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Dupuytren's Contracture

Overview

Dupuytren's contracture is a progressive hand deformity characterized by the gradual, irreversible bending of one or more fingers toward the palm. The condition originates from abnormal changes within the palmar fascia, a specific layer of connective tissue that lies directly beneath the skin of the hand. Over a period of years, this process can severely limit a person's ability to perform everyday tasks that require an open hand, such as grasping large objects or placing a hand flat on a surface.

What is it

What is Dupuytren's Contracture? Dupuytren's contracture is a disorder of the palmar fascia, a specific layer of connective tissue located just beneath the skin of the palm. The condition begins with a pathological thickening of this fascia, which first manifests as firm lumps or nodules developing in the palm. These initial nodules are typically not painful but are anchored to the skin. Over time, these nodules can consolidate and extend to form tough, rope-like bands known as cords. It is the slow, progressive shortening and tightening of these cords that exerts a pulling force on the fingers, drawing them down into a permanently bent or flexed position. The ring and little fingers are the most frequently involved digits in this process, and the inability to straighten them is the hallmark of the contracture itself.

Causes:

The development of Dupuytren's contracture is driven by a specific pathological process within the hand's connective tissue. While the ultimate trigger is not fully understood, the direct cause involves the abnormal behavior of certain cells.

- **Myofibroblast Proliferation:** - The condition is initiated by the excessive growth of cells known as myofibroblasts within the palmar fascia. For unknown reasons, these cells begin to multiply uncontrollably.
- **Excessive Collagen Deposition:** - These proliferating myofibroblasts produce large amounts of a specific type of collagen. This excess collagen accumulates and organizes into the characteristic hard nodules and tough, fibrous cords that define the disease.
- **Progressive Cord Contraction:** - Over a span of months or years, these collagen-rich cords gradually mature, shorten, and tighten. This slow but relentless contraction exerts a pulling force on the finger, tethering it to the palm and preventing it from being straightened.

Risk Factors:

The likelihood of developing Dupuytren's contracture is not uniform; instead, it is strongly concentrated in individuals with a specific combination of hereditary and personal health factors.

- **Genetic Lineage:** - The condition shows a powerful hereditary pattern, with a remarkably high prevalence among individuals of Northern European ancestry (Scandinavian, English, Scottish, Irish), earning it the nickname "Viking disease."

- **Male Gender:** - Men are diagnosed with the condition far more frequently than women and also tend to experience an earlier onset and more severe contractures over time.
 - **Maturing Age:** - The incidence of the disease rises sharply after the age of 50, with the onset being extremely rare in people under the age of 40.
 - **Associated Conditions and Habits:** - The presence of diabetes, along with a history of long-term tobacco use or significant alcohol consumption, has been strongly correlated with a higher probability of developing the disease.
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Additional Information

Commonly Used Medications for Dupuytren's Contracture While surgery or minimally invasive procedures are the mainstays of treatment, specific injectable medications are used to either dissolve the problematic tissue or manage symptoms. Collagenase clostridium histolyticum (Xiaflex): This is an enzyme that is injected directly into a Dupuytren's cord, where it works to enzymatically break down and dissolve the tough collagen, allowing a doctor to manipulate and straighten the finger a day or two later. Corticosteroid Injection: For early-stage, painful nodules, an injection of a corticosteroid (like triamcinolone) can help to reduce local inflammation and discomfort, and in some cases may slow the progression of a nodule into a cord. Lidocaine: This is a local anesthetic medication that is injected into the hand to completely numb the area before performing minimally invasive procedures, such as a needle aponeurotomy, ensuring the patient does not feel pain during the intervention. Where to Find More Information? For detailed information on this condition from leading medical societies, please consult the following resources: American Academy of Orthopaedic Surgeons (AAOS): The AAOS patient information site provides a comprehensive guide covering the symptoms, causes, and a full range of treatment options.

<https://orthoinfo.aaos.org/en/diseases-conditions/dupuytren-s-disease/>. American Society for Surgery of the Hand (ASSH): The patient-facing portal from the ASSH offers a clear explanation of the condition, complete with diagrams and treatment details. <https://www.assh.org>. Support Managing the functional impact of Dupuytren's contracture involves a team of specialized healthcare professionals. Hand Surgeon: An orthopedic or plastic surgeon who specializes in conditions of the hand is the definitive expert for diagnosing the condition and performing all corrective procedures, from injections to open surgery. Certified Hand Therapist (CHT): This specialized occupational or physical therapist is essential for post-procedure rehabilitation, guiding patients through exercises and splinting protocols to regain maximum hand function and flexibility. The International Dupuytren Society: This patient-run organization provides information, raises awareness, and fosters a community for individuals affected by the disease.

Disclaimer

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