Dupuytren's Contracture

This intrinsic disease of the hand was first described in 1822 by Sir Astley Cooper. It bears the name of Baron Dupuytren who in 1834 described the disease in quarry workers and attributed it to injury. It has been written that Dupuytren brought a patient before a medical school class and, without anesthesia, made an incision and straightened the patient's finger with "an audible crack."

Pretendinous cord contracting the ring finger

The pretendinous cord is excised (fasciectomy) leaving the whitish appearing digital nerves intact as well as flexor sheath

Fortunately our understanding of this disease and its treatment has progressed tremendously. Dupuytren's is an inherited disease genetically appearing mainly in those from northern European ancestry - England, Ireland, Germany, Austria and Scandinavia. In the palm of the hand there is a layer of skin, a fat layer, then a layer of fibrous tissue called palmer fascia. In Dupuytren's this fascial layer becomes diseased forming nodules (myofibroblasts) that progress to thickened longitudinal cords which foreshorten, contracting the fingers toward the palm.

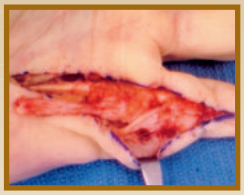
Dupuytren's can grow fast or slow, it can stop and start, it can remain dormant for a short or a long period of time. Put all of this together and it means that Dupuytren's is completely unpredictable. There may be old wive's tales about rubbing this or that potion on the hand to slow the disease or stop it but this is invalid as the Dupuytren's is going to stop or start on its own anyway.

The presence of a nodule alone, without contracture, is not an indication for surgery except in extremely rare instances where the nodule remains markedly painful. Typically a new nodule is painful at first and the pain goes away within a few months. Presence of a contracture or *impending contracture* is the indication for surgery. In fact, when the finger just begins to bend toward the palm or especially if one of the interphalangial joints develops a slight contracture it is one's golden opportunity to remove the diseased tissue and achieve an excellent result. We treat Dupuytren's

Full postoperative extension

Full postoperative flexion

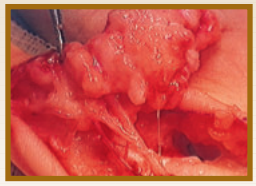
Complexity of Dupuytren's Surgery:



A spiral cord displaced the digital nerve into an abnormal anatomic position, superficial and medial

Fasciectomy is complete and the nerve is left intact

Either end of the white appearing digital nerve is seen entering and emerging from a rock hard mass of Dupuytren's spiral cord

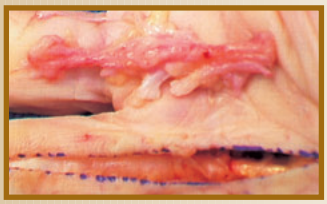


Digital nerve and artery is preserved as the thickened spiral cord is excised

Dupuytren's Contracture continued

Severe progressive Dupuytren's disease

Finger extension is severely limited



Full finger extension. Note diseased cord of palmar fascia after excision

in various stages including late stages where the finger is nearly contracted into the palm. The treatment is to remove this thickened band of diseased tissue and all *potentially diseased tissue*. If this is done properly the recurrence rate, contrary to some published reports, should be extremely low with respect to that finger although Dupuytren's can occur in other areas of the hand that have not been treated. In cases where there has been longstanding severe contracture bringing the finger down into the palm, the neurovascular bundles become foreshortened. After removal of the diseased tissue and the finger is straightened out completely the digital blood vessels can become attenuated depriving blood flow to the end of the finger. Therefore, in severe cases, one may have to allow the finger to be bent slightly in order to allow proper blood flow to the finger. In such severe cases occasionally it is necessary to do a second stage reconstruction. At The Hand Center our technique is to follow up with a proximal interphalangial joint implant arthroplasty if necessary. We have seen excellent results with this approach.

It is of particular importance that a Dupuytren's contracture be treated by a well-trained hand surgeon in our opinion. This is not a procedure for a surgeon who rarely performs Dupuytren's releases. This procedure requires *extreme attention to detail*. The nerves and arteries tend to be wound around these thickened bands of tissue making dissection treacherous, and putting the nerves at risk if one is inexperienced. Still with proper dissection there may be some numbness following the operation as these nerves are dissected from the surrounding tissue. The tissue can be so thickened with such entrapment of the nerve that it is as though a rope has been placed in a bucket of cement. The nerves can be displaced into anatomically abnormal positions. The surgeon must be aware of all these facets and must be experienced in Dupuytren's operations so that a complete excision is performed without injury to the surrounding neurovascular structures.

We treat a great number of Dupuytren's cases at The Hand Center including complicated cases and cases that have been operated on elsewhere. It is important for the patient to understand that a Dupuytren's operation is an extensive reconstructive procedure on the hand that will require some months of healing and appropriate supervised therapy in order to achieve the best possible result. The surgeon, patient and therapist must all work together.

The incidence of reflex sympathetic dystrophy, a condition causing marked pain, swelling and stiffness of the hand is higher in a patient undergoing a Dupuytren's operation if carpal tunnel is present. In such cases we perform a Brown Procedure endoscopic carpal tunnel release and allow one week healing prior to performing the Dupuytren's in order to reduce the chance of reflex sympathetic dystrophy. Everyone therefore is screened for carpal tunnel.

A properly performed Dupuytren's procedure can be a very gratifying experience for patient, therapist and surgeon restoring function once again to a hand disabled by this disease.

Dupuytren's is also associated with plantar fasciitis in the foot as well as Peyronie's disease affecting the corpora cavernosa of the penis.