Orthopaedic Observations

A Matter of Medicine…

TM Pending

Dupuytren's Disease
What is it?

By Gail Garfield, OTR/L, CHT

Dupuytren's Disease is a progressive disease of the overlying skin and fascia(connective tissue beneath the skin) of the palm and digits of the hand. There is no definitive cause of this disease; however, a possible northern, northwestern European origin is speculated. With this disease, there seems to be a greater prevalence in men than women with an onset age between 40-50 years. This disease is known to be associated with diabetes, some seizure medications, carpal tunnel syndrome, tenosynovitis, and even alcoholism.

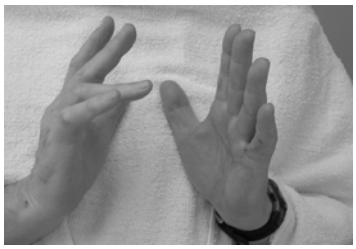
Dupuytren's Disease is the production of collagen from fibroplastic cells which causes a hard lump or pitting in the palm. Depending on the extent of the disease, the palmar and digital fascia as well as their entire structures,

(*Right hand pre-op, Left hand post -op in both pictures)*

contract. Once a cord has formed, the large knuckle (MP joint) of usually the 4th or 5th digit is the first to contract. A pretendinous cord can also be present in the web space and/or thumb of the hand. As the disease progresses, a shortening and pulling of all the structures causes the middle knuckle (PIP joint) to further contract the finger into a flexed position.

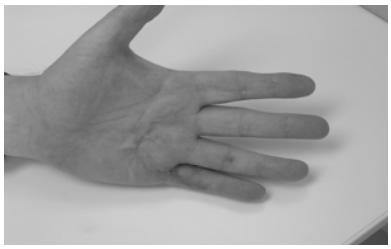
Typically, a person notes a decrease in function of their hand with having difficulty putting their hand in their pocket, poking themselves in the eye when washing their face as well as decreased strength and ability to open their hand to grasp an object. A flexion contracture of the large knuckle (MP joint) of 30° or more or 15° or more of the middle knuckle (PIP joint) is sometimes an indication that a surgical release is needed.

There are various surgical techniques used to remove the disease tissue and correct the hand deformity. A fasciotomy is the most common technique used today, a series of diagonal incisions, sometimes requiring a Z-shaped incision (Z-plasty) in the palm to remove the diseased fascia and release the large knuckle contractures.



(*Right hand pre-op, Left hand post-op)*

Postoperative therapy usually begins 5-7 days following surgery. An OT or PT certified in hand therapy typically takes off the postoperative dressing. Evaluation and treatment goals are established at that time, and the patient is instructed on a comprehensive home exercise program.



(Post-op photo , surgery by Richard Bernstein, M.D.)

The initial goals are maintaining digit extension, edema management and wound healing. For the next 4-6 weeks after the surgical release, depending on the severity of the disease, the patient will be managed by their therapist to achieve maximum hand function, and to return to their Activities of Daily Living (ADL).

Splinting is an important component to maintain the digital extension that was achieved in surgery. At the first visit with the therapist, a dorsal hand-based splint is fabricated to help maintain the digits in extension. The splint

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is worn initially at all times except for hygiene and while performing exercises. This splint schedule is continued during the wound healing and scar formation stage (approximately 2 weeks). Promotion of functional use of the affected hand is important upon suture removal; therefore, discontinuing the splint during the day and wearing the splint only for night time is encouraged. Continued splinting is recommended for up to 6 months following surgery to maximize digit extension during the scar maturation process.

Edema management is critical for healing following any hand surgery. It is imperative that the postoperative swelling be managed after a Dupuytren's release as to avoid further contractures in the finger joints. The patient is instructed on various techniques such as elevation, retrograde massage and coban wrapping to keep swelling to a minimum. Range of Motion exercises are initiated at the time of the initial evaluation. Active and Passive exercises of the affected digits as well as tendon gliding exercises are instructed as to promote joint motion which will aid in decreasing scar adhesions, decreasing swelling (edema) in the hand, decreasing joint stiffness and contracture while increasing tendon gliding.

Scar management begins immediately after wound closure. Deep friction massage to the palm and affected digits, prolonged stretching, silastic gel inserts and modalities such as ultrasound are a few techniques that can be used to remodel or soften the surgical scar.

Strengthening exercises are generally introduced 4-6 weeks following a surgical release. Progressive resistive exercises should focus on returning one to work or to their maximum level of functioning. Activities of Daily Living are assessed to ensure complete return to functional independence.

Dupuytren's Disease is a challenging disease which requires good communication among the patient, physician and therapist in order to obtain a positive outcome and return the patient to full functional mobility of their hand.

Gail graduated from Quinnipiac University with a Bachelor of Science degree in Occupational Therapy. She received her Certification in Hand Therapy in 1997, and is a member of the American Society of Hand Therapists. Gail has published in the Physical Disabilities Special Interest Section Newsletter by the American Occupational Therapy Association, Inc. She has also presented at the American Occupational Therapy Annual Conference in 1998. She has been an adjunct professor at Quinnipiac University in the OT Master's degree program since 2005. She has been with The Orthopaedic Group since 2002.

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