

TABLE 6-1

OSTEOARTHRITIS AND POST-TRAUMATIC ARTHRITIS CLASSIFICATION SYSTEMS FOR THE ELBOW

BROBERG AND MORREY	HASTINGS AND RETTIG
Grade 1: mild joint space narrowing with minimal osteophyte formation	Class I: degeneration in the margins of the ulnotrochlear joint with the presence of coronoid and olecranon spurring; absence of degenerative changes within the radiocapitellar joint
Grade 2: moderate joint space narrowing with moderate osteophyte formation	Class II: class I with mild joint space narrowing within the radiocapitellar joint, without subluxation of the radial head
Grade 3: severe degenerative change with gross destruction of the joint	Class III: class II with radiocapitellar subluxation

- ♦ Anterior osteophytes of the coronoid and distal humerus
- ♦ Posterior osteophytes of the olecranon process⁹ and distal humerus
- Anteroposterior x-rays commonly reveal the following:
 - ♦ Ossification and osteophyte formation of the olecranon and coronoid fossa
- Broberg and Morrey and Hastings and Rettig radiographic classification systems have shown good intraobserver and interobserver reliability (Table 6-1) for both OA and post-traumatic arthritis.¹⁰
- More recently, a computed tomography scan has been recommended after an increased appreciation of the 3-dimensional nature of the disease process.
 - ♦ Computed tomography scan as well as 3-dimensional reconstructions (Figure 6-2) are helpful when planning surgical resection of impinging osteophytes.¹¹

Recommended reading for important change in best practices
- Inflammatory arthritis
 - The most common and well-described inflammatory arthritis of the elbow is RA, which is considered to be the most common cause of elbow arthritis.
 - Unlike primary OA, RA frequently affects the elbow and can be bilateral.
 - The underlying etiology of RA is that of a synovitis that leads to progressive destruction of the elbow joint.
 - RA primarily involves the ulnohumeral joint early in the disease process, with the remaining segments of the elbow joint becoming involved as the disease progresses.
 - Most patients with RA of the elbow have painful loss of motion and function.
 - Patients will often demonstrate a mild but persistent flexion contracture due to effusion and synovitis, which causes patients to adopt an obligate flexed position to minimize painful joint capsule distention.¹²
 - Neuropathy may be present because inflamed synovium can invade the soft tissues and directly or indirectly lead to compression of the radial and ulnar nerves.
 - With disease progression, ligamentous destruction can also occur, leading to instability.
 - X-rays are diagnostic and several radiographic staging systems have been described: