Update on the Evaluation and Treatment of Radial Head Fracture

The elbow is a complex joint with two bones in the forearm (the radius and the ulna) that work together and the upper (humerus) meeting those two bones to form the joint. So long as everything lines up properly, the elbow bends and straightens and the forearm rotates (palm up and palm down). But a fracture of the radial head can alter the entire biomechanics of the elbow.

In this article, hand surgeons from the Hand and Upper Limb Centre in Ontario, Canada bring us up to date on the evaluation and treatment of radial head fractures. A complete evaluation includes taking a thorough history, examinin patient's entire arm carefully, and using imaging to identify all bony and soft tissue damage.

Some fractures can be difficult to see on X-rays so CT scans and MRIs may be needed. Most of the time, X-rays are enough to diagnose fractures and dislocations. But occasionally it is necessary to investigate further because the patie symptoms and clinical presentation suggest one or more associated injuries (e.g., ligament tears, other fractures, involvement of the articular (joint) surface).

Gathering all of this information is important before forming a final plan of care. Nonoperative care may be possible v good results if the elbow is stable, there are no dislocations, no soft tissue damage, and no bleeding into the joint. But complex injury patterns and any instability points to the need for surgical repair or reconstruction.

One injury in particular, called the terrible triad always requires surgery. Patients with the terrible triad have a posteri elbow dislocation, radial head fracture, and fracture of the coronoid (the end of the humerus that helps form the hinge portion of the elbow joint).

The authors use the Mason classification of radial head fractures to help in planning treatment. There are four groupin described as follows: Type 1 the fracture is not displaced (separated). Type 2 is displaced. With Type 3 the whole radi head is broken into tiny pieces and Type 4 represents any fracture of the radial head with elbow dislocation.

Some experts make one other distinction: they suggest Type 2 radial head fractures can also describe fractures with m than a two millimeter separation between the fractured ends and more than one-third of the joint being involved.

The authors provide X-rays and CT scans to show how they evaluate and surgically treat various types of radial head fractures. Every effort is made to preserve the joint but sometimes it is necessary to either remove the radial head and replace it or perform an entire elbow joint replacement. Follow-up rehab and complications are also described for all postoperative patients.

Simple Type 1 radial head fractures (no displacement, no dislocation, no associated injuries) may not need any follow rehabilitation. But when stiffness of the joint or surrounding soft tissues prevents normal motion and function, then Physical Therapy is advised.

The therapist and surgeon work together to design the best program for each patient. Motions that are allowed or prohibited depend on which soft tissues are damaged and the type of surgery that was performed. It may take some ti but most patients have good-to-excellent results.

Reference: Albert Yoon, MBChB, et al. Radial Head Fractures. In The Journal of Hand Surgery. December 2012. Vol 37A. No. 12. Pp. 2626-2635.