

Casting & Splinting for Acute & Chronic Cubital Tunnel Syndrome

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When looking at casting and splinting, we basically think of the fixation and stabilization of fractures. With the ever-growing world of sports medicine and occupational therapy, we are finding countless uses for these very special products. For example, the use of fiberglass casting material allows for innovative and functional uses that the plaster would never allow. The casting and splinting for cubital tunnel syndrome are an area where practices (like mine) have found considerable success.

Cubital tunnel syndrome is an irritation to the ulnar nerve in the area of the elbow. Everyone has been the victim of an assault to their ulnar nerve, which in layperson terms is when you hit your "funny bone". Usually when this happens there is a sharp pain in the elbow, due to some trauma, along with continued numbness down the forearm radiating towards the fourth and fifth finger. On an acute basis this pain or numbness will last only for a few seconds, but with repeated irritation this pain and subsequent damage can last for days. Cubital tunnel can also be irritated by an over use syndrome. This over use is more related to positioning than actual repetitive motion. Sitting at a keyboard with the arm excessively flexed or sleeping with a pillow flexed hard between your head and shoulder can bring along a tremendous amount of discomfort. A neuritis can develop, which is an inflammation of the nerve that is pressured in the area of the cubital tunnel (a very small notch within the distal humerus and following along distally next to the ulnar). Normally, physical recommendations along with inflammatory or analgesic drugs, are used in order to prevent or treat this type of problem. As a result, the patient avoids specific irritation, such as direct pressure, and works on range of motion exercises.

Casting for problems with the cubital tunnel is done in order to restrict motion in the elbow joint. Excessive flexion or hyperextension can bring along problems. The ideal angle is in debate, but the goal is to hold the elbow joint in a position where the ulnar nerve is safest. A cast is applied with the elbow flexed at anywhere between sixty and fifty degrees (an ideal is approximately fifty-eight degrees). A long arm cylinder cast is applied at the given angle, leaving the wrist free.

Two problem areas immediately arise, the head of the ulnar and the olecranon process. These areas must be padded exceptionally well, so as not to risk skin breakdown. To be safest, the head of the ulnar should be left totally out of the cast. For acute problems this type of cast can be left on for no longer than two weeks, only to prevent stiffness in the elbow joint.

With the growing popularity of the use of "night splinting" in both carpal tunnel and plantar fasciitis a very functional "night splint" can be manufactured out of the cylinder cast. In creating this specialty cast, one must trim out the existing fiberglass material and re-pad the splint. Next, it is necessary to apply it to patient with an ace bandage. The critical part of preparing the cubital tunnel night splint is making sure there is no direct pressure on the ulnar nerve. The splint also must have adequate strength to keep the elbow joint in place so that it does not allow excessive flexion or extension. Taking these areas into consideration, first you must trim the fiberglass low enough over the olecranon process so not to cause pressure on the ulnar nerve. Next, you need to leave as much of the circumferential fiberglass around the rest of the arm as possible, which will give the splint the added strength that is needed. The splint is then wrapped with ace bandage to keep it in the appropriate place. As with any specific orthopedic problem, there are countless soft good companies that manufacture new and inventive products that can accommodate these circumstances. Of course these products save the orthopedic technician time, but in turn relinquish us of our creativity.

Rolling a well fitting cast allows for great satisfaction. The application of a well fitting cubital night splint can take up some serious time. Sometimes, you can roll two or three short arms in the same amount of time. So turning to our trusty orthopedic soft goods company is the better of two evils. Their off-the-shelf splint allows for good fixation and ease of application for the patient. Sliding a Velcro strap through a D-ring one handed is easier than rolling an ace one handed. Each has its own positives and they both give us a non-operative solution to a common orthopedic problem.