

Osteophyte (Bone Spur) – A Case Study

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ABSTRACT:

Osteophytes, or bone spurs, are bony projections that develop at the edges of synovial joints, primarily as a result of cartilage degeneration in conditions like osteoarthritis. While often asymptomatic, these growths can lead to pain, stiffness, and limited mobility when they compress surrounding tissues or nerves. This case study focuses on Mr. S, a 50-year-old male who presented with persistent swelling and pain in his left elbow, aggravated by weight-bearing activities. Diagnostic imaging revealed a bone spur, and laboratory tests indicated elevated inflammatory markers, suggesting an underlying inflammatory condition. Mr. S underwent surgical excision of the osteophyte and the olecranon bursa, followed by a structured postoperative care regimen that included analgesics and physiotherapy.

Keywords: Osteophytes, bone spur, olecranon bursa

I. INTRODUCTION:

Osteophytes are often called bone spurs, are fibrocartilage-capped bony outgrowth that usually appear at the edges of synovial joints. They develop as a reaction to injury to the articular cartilage, especially in diseases like osteoarthritis (OA), where joint deterioration is common.^[1]

Although osteophytes are frequently asymptomatic, if they touch nearby tissues or nerves, they may occasionally result in discomfort, stiffness, or limited mobility. The most common locations for osteophytes to form are the hands, knees, hips, and spine. They may develop more quickly as a result of age, joint trauma, and other types of arthritis. Although they are not always an issue, their existence may indicate underlying joint deterioration, and if they cause pain or hinder normal joint function, treatment may be necessary.^[2]

SYMPTOMS:

The symptoms of osteophytes (bone spurs) can vary depending on their location and size, as well as whether they are affecting surrounding structures. Common symptoms include:

- Pain: Frequently felt in weight-bearing joints such the spine, hips, and knees.
- Stiffness: The inability to move a joint, especially one in the lower back, shoulders, or neck.
- Numbness or tingling: When a bone spur pushes against spinal nerves, it can cause radiculopathy, which causes feelings in the arms or legs.
- Limited Range of Motion: This makes it difficult to execute certain movements and is particularly apparent in joints like the knee and shoulder.
- Pain or Swelling: Because the bone spur irritates the affected joints, they may experience pain or swelling.
- Muscle Weakness: Muscles, especially those in the arms and legs, may become weaker if nerve compression continues.^[3]

CAUSES:

- Osteoarthritis: The most prevalent cause, in which bone spur development results from cartilage degradation.
- Previous Joint Injuries: Osteophytes may develop in the afflicted region as a result of damage from prior injuries.
- Age: As people age naturally, their joints deteriorate, which raises the possibility of osteophytes.
- Joint Overuse: Bone spurs may form as a result of repetitive use of certain joints during sports or other activities.
- Improper Posture: Uneven joint tension caused by poor posture might encourage the growth of osteophytes.^[4]

DIAGNOSIS:

• Clinical Evaluation:

- Symptoms: Symptoms: Joint discomfort, stiffness, and decreased range of motion are commonly reported by patients.
- Physicians evaluate joint pain, oedema, and mobility restrictions.

• Imaging Studies:

- **X-rays:** The main technique for identifying osteophytes. Bony projections at the joints' margins can be seen on X-rays, which can be used to determine the degree of osteoarthritis and confirm the presence of osteophytes.
- **MRI:** Provide a thorough overview of the soft tissues and bones, making it easier to assess any damage to the surrounding structures and cartilage.
- **CT Scans:** Beneficial for complicated joints, particularly when surgery might be an option.

• Additional Tests:

- **Blood Tests:** Although they are not unique to osteophytes, these can aid in ruling out other illnesses that might produce comparable symptoms, such as rheumatoid arthritis.
- **Joint Aspiration:** A sample of joint fluid may occasionally be collected to look for indications of infection or inflammation.^{[5][6]}

TREATMENT:

1. Pharmacological Management:

- **NSAIDs (Nonsteroidal Anti-Inflammatory Drugs):** Sometimes, to check for signs of inflammation or infection, a sample of joint fluid is taken.
- **Corticosteroid Injections:** In severe cases corticosteroid injections provide pain relief.

2. Surgical Management:

- **Arthroscopy:** This procedure, performed through small incisions in the joint, focuses on removing bone spurs. It is commonly used

when the spurs lead to severe pain or impair joint function.

- **Osteophyctomy:** This procedure entails the surgical removal of bone spurs to alleviate symptoms, especially when the spur is pressing on nerves or causing joint impingement.
- **Joint Replacement:** In advanced cases of osteoarthritis with symptomatic bone spurs, joint replacement surgery may be required to restore function and relieve pain.^[7]

CASE DESCRIPTION:

Mr. S, a 50-years-old male, patient presented to the orthopaedic department with complaints of swelling over his left elbow for the 1 year and which has gradually increased in size. He states that the pain increases when lifting weights. He has no past medical or medication history. The patient's vital signs, including blood pressure (120/80 mmHg), pulse rate (60 beats per minute), respiratory rate (20 breaths per minute), and temperature (97°F), were found to be within normal limits. The laboratory investigation of the patient revealed an increased ESR (22 mm/hr), uric acid (8.8 mg/dl), and positive results for rheumatoid factor and C-reactive protein. On local examination, a swelling measuring 3 x 3 x 2 cm was noted on the posterior aspect of the left elbow joint, with no tenderness noted. The X-ray of the left elbow, in both anteroposterior (AP) and lateral (LAT) views, revealed the presence of a bone spur on the left elbow.

Based on the patient's demographics and imaging study report, a diagnosis of a left elbow bone spur was made. The patient subsequently underwent excision of the left elbow olecranon bursa and the bony spur. Following the procedure, the patient received treatment with antibiotics, analgesics, antacids, physiotherapy, and other supportive measures. The patient's condition improved during the course of treatment, and they were discharged in stable condition.



Figure: 1



Figure: 2

II. DISCUSSION:

Bony growths called osteophytes, often called bone spurs, form along the edges of joints, usually in reaction to cartilage deterioration. They are frequently linked to diseases like osteoarthritis, in which bone production is a compensatory response to joint degradation. The main process is the body's effort to stabilise the joint by promoting bone development around its margins. Osteophytes are often asymptomatic, but depending on their size and location, they can produce a variety of symptoms, such as pain, stiffness, and limited range of motion. In instance, neurological symptoms including numbness, tingling, and muscle weakness can result from osteophytes pressing on nerves, as is the case with spinal involvement.^{[8][9]}

A classic illustration of a symptomatic bone spur in the elbow is provided by the case of Mr. S. His main complaint was pain and swelling, which was made worse by weight-bearing activities and was characteristic of osteophyte growth in the joint. Imaging scans that showed a spur in the left elbow coupled with raised inflammatory markers including ESR and C-reactive protein supported the diagnosis even though there was no discernible discomfort. These results indicate the co-existence of an inflammatory component, which may be connected to the positive rheumatoid factor in the lab results. They are also consistent with the inflammatory process frequently observed in situations related to osteophytes.^{[10][11]}

In order to cure Mr. S, the bone spur was surgically removed. This procedure is frequently used when osteophytes significantly impede joint function or cause pain. He underwent normal postoperative treatment, which included painkillers and physiotherapy to restore joint mobility, after

the excision of both the bone spur and the olecranon bursa.^{[12][13]}

III. CONCLUSION:

Bony growths known as osteophytes, or bone spurs, are frequently linked to osteoarthritis and arise in response to joint deterioration. If they put pressure on surrounding structures, they can result in discomfort, stiffness, restricted movement, and neurological problems, even though they are frequently asymptomatic. In the instance of Mr. S, a typical presentation of a painful osteophyte in the elbow was identified by imaging and clinical evaluation; lab results indicated an inflammatory component. The patient's condition improved following surgical excision of the bone spur and proper postoperative care, underscoring the need of a customised approach in treating osteophyte-related symptoms.

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CONFLICT OF INTEREST:

No conflict of interest involved.

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