The objective of this case is to educate athletic trainers regarding a progressive treatment of clavicle fractures in athletes and physically active individuals.

The athlete is a 23 year-old defensive back who reported to the athletic training staff during a game complaining of intense right anterior shoulder pain after making a tackle. The athlete presented with point tenderness and crepitus over the distal third of his right clavicle. No deformity was present upon visual inspection or palpation. Athlete's past medical history was significant for right clavicle fracture one year earlier. Active and passive range of motion caused pain at approximately 90 degrees of flexion and abduction. Flouroscopy performed by the Team Physician in the Athletic Training Room revealed a stable fracture of the distal third of the right clavicle. The athlete was placed in a sling and removed from further activity.

The athlete received plain radiographs the following Monday at the physician’s office which confirmed the initial finding of a stable fracture. The decision was made to attempt open reduction internal fixation surgical repair using bone glue rather than treat the fracture with immobilization or open reduction internal fixation using metal hardware. Prior to the surgery, the athlete had blood drawn and separated to extract the platelets. The athlete was placed under anesthesia and the fracture was stabilized by injecting a combination of bone healing compound and platelets into the fracture site. The surgical procedure was performed under guided imaging without the use of an arthroscope.

Post-surgical care included three days of strict immobilization using a sling and swathes. Then the athlete completed a two week period using only a sling and was allowed to perform active assistive right shoulder range of motion to ninety degrees and active right elbow, forearm and wrist range of motion as tolerated. Bone stimulation was implemented immediately after surgery to promote callous formation. Athlete also completed aerobic conditioning program for lower extremity as tolerated. Three weeks after surgical repair the athlete demonstrated pain-free active range of motion of the involved shoulder and was allowed to initiate progressive resistive strengthening exercise and progress to functional training.

The uniqueness of this case is not the injury, but the surgical repair technique and the time to return to full activity. To the author’s knowledge, based on an extensive review of the current literature, this is the first isolated use of bone healing compound for a clavicle repair. The use of bone glue as an adjunct to hardware has become popular when repairing humeral fractures and femur fractures, particularly in patients with osteoporosis.

The bone glue technique presents a number of benefits in the presence of a stable fracture. The surgical procedure is far less invasive and therefore, creates less secondary tissue damage, resulting in a more rapid return to activity after sufficient bone healing has occurred. Additionally, although the healing process of the bone may be accelerated and the glue allows for excellent callous formation and a strong repair.

At one month post injury, the fracture appears stable and the athlete is progressing through functional rehabilitation without incident. The anticipated date for his return to full activity is four weeks after surgical repair.

Key Words: Clavicle Fracture, Surgical Repair, Bone Glue, Bone Healing Compound

This case study will be updated to include a final outcome prior to the January 2004 meeting.