





Images in Rheumatology

Giant Geode at the Humeral Head in the Rheumatoid Shoulder Treated With Allograft Bone Grafting and Shoulder Arthroplasty

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Geodes are subarticular cystic lesions caused by inflammatory changes in the synovial lining of the articular cavity and can destroy cartilage and bone. This lesion occurs with rheumatoid arthritis (RA), but a single giant geode is rare.¹

A 65-year-old man complained of progressive pain and restriction of his right shoulder function for the past year. He had been diagnosed with RA 7 years ago and treated with 12 mg of methotrexate per week. Laboratory tests showed C-reactive protein level of 0.96 mg/dL (reference value < 0.14 mg/dL), matrix metalloproteinase-3 of 332 ng/mL (reference value 36.9–121.0 ng/mL), rheumatoid factor level of 13 IU/dL (reference value < 15 IU/dL), and anticyclic citrullinated peptide antibody positivity. The Disease Activity Score in 28 joints was

assessed as moderate disease activity. Magnetic resonance imaging showed a large cystic lesion at the humeral head measuring 30 × 30 × 30 mm with homogenous signal intensity and destruction of the glenohumeral joint (Figures 1A,B).

A giant geode has been reported only in the elbow, hip, and knee joints,^{2,3,4,5} and we have found no reports of a giant geode in the shoulder joint. Surgical treatment is necessary for giant geodes because of the risk of spontaneous fracture. In this case, allograft bone grafting and total shoulder arthroplasty were performed after the debridement inside the geode (Figure 2). Histopathological findings demonstrated fibrin deposition and osseous fragment within the synovium. The patient had no pain and his shoulder function had improved 24 months after surgery.

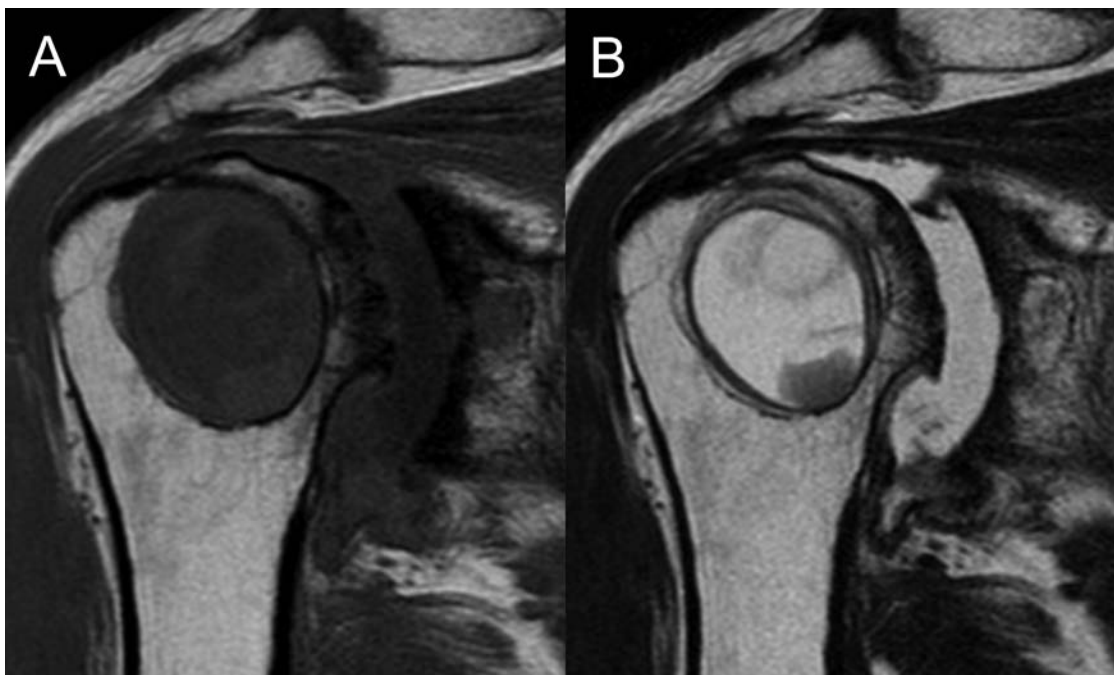


Figure 1. Magnetic resonance imaging of the right shoulder shows a large cystic lesion and proliferation of the synovium at the humeral head. (A) T1 coronal image, and (B) T2 coronal image.

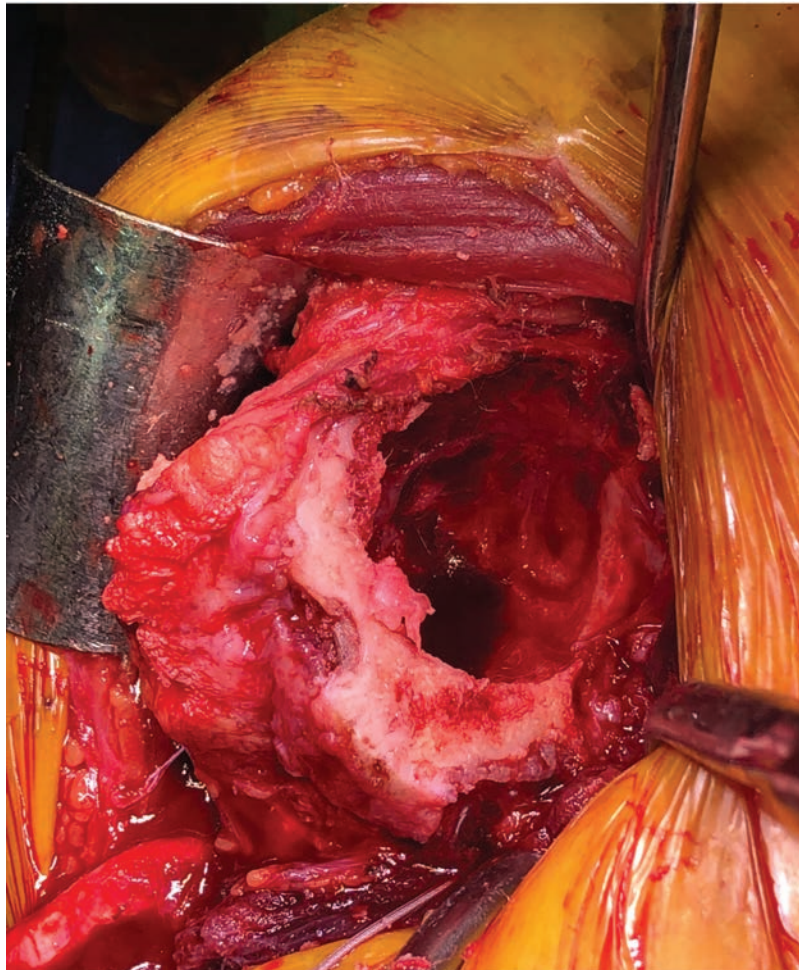


Figure 2. Intraoperative photograph shows proliferation of the synovium in the cystic lesion.

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