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Wrist Pain

Anatomy

Conditions: Carpal Tunnel Syndrome • Triangular Fibrocartilage Complex • Thumb Arthritis • Dupuytren's Disease

Procedures: Injections • Nonprocedural Treatments

Surgery

Anatomy

The hand is composed of many small bones called **carpals**, **metacarpals** and **phalanges**. The two bones of the lower arm -- the **radius** and the **ulna** -- meet at the hand to form the wrist. The **Median and Ulnar nerves** are the major nerves of the hand, running the length of the arm to transmit electrical impulses to and from the brain to create movement and sensation.

Conditions

Carpal Tunnel Syndrome

Carpal Tunnel Syndrome (CTS) is a compression neuropathy, i.e. a pinching of the median nerve within the wrist. The carpal tunnel is a bony canal within the palm side aspect of the wrist that allows for the passage of the median nerve to the hand. Pinching or compression of this nerve by the transverse carpal ligament sets into motion a progressively crippling disorder which eventually results in wrist pain, numbness and tingling in the hand, pain consisting of a "pins and needles" feeling at night, weakness in grip and a feeling of incoordination.

WHO GETS CTS?

This disabling syndrome occurs more often in women than men, by a ratio of 3 to 1, usually between the ages of 30 and 50 years. Also, CTS is seen more frequently in people who tend to do forceful repetitive types of work, such as grocery store checkers, assembly line workers, meat packers, typist, accountants, writers, etc. Most patients generally visit their doctor with these complaints, and the diagnosis is confirmed after physical examination and appropriate nerve testing.

HOW IS CTS TREATED?

Treatment for CTS depends upon the stage of the disease. In the early stage, the syndrome can be reversible and is most often treated with appropriate modification in activities, a removable wrist brace, and anti-inflammatory medicines. In moderate stages of the disorder, especially if the numbness and pain continues in the wrist and hand, a cortisone injection into the carpal tunnel can be extremely beneficial. Surgical intervention in CTS is only indicated in those patients in whom non-operative treatment has failed to eliminate their symptoms. In patients with advanced disease, and especially in those who have profound weakness or muscle atrophy, surgical intervention should be done early. CTS should not be left untreated because it can eventually cause permanent nerve damage.

Triangular Fibrocartilage Complex

This is a cartilage similar to the cartilage in the knee that is often torn and does not have an adequate blood supply to it. The reason it is causing discomfort is usually there is a flap of tissue that is flapping back and forth and causes irritation of the joint. For this problem there are three modes of treatment; no treatment, conservative, and surgical.

Conservative treatment would consist of resting the wrist in a wrist brace or a cortisone injection. Usually anti-inflammatory medications and physical therapy is not beneficial. If there is persistent pain despite conservative treatment, arthroscopic surgery with debridement of the tear to give the tear smooth edges is usually very successful. This can be performed under local anesthesia on an outpatient basis with two or three small incisions on the wrist. Occasionally, the cartilage can be repaired.

Thumb (CMC Joint) Arthritis

This is the most common location for arthritis in the hand is due to wear and tear with use of the thumb throughout the patient's years. There is no cure for arthritis but there is treatment falling into three categories; no treatment, conservative, and surgery. Surgery -- as the last resort, when conservative treatment has failed -- consists of a joint replacement using the patient's normal body tissues and involves excising the arthritic bone and replacing it with a tendon taken from the wrist which is rolled up into a ball and used as a spacer and a portion of it is used to reconstruct the ligament.

This is done through a small incision at the base of the thumb and a smaller incision at the base of the wrist to harvest the tendon used for the graft. It is an outpatient procedure performed under axillary block where only the arm goes to sleep. The patient is immobilized in a splint for two weeks, then a thumb spica cast for two weeks and then uses a removable custom made splint for two months while they are undergoing therapy for their thumb.

The first month is to regain range of motion and the second month to regain strength. This concludes a three month postoperative rehabilitation protocol. Patients have a very good success rate with this surgery. Before surgery is considered, conservative treatment is attempted which is aimed at alleviating the symptoms of arthritis. This consists of use of a splint, possible anti-inflammatory medications, possible icing, and occasionally a cortisone injection which usually give good but temporary relief.

Dupuytren's Disease

Dupuytren's disease is a genetically inherited disorder which primarily involves the palmar aponeourosis and its digital prolongations. The primary pathological change is in the fascial tissues of the palm which results in thickening, cord-like formation of contractile bands, and then eventual contractures at the level of the interphalangeal joints.

On occasion, it can be associated with other diseases such as diabetes, epilepsy, or alcoholism. Certain contributing factors increase the likelihood of significant progression. These include a strong family history, early onset of disease, rather extensive bilateral involvement, and the presence of disease in other areas such as the plantar regions of the feet. These contributing factors may lead to a more aggressive course of the disease and possibly even an operation at an earlier age. The disease is seen much more frequently in men than in women and has a tendency to usually appear between the ages of 40 and 60.

Dupuytren's disease has over a 65% chance of being bilateral, and can involve other areas such as the foot, the dorsum of the hand, and other fibrous tissues. It is a slowly progressive disorder which may have periods of temporary arrest, or even a rapid progression. After the nodules have formed, the tendency is for these to coalesce into a cord, which will lead to a flexion contracture at the MCP joints and the PIP joints.

The skin itself can be infiltrated by the disease. Initial treatment is always non-surgical. This would consist of continued observation for progression of the problem. As the disease does not involve any pain, there is no reason for the excision of the nodules or cords until contractures in digits have occurred. If a contracture becomes bothersome or a nodule becomes painful, or if the contracture in the MCPJ exceeds 30 degrees or any involvement at the PIP joint occurs, we would recommend surgical excision. This would consist of a palmar and digital fasciectomy utilizing an axillary block anesthetic. A skin graft taken from the forearm is almost always used.

Long term results are usually quite good. If contractures have developed at the MCPJ and PIP joint, they can usually be corrected to within half of the preoperative level. Recurrence of the disease is possible, but this is usually not associated with further contracture necessitating surgery.

PROCEDURES

Injections

Injections can be performed for some of the common pathologies to help decrease inflammation and alleviate pain.

Nonprocedural Treatments

PHYSICAL AND OCCUPATIONAL THERAPY

This type of therapy may consist of exercises to improve range of motion, strength and conditioning. A good therapist will examine you, assess your deficits and disease and formulate a plan based on optimizing function and minimizing pain. These exercises are specific for the nature of your injury and should be executed under the supervision of a physician who understands your case.

MODALITIES

Modalities include simple age-old treatments such as heat, cold and massage as well as newer treatment methods such as acupuncture, manipulation, and electrical stimulation. Your physician and therapists should formulate an optimal treatment protocol to maximize your healing potential. These modalities are often used in conjunction with Physical and Occupational therapy.

MEDICATIONS

Depending on the nature of your problem, Non-steroidal antiinflammatory drugs ['NSAIDS'], corticosteroids, and opioids [narcotic] medications may be used. If there is a muscular spasm, a muscle-relaxant may help alleviate that aspect of your pain. Narcotics should be minimized and used only for short periods if at all possible due to rapid tolerance and all the attendant risks associated with abuse of a controlled substance.

SURGERY

Dr. Sandhu performs minimally invasive surgeries which result in a rapid recovery and minimal risk to the patient. Although we do not perform large-scale open surgeries in our clinics, there are occasions where a problem requires surgical intervention.

We can help screen potential surgical candidates and send them for evaluation by the appropriate specialist. These surgeons are usually orthopedic surgeons or neurosurgeons with specialized training for the particular disease process involved.