

Step-By-Step Approach to Elbow Problems in Athletes

Any time an athlete injures his or her elbow, an accurate diagnosis is absolutely essential to providing the best treatment. Whether the examiner is an orthopedic surgeon, physician's assistant, or Physical Therapist, there is a recommended order to the patient history and physical examination.

In this article, surgeons from the Center for Shoulder, Elbow, and Sports Medicine at Columbia University in New York City provide a step-by-step approach to the evaluation of elbow injuries in throwing athletes. They suggest that a thorough understanding of normal elbow anatomy and elbow joint biomechanics will help the examiner assess for and recognize abnormal or pathologic conditions.

The first step is to take a thorough patient history (e.g., what happened, when did it happen, how did the injury occur, what has been the patient's health history up to the date of the examination). When taking a patient history there are the usual questions about the location, type, duration, and intensity of pain. Hand dominance (right or left handed) is also recorded.

The athlete is asked to give as many details as possible about the symptoms. Anything that the athlete can tell makes the problem better or worse is important information. Type of sport activity engaged in at the time of the injury is also important (e.g., overhead throwing, specific tennis strokes). Information about previous injuries or surgeries is gathered.

The examiner often has a pretty good idea what's wrong with the elbow even before examining it. The list of possible diagnoses can be formulated just based on the patient's responses to questions. For example, pain on the medial (inside) of the elbow points to the possibility of a ligamentous problem.

On the other hand, symptoms like numbness and tingling down the arm may point more to a problem with nerve compression. There are special tests used to evaluate the status of the three nerves that pass through the elbow and other ligamentous tests to determine how stable the joint is.

Likewise the information collected during the exam guides the examiner in selecting the most appropriate tests to rule in/rule out specific conditions. Are imaging studies needed? Do visual inspection and palpation suggest the necessity of an X-ray, MRI, or CT scan? Will an arthroscopic examination be necessary?

Moving the patient's arm through elbow flexion, extension, supination (palm up), and pronation (palm down) can reveal important diagnostic information. Too much elbow motion suggests ligamentous injury. A block in motion, locking, catching, or other causes of decreased joint motion point more to a possible fracture, bone spurs, or other type of intra-articular (inside the joint) injury.

The authors provide detailed instructions for various tests (e.g., joint compression tests, pivot-shift test for stability, valgus-varus tests, hook test for biceps tendon rupture) along with photos of each test and fluoroscopic views inside the joint.

Tests are described coming from all four directions around the elbow (anterior or front, posterior or back, medial or side closest to the body, and lateral or side away from the body). And finally, there is a special section on considerations when evaluating the child or teen who has not completed his or her full growth yet.

The authors conclude by saying that a well organized assessment of elbow injuries in throwing athletes will lead to the most appropriate treatment and therefore, faster return-to-sports. By using their suggested

step-by-step interview and exam, the examiner can stay focused and produce an accurate diagnosis.

Reference: Stephanie H. Hsu, MD, et al. Physical Examination of the Athlete's Elbow. In *The American Journal of Sports Medicine*. March 2012. Vol. 40. No. 3. Pp. 699-708.