

# Advancing Health

**A CASE STUDY** from MedStar Washington Hospital Center

## Combination Infusion and Surgical Treatment for Giant-Cell Tumor

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### **Abstract**

A 53-year-old female was found to have an aggressive giant-cell tumor in the proximal humerus. Rather than pursue a typical treatment of resection, a combination of infusions and surgery was used. The approach was successful in alleviating the condition while also sparing the patient's shoulder joint.



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# CASE STUDY

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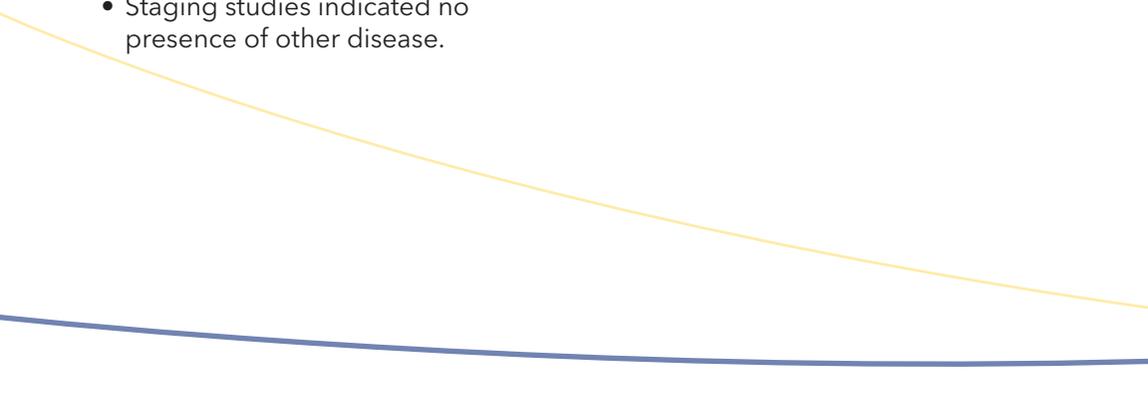
### Patient Presentation

- A 53-year-old female with an extensive smoking history presented with progressive shoulder pain over several months. The condition began as activity-related pain and progressed to constant severe pain.
- The condition had been treated symptomatically for several months before the patient's referral to the MedStar Orthopaedic Institute.

### Assessment

- X-ray and MRI showed an aggressive lytic lesion involving the entire metaphysis and extending into the diaphysis of the proximal humerus with destruction of the lateral cortex. Imaging also revealed partial destruction of the medial cortex and extension into the soft tissue.
- The differential diagnosis included metastatic disease, a primary bone malignancy, in addition to a giant-cell tumor. The patient underwent a CT-guided core needle biopsy that confirmed the presence of an aggressive giant-cell tumor.
- Staging studies indicated no presence of other disease.

### Treatment

- Traditional treatment for a giant-cell tumor in this area with extensive cortical destruction is resection of the proximal humerus with prosthetic replacement. Although this intervention is generally successful in treating the tumor and alleviating pain, it typically results in a significant impairment in the function of the shoulder.
  - After being advised of alternative treatments, the patient chose to undergo neoadjuvant treatment with denosumab over a two month period, which allowed new bone formation around the periphery of the tumor.
  - This approach allowed the patient to undergo a smaller procedure of curettage, cryosurgery, and cementation. This intervention would preserve the natural shoulder joint and normal shoulder range of motion.
  - No other factors required additional consideration for the surgery, which was performed with no issues or complications.
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**Brock Adams, MD**

*"In carefully selected patients, a multimodal approach to treating giant-cell tumors offers an excellent opportunity to achieve an oncologically effective treatment while also allowing them to retain as much function as possible. This is a particularly valuable option for otherwise healthy patients who wish to retain their active lifestyles as they age."*

## **Outcome**

- Patient was discharged on post-op day two, and was taking only over-the-counter pain medications after the first week.
- Three months post-op, the patient had regained full range of motion in her shoulder with no pain.
- An examination at two years post-op found no sign of any recurrence or metastatic disease and continued normal use of the shoulder.

## **Conclusion**

The treatment options for giant-cell tumors have changed significantly over recent years. Although the optimal use of new medical and adjuvant therapies is still not well-defined, a multi-modal approach offers an attractive, less-invasive treatment option with positive long-term outcomes for some aggressive tumors.

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To refer a patient, or to schedule an informational interview with Dr. Adams, please call **855-202-8360**.

To learn more about MedStar Orthopaedic Institute at MedStar Washington Hospital Center, visit **[MedStarWashington.org/Orthopaedics](https://www.MedStarWashington.org/Orthopaedics)**.

For a complete list of MedStar Orthopaedic Institute providers, visit **[MedStarOrthopaedicInstitute.org](https://www.MedStarOrthopaedicInstitute.org)**.

MedStar Washington Hospital Center is a 912-bed, major teaching and research hospital. It is the largest private, not-for-profit hospital in the nation's capital, among the 100 largest hospitals in the nation and a major referral center for treating the most complex cases.

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