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SPECIALIST ORTHOPAEDIC SURGEON

EVIDENCE SUMMARY

Dupuytren's Disease

Overview

- Little agreement exists on treatment recommendations for common presentations of Dupuytren disease among international hand surgeons [1].
- Clinically important Dupuytren's disease is common in the general population [2].
- A majority of diagnosed individuals with Dupuytren's disease undergo treatment [2].
- The best treatment for Dupuytren contractures continues to be fiercely debated [3].
- Dupuytren disease is progressive [3].
- The pace of Dupuytren disease progression is unique to each patient [3].
- Best treatments for Dupuytren disease remain uncertain [3].
- The literature does not provide evidence in favor of a specific procedure for Dupuytren's disease due to inconsistencies in reporting complications [4].
- The literature lacks a standardized definition for complications in Dupuytren's disease [4].
- Patients with Dupuytren's disease may gain significant functional benefit following surgical improvement or correction of the deformity [5].
- There remains limited evidence to guide the management of patients with Dupuytren's contracture [6].
- Several procedural options exist for the treatment of Dupuytren disease [7].
- Advancements in surgical and therapy management for Dupuytren's disease include indications, surgical options, non-surgical techniques, and therapy interventions [9].
- Dermofasciectomy appears to be a highly effective surgical intervention for advanced Dupuytren disease [14].
- Dermofasciectomy offers substantial long-term benefits in terms of function and disease control for advanced Dupuytren disease [14].
- Surgery remains the gold-standard treatment for progressive Dupuytren contractures [17].
- Limited palmar fasciectomy is the most common surgical option for Dupuytren's disease [17].
- Many treatment options exist for Dupuytren contracture, each with its own complication profile [19].

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- Surgical treatment in the form of partial or selective fasciectomy remains the most reliable method for treating Dupuytren's disease [24].
- Partial or selective fasciectomy is the most widely used method for treating Dupuytren's disease [24].

Anatomy & Pathophysiology

- A revised severity staging system incorporating total flexion deformity and additional clinical risk factors provides a more objective and precise method for assessing Dupuytren's disease severity and may predict surgical outcomes [8].
- Surgery remains the gold-standard treatment for progressive Dupuytren contractures, with limited palmar fasciectomy being the most common option [17].
- Collagenase clostridium histolyticum (CCH) is a safe, effective treatment to improve hand function in Dupuytren's contracture, with most adverse events being minor and self-resolving [25].
- A simple staged procedure is a valid alternative in the management of severe Dupuytren's proximal interphalangeal joint (PIPJ) contracture, demonstrating reliable, reproducible correction of the deformity and acceptable patient outcomes [28].
- Safety and social issues of hand function and quality of life have an evident association with functional recovery after surgery and hand therapy [34].
- Hand therapy after collagenase treatment is utilized to discuss results and support recovery [35].
- Hand therapy should acknowledge patients' individual experiences and support self-modifications and development of new skills [37].
- The incidence of skin tears after collagenase injection does not affect patient-reported outcomes six months later, but the incidence of skin tears is significantly associated with the severity of pre-treatment finger extension deficits [38].
- No differences were observed in self-reported upper limb disability or active range of motion between patients receiving routine night-time splinting and those receiving hand therapy only after fasciectomy or dermo-fasciectomy [39].
- Repeat collagenase treatment of previously treated digits yields similar deformity correction and complete correction rates but a higher incidence of adverse events compared to initial treatment [40].
- Female sex and release of more than one digit are significant predictors of developing Complex Regional Pain Syndrome (CRPS) following treatment of Dupuytren contracture [41].
- Soft tissue distraction prior to radialization can successfully realign the carpus and wrist over the ulna, but some minor recurrence must still be expected in the mid-term [44].
- There were no significant differences in the reduction of PIP contracture, range of motion, and patient-reported outcomes between percutaneous needle fasciotomy and collagenase treatment at 2-year follow-up [46].
- A novel patient-specific visual analogue survey (PVS) is validated in patients treated with collagenase injection for Dupuytren's disease and is readily adaptable for use in other musculoskeletal diseases [47].

- Clinically relevant contracture correction was comparable between limited fasciectomy (LF), percutaneous needle fasciotomy (PNF), and CCH, but CCH had a higher risk of minor complications and LF had the longest time to recurrence [48].
- In the absence of evidence that collagenase effects on cord morphology are better than needle fasciotomy, needle fasciotomy remains the first line of treatment for an uncomplicated Dupuytren's cord at the metacarpophalangeal (MCP) joint [49].

Classification

- Dupuytren disease is a progressive condition of genetic origin [10].
- The pathophysiology of Dupuytren disease is multifactorial, involving myofibroblast proliferation and altered collagen matrix composition [10].
- The prevalence of Dupuytren's disease varies extremely across different geographical locations [21].
- It is unclear whether the geographical variation in Dupuytren's disease prevalence is due to genetic, environmental, or combined factors [21].
- Dorsal Dupuytren's nodules are encountered only in patients with Dupuytren's disease [12].
- Dorsal Dupuytren's nodules are especially prevalent among patients with strong diathesis [12].
- Histological staging is a reliable method for predicting recurrence of Dupuytren's disease [23].
- Histological Type I (proliferative) carries the highest risk of recurrence [23].
- Histological Type III (fibrotic) carries the lowest risk of recurrence [23].
- The revised Tubiana's staging system incorporates total flexion deformity and additional clinical risk factors to assess disease severity [8].
- The revised Tubiana's staging system provides a more objective and precise method for assessing Dupuytren's disease severity compared to prior methods [8].
- The revised Tubiana's staging system may predict surgical outcomes [8].
- The URAM scale is the first patient-reported functional measure for assessing Dupuytren's disease–specific disability [15].

Clinical Presentation

- Dupuytren disease is a progressive condition of genetic origin with a multifactorial pathophysiology involving myofibroblast proliferation and altered collagen matrix composition [10].
- Histological specimens of Dupuytren's disease are not characterized by apoptotic cells, suggesting proliferating cells may be primed for death if they fail to receive an appropriate survival signal [22].
- Dermal fibromatosis exists in the absence of clinical features of skin involvement, and the skin may have a greater role in the development and propagation of Dupuytren's disease than previously thought [29].

- Clinically important Dupuytren's disease is common in the general population, with a majority of diagnosed individuals undergoing treatment [2].
- The prevalence of Dupuytren's Disease in different geographical locations is extremely variable, and it is not clear whether this is genetic, environmental, or a combination of both [21].
- Dorsal Dupuytren's nodules are encountered only in Dupuytren's disease patients, especially among those with strong diathesis [12].
- Dupuytren's disease in women presents similarly to men with more severe PIP joint involvement but equivalent surgical outcomes regarding final contracture correction, recurrence, and complication rates [16].
- There is as much unknown as known about Dupuytren's disease, and even current knowledge may not be absolutely correct [18].
- The revised Tubiana's staging system incorporates total flexion deformity and additional clinical risk factors to provide a more objective and precise method for assessing Dupuytren's disease severity [8].
- The URAM scale is the first patient-reported functional measure for Dupuytren's disease [15].

Investigations

- The pace of disease progression is unique to each patient [3].
- Dupuytren's disease in women presents similarly to men with more severe proximal interphalangeal (PIP) joint involvement but equivalent surgical outcomes regarding final contracture correction, recurrence, and complication rates [16].
- The revised Tubiana's staging system, which incorporates total flexion deformity and additional clinical risk factors, provides a more objective and precise method for assessing Dupuytren's disease severity and may predict surgical outcomes [8].
- Histological staging is a reliable method for predicting recurrence of Dupuytren's disease, with Type I (proliferative) having the highest risk and Type III (fibrotic) the lowest [23].
- There is limited evidence to guide the management of patients with Dupuytren's contracture [6].
- The best treatment for Dupuytren contractures continues to be fiercely debated, and best treatments remain uncertain [3].
- The literature does not provide evidence in favor of a specific procedure for Dupuytren's disease due to inconsistencies in reporting complications as well as the lack of a standardized definition [4].
- Despite extensive literature, there is as much unknown as known about Dupuytren's disease, and even current knowledge may not be absolutely correct [18].

Treatment

- Dupuytren disease is progressive, but the pace is unique to each patient [3].

- Therapy interventions assist in linking patient-specific problems to appropriate treatment choices [9].
- There is a low level of evidence that both surgical and nonsurgical treatments provide clinically important improvements for recurrent Dupuytren contracture [11].
- Segmental aponeurectomy with Z-Plasty has a role in the management of Dupuytren's disease with flexion contracture predominantly involving the MCPJ [13].
- Limited palmar fasciectomy is the most common surgical option for Dupuytren contractures [17].
- The recurrence rate of Collagenase Clostridium Histolyticum (CCH) is comparable to other standard treatments [20].
- There is an absence of long-term adverse events 3 years after initial CCH treatment [20].
- CCH is an effective and safe treatment for Dupuytren contracture [20].
- The best available published evidence indicates that surgical treatment in the form of partial or selective fasciectomy remains the most reliable method for treating Dupuytren's disease [24].
- CCH is a safe, effective treatment to improve hand function in Dupuytren's contracture [25].
- Most adverse events associated with CCH are minor and self-resolving [25].
- CCH may not provide durable contracture reduction [30].
- CCH remains a viable nonsurgical treatment for Dupuytren's disease [30].
- High-energy focused extracorporeal shockwave therapy relieved pain in Dupuytren's disease in a series of seven hands [31].
- A doublemasked randomized controlled trial is warranted to elucidate the value of extracorporeal shockwave therapy in Dupuytren's disease as a non-invasive treatment option to reduce pain [31].
- Surgical intervention for Dupuytren contractures achieves a high rate of full or almost full correction (75%) [33].

Complications

- There is little agreement among international hand surgeons on treatment recommendations for common presentations of Dupuytren disease [1].
- Clinically important Dupuytren's disease is common in the general population, with a majority of diagnosed individuals undergoing treatment [2].
- The best treatment for Dupuytren contractures remains uncertain and is fiercely debated [3].
- Dupuytren disease is progressive, but the pace of progression is unique to each patient [3].
- The literature does not provide evidence in favor of a specific procedure for Dupuytren's disease due to inconsistencies in reporting complications [4].
- There is a lack of a standardized definition for complications in Dupuytren's disease literature [4].
- Patients with Dupuytren's disease may gain significant functional benefit following surgical improvement or correction of the deformity [5].

- There remains limited evidence to guide the management of patients with Dupuytren's contracture [6].
- The revised Tubiana's staging system incorporates total flexion deformity and additional clinical risk factors to assess disease severity [8].
- The revised severity staging system provides a more objective and precise method for assessing Dupuytren's disease severity [8].
- The revised severity staging system may predict surgical outcomes [8].
- Dupuytren disease is a progressive condition of genetic origin [10].
- Dupuytren disease has a multifactorial pathophysiology involving myofibroblast proliferation and altered collagen matrix composition [10].
- There is a low level of evidence that both surgical and nonsurgical treatments provide clinically important improvements for recurrent Dupuytren contracture [11].
- Dorsal Dupuytren's nodules are encountered only in Dupuytren's disease patients [12].
- Dorsal Dupuytren's nodules are especially prevalent among patients with strong diathesis [12].
- Dermofasciectomy appears to be a highly effective surgical intervention for advanced Dupuytren disease [14].
- Dermofasciectomy offers substantial long-term benefits in terms of function and disease control for advanced Dupuytren disease [14].
- Dupuytren's disease in women presents similarly to men with more severe proximal interphalangeal (PIP) joint involvement [16].
- Women with Dupuytren's disease have equivalent surgical outcomes regarding final contracture correction, recurrence, and complication rates compared to men [16].
- There is as much unknown as known about Dupuytren's disease despite extensive literature [18].
- Even current knowledge about Dupuytren's disease may not be absolutely correct [18].
- Many treatment options exist for Dupuytren contracture, each with its own complication profile [19].
- The recurrence rate of collagenase clostridium histolyticum (CCH) treatment is comparable to other standard treatments [20].
- There is an absence of long-term adverse events 3 years after initial CCH treatment [20].
- CCH is an effective and safe treatment for Dupuytren contracture [20].
- Long-term overall reintervention rates following treatment of Dupuytren contracture affecting a single digit were higher with CCH than with surgical fasciectomy [26].
- Perceived recurrence rates following treatment of Dupuytren contracture affecting a single digit were higher with CCH than with surgical fasciectomy [26].
- These findings compare groups with similar baseline characteristics [26].
- At 3 months and 1 year, the outcomes of needle fasciotomy and collagenase injection are the same in Dupuytren's disease with predominantly metacarpophalangeal joint involvement [27].
- Large-scale epidemiological studies are needed to accurately report Dupuytren's disease in the modern U.S. population [32].

Recovery

- Histological specimens of Dupuytren's disease were not characterized by apoptotic cells, suggesting proliferating cells may be primed for death if they fail to receive an appropriate survival signal [22].
- Patients with Dupuytren's disease of the hand may gain a significant functional benefit following surgical improvement or correction of the deformity [5].
- Dermofasciectomy appears to be a highly effective surgical intervention for advanced Dupuytren disease, offering substantial long-term benefits in terms of function and disease control [14].
- Hospitalization for surgery for Dupuytren's disease in France still represents a meaningful economic burden despite shortening of hospital stays over time [45].
- There is low level of evidence that both surgical and nonsurgical treatments provide clinically important improvements for recurrent Dupuytren contracture [11].
- The recurrence rate following treatment with Collagenase Clostridium Histolyticum (CCH) is comparable to other standard treatments [20].
- There is an absence of long-term adverse events 3 years after initial treatment with CCH, indicating it is an effective and safe treatment for Dupuytren contracture [20].
- Long-term overall reintervention and perceived recurrence following treatment of Dupuytren contracture affecting a single digit were higher with CCH treatment than surgical fasciectomy when comparing groups with similar baseline characteristics [26].
- Initial evaluation of long-term recurrence rates suggests disease recurrence or progression in 4 out of 6 patients with MCP contractures and 2 patients with PIP contractures following collagenase injection [42].
- Recurrence following collagenase injection was generally less severe than the initial contracture in the MCP group [42].
- At 3 months and 1 year, the outcomes of needle fasciotomy and collagenase injection are the same in Dupuytren's disease with predominantly metacarpophalangeal joint involvement [27].
- Static night splintage may have a role in the treatment of early stages of Dupuytren's disease, with greatest benefit noted in the early proliferative phase [43].
- The Unité Rhumatologique des Affections de la Main (URAM) scale is the first patient-reported functional measure for Dupuytren's disease [15].

Key Evidence

- [L4] Little agreement exists on treatment recommendations for common presentations of Dupuytren disease in this sample of international hand surgeons. [1] (10.1016/j.jhsa.2017.08.023)
- [L3] Clinically important Dupuytren's disease is common in the general population, with a majority of diagnosed individuals undergoing treatment. [2] (10.1177/1753193416687914)

- [L5] The best treatment for Dupuytren contractures continues to be fiercely debated; what is known is that Dupuytren disease is progressive, but the pace is unique to each patient, and best treatments remain uncertain. [3] (10.2106/jbjs.18.00282)
- [L4] The literature does not provide evidence in favor of a specific procedure for Dupuytren's disease due to inconsistencies in reporting complications as well as the lack of a standardized definition. [4] (10.1016/j.hansur.2017.07.002)
- [L4] Patients with Dupuytren's disease of the hand may gain a significant functional benefit following surgical improvement or correction of the deformity. [5] (10.1308/003588406x83104)
- [L2] Currently there remains limited evidence to guide the management of patients with Dupuytren's contracture. [6] (10.1302/0301-620x.100b9.bjj-2017-1194.r2)
- [L4] There are several procedural options for the treatment of Dupuytren disease. [7] (10.1177/1558944718787281)
- [L4] The revised severity staging system, which incorporates total flexion deformity and additional clinical risk factors, provides a more objective and precise method for assessing Dupuytren's disease severity and may predict surgical outcomes. [8] (10.1007/s11552-007-9071-1)
- [L5] The article highlights advancements in surgical and therapy management for Dupuytren's disease, reviewing indications, surgical options, non-surgical techniques, and therapy interventions to assist in linking patient-specific problems to appropriate treatment choices. [9] (10.1016/j.jht.2013.10.006)
- [L5] Dupuytren disease is a progressive condition of genetic origin with a multifactorial pathophysiology involving myofibroblast proliferation and altered collagen matrix composition. [10] (10.5435/00124635-201112000-00005)
- [L1] There is low level of evidence that both surgical and nonsurgical treatments provide clinically important improvements for recurrent Dupuytren contracture. [11] (10.1177/1558944721994220)
- [L3] Dorsal Dupuytren's nodules are encountered only in Dupuytren's disease patients, especially among those with strong diathesis. [12] (10.1016/j.jhsa.2010.06.001)
- [Paper] It has a role in the management of Dupuytren's disease with flexion contracture predominantly involving the MCPJ. [13] (10.1016/j.otsr.2019.08.016)
- [L3] Dermofasciectomy appears to be a highly effective surgical intervention for advanced Dupuytren disease, offering substantial long-term benefits in terms of function and disease control. [14] (10.1016/j.jhsa.2025.02.007)
- [L4] We provide the first patient-reported functional measure for Dupuytren's disease. [15] (10.1002/acr.20564)
- [L3] Dupuytren's disease in women presents similarly to men with more severe PIP joint involvement but equivalent surgical outcomes regarding final contracture correction, recurrence, and complication rates. [16] (10.1016/j.jhsa.2007.06.015)
- [L4] Surgery remains the gold-standard treatment for progressive Dupuytren contractures, with limited palmar fasciectomy being the most common option. [17] (10.1016/j.jhsa.2011.03.002)
- [L5] Despite extensive literature, there is as much unknown as known about Dupuytren's disease, and even current knowledge may not be absolutely correct. [18] (10.1177/1753193417715773)

- [L5] Many treatment options exist for Dupuytren contracture, each with its own complication profile. [19] (10.1016/j.hcl.2018.03.007)
- [L4] The recurrence rate, which is comparable to other standard treatments, and the absence of long-term adverse events 3 years after initial treatment indicate that CCH is an effective and safe treatment for Dupuytren contracture. [20] (10.1016/j.jhsa.2012.09.028)
- [L4] The prevalence of Dupuytren's Disease in different geographical locations is extremely variable, and it is not clear whether this is genetic, environmental, or a combination of both. [21] (10.1007/s11552-008-9160-9)
- [L4] Histological specimens of Dupuytren's disease were not characterized by apoptotic cells, suggesting proliferating cells may be primed for death if they fail to receive an appropriate survival signal. [22] (10.1054/jhsb.1999.0251)
- [L3] Histological staging is a reliable method for predicting recurrence of Dupuytren's disease, with Type I (proliferative) having the highest risk and Type III (fibrotic) the lowest. [23] (10.1177/1753193408103729)
- [L5] The best available published evidence indicates that surgical treatment in the form of partial or selective fasciectomy remains the most reliable and the most widely used method for treating Dupuytren's disease. [24] (10.1016/j.jhsa.2008.05.027)
- [L2] CCH is a safe, effective treatment to improve hand function in Dupuytren's contracture, with most adverse events being minor and self-resolving. [25] (10.1177/1558944720974119)
- [L4] Long-term overall reintervention and perceived recurrence following treatment of Dupuytren contracture affecting a single digit were higher with CCH treatment than surgical fasciectomy when comparing groups with similar baseline characteristics. [26] (10.1016/j.jhsa.2021.05.022)
- [L2] At 3 months and 1 year, the outcomes of needle fasciotomy and collagenase injection are the same in Dupuytren's disease with predominantly metacarpophalangeal joint involvement. [27] (10.1177/1753193415617385)
- [L4] The simple staged procedure is a valid alternative in the management of severe Dupuytren's PIPJ contracture, demonstrating reliable, reproducible correction of the deformity and acceptable patient outcomes. [28] (10.1177/1753193412439673)
- [L3] Dermal fibromatosis exists in the absence of clinical features of skin involvement, and we hypothesize that the skin may have a greater role in the development and propagation of Dupuytren's disease than previously thought. [29] (10.1177/1753193415601353)
- [L4] While initially effective, CCH may not provide durable contracture reduction, but remains a viable nonsurgical treatment for Dupuytren's disease. [30] (10.1007/s11552-013-9524-7)
- [L4] A doublemasked randomized controlled trial is warranted to elucidate the value of extracorporeal shockwave therapy in Dupuytren's disease of the hand as a non-invasive treatment option to reduce pain. [31] (10.23736/s1973-9087.18.05498-9)
- [L3] Large-scale epidemiological studies are needed to accurately report Dupuytren's disease in the modern U.S. population. [32] (10.1007/s11552-007-9076-9)

- [L5] Surgical intervention for Dupuytren contractures achieves a high rate of full or almost full correction (75%). [33] (10.1016/j.hcl.2018.04.002)
- [L4] Safety and social issues of hand function and quality of life had an evident association with functional recovery. [34] (10.1016/j.jht.2014.11.006)
- [L2] Results after 9 month follow-up, hand therapy after treatment will be presented in detail and discussed. [35] (10.1016/j.jht.2010.09.006)
- [L4] A clinical implication for hand therapy is to acknowledge patients' individual experiences and support self-modifications and development of new skills. [37] (10.1016/j.jht.2019.04.004)
- [L2] The incidence of skin tears after collagenase injection does not affect patient-reported outcomes six months later, but the incidence of skin tears is significantly associated with the severity of pre-treatment finger extension deficits. [38] (10.1177/1753193420941329)
- [L1] No differences were observed in self-reported upper limb disability or active range of motion between patients receiving routine night-time splinting and those receiving hand therapy only. [39] (10.1186/1471-2474-12-136)
- [L4] Repeat collagenase treatment of previously treated digits yields similar deformity correction and complete correction rates but a higher incidence of adverse events compared to initial treatment. [40] (10.1016/j.jhsa.2023.03.026)
- [L3] Female sex and release of more than one digit are significant predictors of developing CRPS. [41] (10.1177/1558944720963915)
- [L4] Initial evaluation of long-term recurrence rates suggests disease recurrence or progression in 4 out of 6 patients with MCP contractures and 2 patients with PIP contractures; however, recurrence was generally less severe than the initial contracture in the MCP group. [42] (10.1016/j.jhsa.2010.01.003)
- [L4] This study indicates that there may be a role for static night splintage in the treatment of early stages of Dupuytren's disease, with greatest benefit noted in the early proliferative phase. [43] (10.1177/175899830200700302)
- [L4] Soft tissue distraction prior to radialization can successfully realign the carpus and wrist over the ulna, but some minor recurrence must still be expected in the mid-term. [44] (10.1177/17531934221095681)
- [L3] Despite shortening of hospital stays over time, hospitalization for surgery for Dupuytren's disease in France still represents a meaningful economic burden. [45] (10.1016/j.otsr.2014.05.013)
- [L2] There were no significant differences in the reduction of PIP contracture, range of motion, and patient-reported outcomes between the two treatments. [46] (10.1016/j.jhsa.2018.06.093)
- [L2] It is also readily adaptable for use in other diseases, particularly within musculoskeletal medicine. [47] (10.1136/jisakos-2019-000301)
- [L1] Overall, the clinically relevant contracture correction was comparable between LF, PNF and CCH, but CCH had a higher risk of minor complications and LF had the longest time to recurrence. [48] (10.1177/17531934251338349)
- [L2] In the absence of evidence that collagenase effects on cord morphology are better, needle fasciotomy remains the first line of treatment for an uncomplicated Dupuytren's cord at the MCP joint. [49] (10.1177/1753193417711594)

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