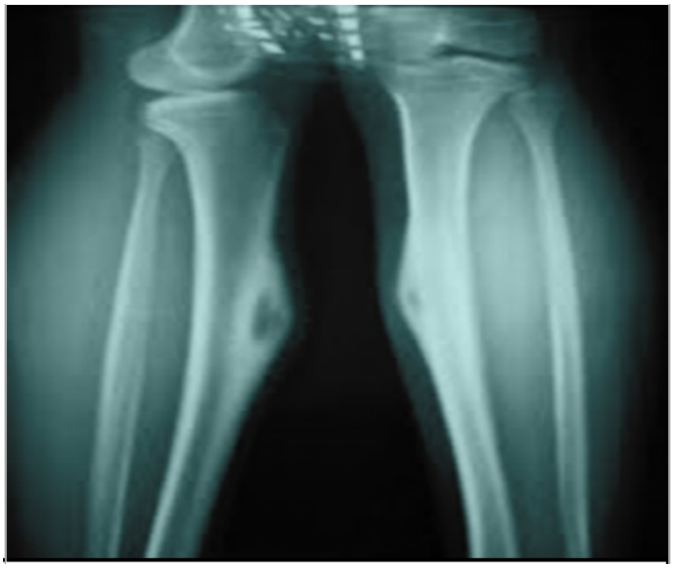
STUDIES IN IMAGING:

Figure 2: X-ray of Osteoid Osteoma

X-rays are effective at identifying osteoid osteoma because they produce detailed images of dense objects like bones. An X-ray can be used to investigate a sore area and may reveal thicker bone encircling a smaller, lower-density central core. This stands out as the tumor's distinctive feature.When examining a lesion, a computed tomography (CT) scan is used to produce a cross-sectional image of your bones. The tumor's nidus, or center, is frequently visible.

BIOPSY:

To confirm the osteoid osteoma diagnosis, a sample can be needed. A tissue sample from the tumor is removed during a biopsy and viewed under a microscope. The doctor may use a local anesthetic to numb the region before taking the sample with a needle. A biopsy can also be carried out as a quick surgical operation. A biopsy may not be required if imaging studies strongly suggest osteoid osteoma in lieu of other investigations. The doctor may request additional imaging tests to rule out any additional bone issues, such as an infection or cancerous tumor.



An infection may also be ruled out using specific blood tests. [3]

MANAGEMENT:

Non-Surgical Management:
Within a few years, the majority of osteoid osteomas will gradually disappear. Regular use of over-the-counter nonsteroidal anti-inflammatory medicines (NSAIDs), such as aspirin, ibuprofen, and naproxen, provides pain relief for some people.

Surgical Management:

Many patients can't take NSAIDs for long stretches of time, or they don't want to wait years for the tumor to go away on its own. In such circumstances, patients or their families might think about surgery as a substitute.One surgical approach for treating an osteoid osteoma is curettage. It entails removing the entire tumor, in particular the nidus or center core, by scraping or scooping. As failure to do so may result in regrowth, the doctor will take painstaking care to ensure full eradication of the tumor.
In this type of surgery, the surgeon makes an incision in the skin and soft tissues to gain access to the tumor and get to the bone. The success rate of this procedure is often very high. It does, however, carry some dangers, including general anesthesia, infection, haemorrhage, and possible damage to adjacent tissues.
Modern treatments like radiofrequency ablation, which uses minimally invasive methods like CT-guided radiofrequency ablation, are available. Through the use of a high-frequency electrical current, the tumor is heated and destroyed during this process. An orthopedic surgeon or an interventional radiologist can carry it out.Either you or your child will receive general anesthesia or a regional pain block with sedation prior to the surgery. Using a CT scan, the doctor will identify the tumor's location. A radiofrequency probe will then be put inside the tumor. The probe will successfully destroy the tumor tissues by heating them to a temperature of about 90 degrees Celsius. The tissues in the area are only slightly harmed by this procedure. [4]
In the majority of patients, a single radiofrequency probe treatment is sufficient to adequately treat the tumor. The majority of the time, this treatment is carried out as an outpatient, allowing patients to go home with a light painkiller.[6]

RECOVERY:

Depending on the procedure and the location of the tumor, the time required to resume regular activities may vary. Patients frequently return to work or school in a few days, albeit with some restrictions. Most patients receive symptom reduction 24 hours after radiofrequency ablation. To assist in the recovery of you or your kid, your doctor will provide detailed instructions. [5]

CASE DESCRIPTION:

For four months, the Patient had pain in her right leg. Even when the discomfort was alleviated with medicines, it got worse at night. A CT scan was conducted, and the results showed that the upper right femur included a lytic lesion with a central sclerotic nidus. The lytic lesion is 6mm in size.

MRI SCREENING:
An MRI scan indicated a large, 10 cm-long cortical thickening in the inner section of the upper right thigh bone. The STIR sequence displayed bright signals that were a little bit indistinct and had a 4x4 mm area of extreme brightness. These results, particularly in the right thigh bone, are consistent with osteoid osteoma.

PHYSICAL EXAMINATION FINDINGS:

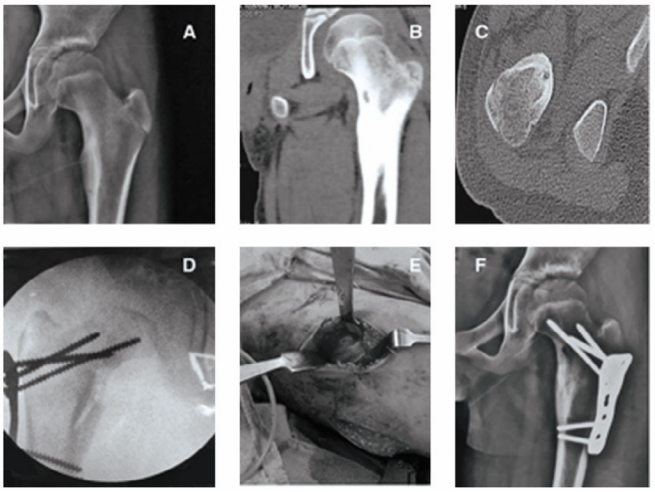
The patient was afebrile, aware, and oriented when examined.

STATUS VITAL:

Blood pressure was 120/80 mm Hg, oxygen saturation was 98%, and heartbeat was 72 beats per minute. The temperature was 98.6°F. Cardiovascular system S1S2+ and Breathing system NVBS+.

OPERATING A PROCEDURE NOTES:

Figure 3: Surgical Procedure



Ablation of osteoid osteoma in the right femur using guided microwave: A spinal anesthetic was used during the procedure, along with stringent

aseptic practices. A microwave antenna was placed into the osteoid osteoma nidus located in the center of the right femur. Applying 25 watts of power for 15 seconds was used to perform the ablation.There were no immediate postoperative problems.The patient had a good recovery. Vitals are steady.Complete blood count, prothrombin, and hepatitis B surface antigen have all been performed in the laboratory.

GENERAL GUIDELINES:

- Promoting walking is a good idea.
- No need for bed rest.

CONCLUSION:

Osteoid osteoma, which makes up around 10% of all benign bone tumors, is a benign bone tumor. The treatment plan will, however, be determined by the specialist's thorough history and physical examination as well as the radiologist's interpretation of the imaging results.

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