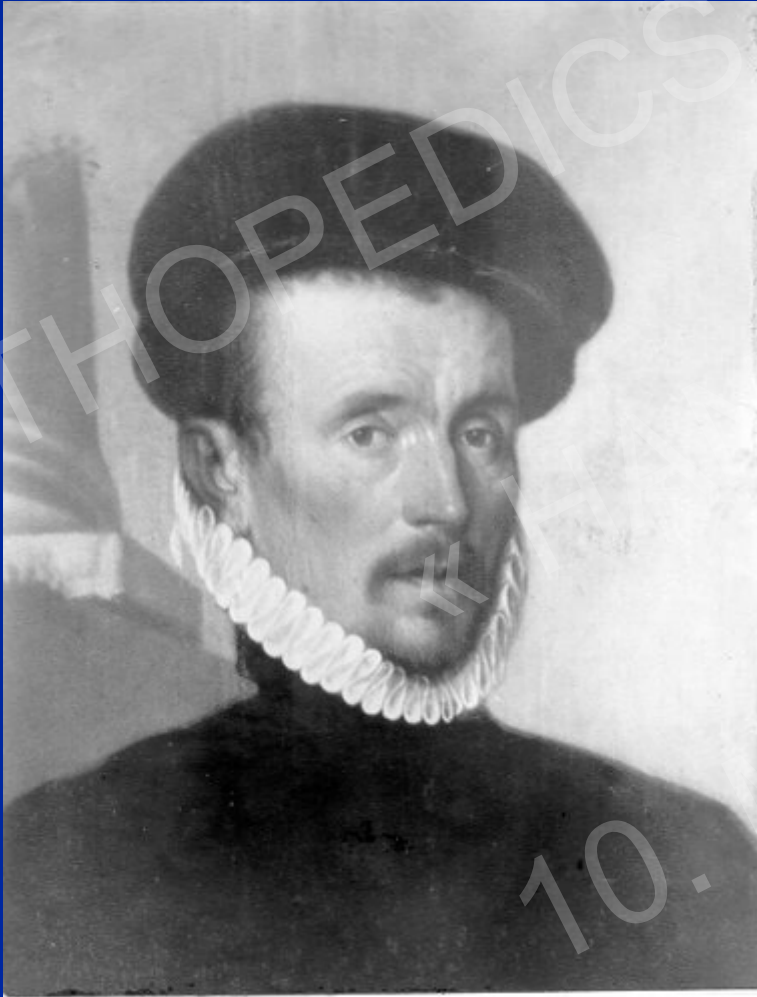


M. Dupuytren

Othopedics Update 2012
L. Vlachopoulos

Felix Platter (1536-1614)



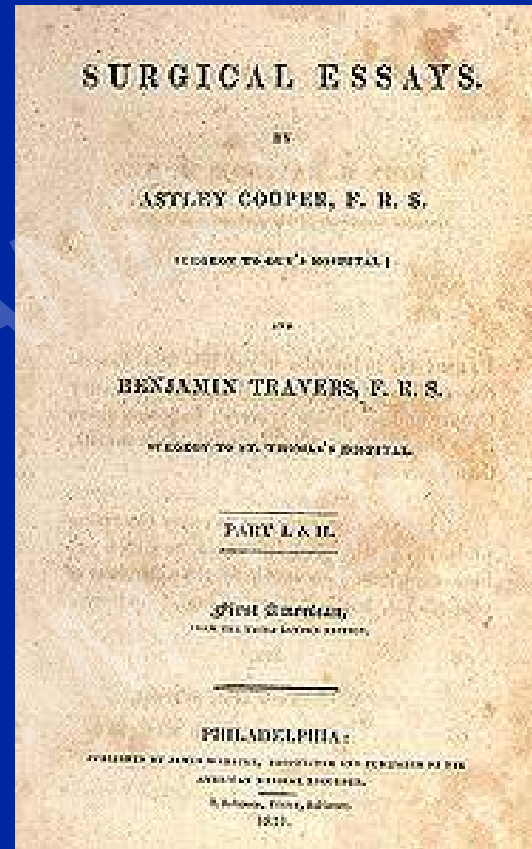
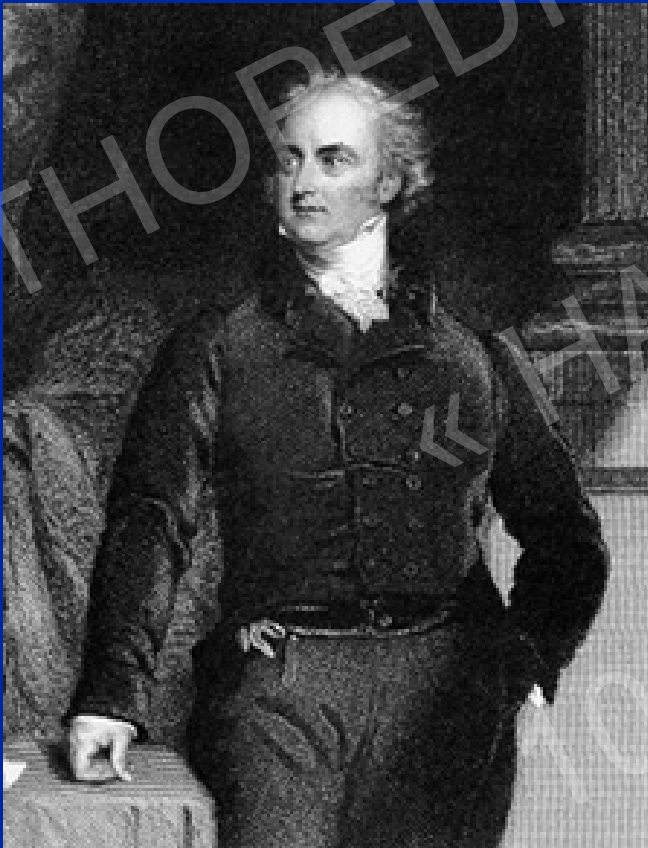
Sir Henry Cline (1750-1827)

1778: Fasziotomie als Therapie



Sir Astley Cooper (1768-1841)

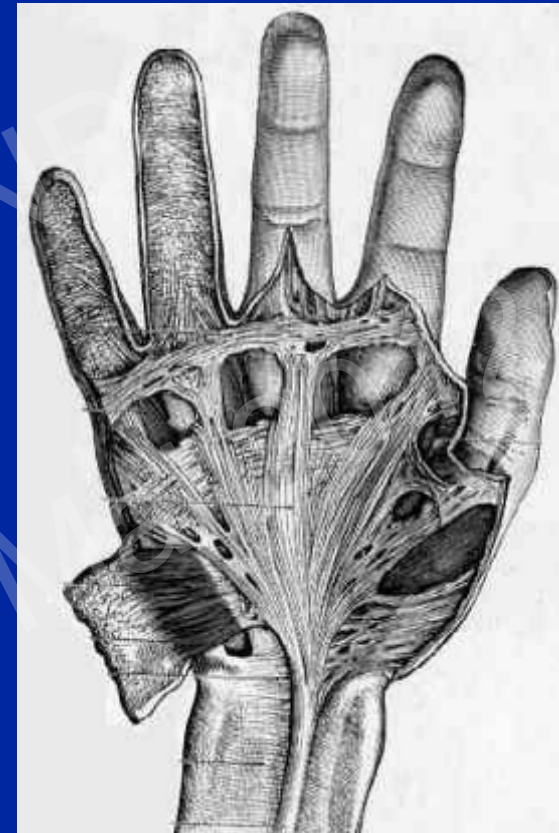
1822: „closed fasciotomy“



Baron Guillaume Dupuytren (1777-1835)

1832-1834:

Leçons orales de clinique chirurgicale, 4 Bände



M. Dupuytren

- Erkrankung des Bindegewebes der Handinnenfläche (Palmarapeunorose)
- zählt zu den benignen Fibromatosen



Epidemiologie

- abhängig vom Geschlecht, Alter und Geographie
- Prävalenz sehr variabel von 3% bis 40% ^{1,2}
- Nordeuropäer ^{1,2}
- ♂ >> ♀ ¹

¹ Gudmundsson J Clinical Epidemiology 2000;53(3) 291-296

² Early JBJS 1962;44B:602-613

Aetiologie

- multifaktoriell
- klare genetische Prädisposition ¹
autosomal dominant mit variabler Penetranz
- Rauchen
- Alkohol ²
- Diabetes
- Epilepsie ⁴

¹ Hindocha

J Hand Surg Am 2006;31(2):204-210

² Gudmundsson

J Clinical Epidemiology 2000;53(3) 291-296

³ Spring

NY State J Med 1970;70:1037-41

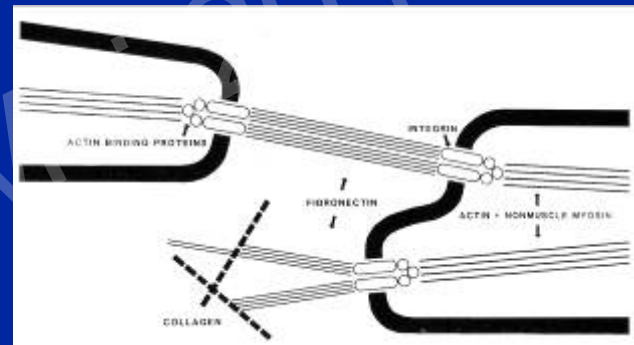
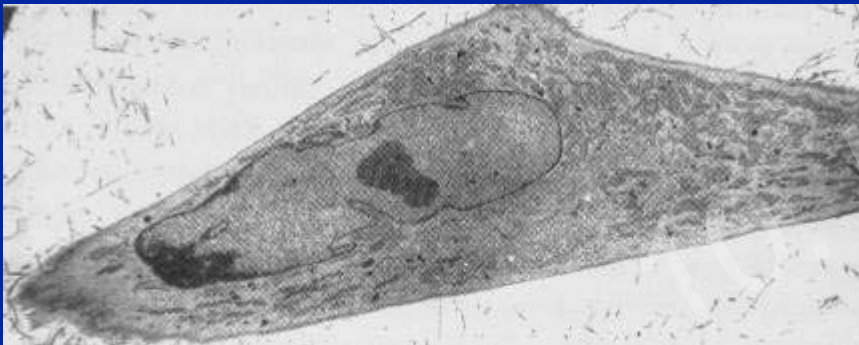
⁴ Early

JBJS 1962;44B:602-613

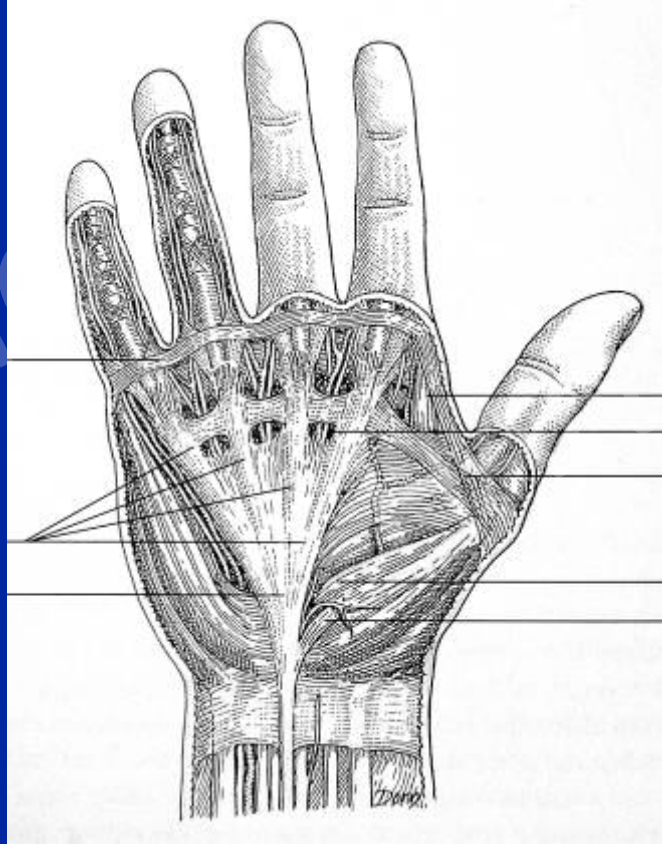


M. Dupuytren

- Myofibroblastproliferation
- Intrazelluläres Aktin / Myosin: Kontraktilität
- Extrazellulär: Kolagen Typ I ↓ Typ III ↑



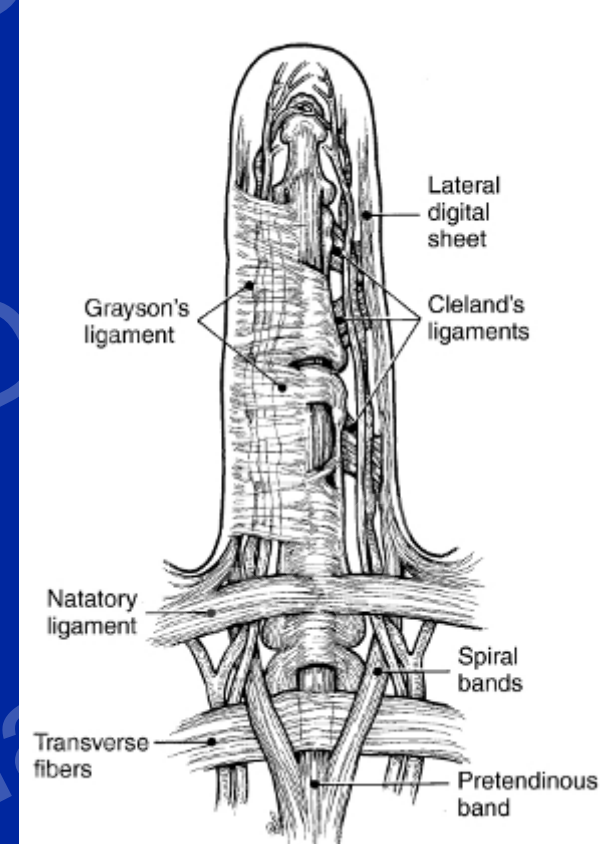
Anatomie der Palmaraponeurose



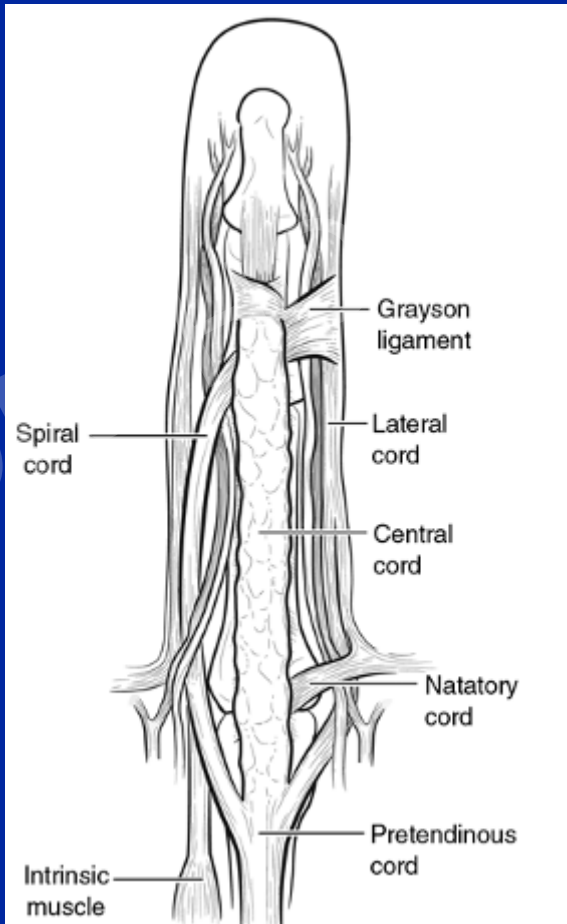
Lig. natatorium

Longitudinale Lig.

Praetendinöse Lig.



Anatomie der Palmaraponeurose bei M. Dupuytren



Cords and Associated Deformities

Dupuytren Cord	Deformity
Pretendinous cord	MCP contracture + skin pitting
Natatory cord	Web space contracture
Spiral cord	MCP + PIP contracture; displaces neurovascular bundle both superficially and toward midline
Central cord	PIP flexion contracture
Lateral cord	PIP or DIP flexion contracture
Retrovascular + lateral cord	DIP hyperextension contracture in recurrent disease

DIP = distal interphalangeal, MCP = metacarpophalangeal, PIP = proximal interphalangeal

Black et Blazar J Am Acad Orthop Surg 2011;19:746-757

Klinik

- Hautverdickung und Grübchenbildung
- Knotenbildung
- Strangbildung
- Dig. IV > V > III > (I, II)
- Kontrakturen MP > PIP > DIP



Dupuytren Diathese

- ♂
- Beginn vor dem 50. Lj.
- bilateral
- Verwandte 1. Grades betroffen
- Garrod pads
- Nordeuropäer



→ schlechtere Prognose bei 1 oder mehr Risikofaktoren

→ Rezidivrate 71% falls alle Risikofaktoren vorhanden
 23% ohne Risikofaktoren ¹

J Hand Surg Am 2006;31(10):1626-1634

¹ Hindocha

Therapie

- **Konservativ**
- **Perkutane Fasziotomie**
- **Operatives Vorgehen**
 - Beugekontrakturen
ab 25° - 30° MCP oder (5° -) 15° PIP
 - positive table top test

Perkutane Fasziotomie

A Comparison of the Direct Outcomes of Percutaneous Needle Fasciotomy and Limited Fasciectomy for Dupuytren's Disease: A 6-Week Follow-Up Study

Annet L. van Rijssen, MD, Feike S. J. Gerbrandy, MD,
Hein Ter Linden, MD, Helen Klip, PhD, Paul M. N. Werker, MD, PhD

From the Department of Plastic, Reconstructive, and Hand Surgery, Isala Clinics, Zwolle, the Netherlands.

Purpose: The demand for percutaneous needle fasciotomy (PNF) as treatment for Dupuytren's disease is increasing because of its limited invasiveness, good outcome, limited number of complications, quick recovery, and overall patient satisfaction. This randomized controlled trial was designed to test whether these short-term expectations are sound by comparing this treatment with limited fasciectomy (LF) with regard to these aspects.

Methods: We treated 166 rays: 88 by PNF and 78 by LF. Total passive extension deficit (TPED) improvement at 1 week and at 6 weeks were the primary outcome parameters; patient satisfaction, hand-function recovery, and complication rate were secondary outcome parameters. We used the Disabilities of the Arm, Shoulder, and Hand questionnaire to measure disabilities of the upper extremity before and after treatment and all adverse effects and complications were recorded.

Results: Overall TPED improvement was best at 6 weeks. In the PNF group TPED improved by 63% versus 79% in the LF group; this difference was statistically significant. Results at the proximal interphalangeal joint were worse than those at the metacarpophalangeal and distal interphalangeal joints for both the PNF and LF groups. The rays classified before surgery as Tubiana stages I and II showed no difference between these treatments, but for rays higher than stage II LF clearly was superior to PNF as a treatment modality. The rate of major complications in the LF group was 5% versus 0% in the PNF group. Patient satisfaction was

Conclusions: In the short term and in cases with a TPED of 90° or less PNF is a good treatment alternative to LF for treatment of Dupuytren's disease. (J Hand Surg 2006;31A:717-725.)

Conclusions: In the short term and in cases with a TPED of 90° or less PNF is a good treatment alternative to LF for treatment of Dupuytren's disease. (J Hand Surg 2006;31A:717-725. Copyright © 2006 by the American Society for Surgery of the Hand.)

Type of study/level of evidence: Therapeutic, Level I.

Key words: Complications, Dupuytren, needle fasciotomy, limited fasciectomy, outcome.

J Hand Surg 2006;31(A):715-725

Perkutane Fasziotomie



Fig. 3. Preoperative (*left*) and postoperative (*right*) views of a 63-year-old man who underwent percutaneous needle fasciotomy of the fifth digit of the right hand.

Percutane Fasziotomie

HAND/PERIPHERAL NERVE

Five-Year Results of a Randomized Clinical Trial on Treatment in Dupuytren's Disease: Percutaneous Needle Fasciotomy versus Limited Fasciectomy

Annet L. van Rijssen, M.D.
Hein ter Linden, M.D.
Paul M. N. Werker, M.D.,
Ph.D.

Zwolle and Groningen,
The Netherlands

Background: The increasing number of methods for treating Dupuytren's disease indicates a need for comparative studies. In this article, the 5-year follow-up results of a randomized controlled study that compared percutaneous needle fasciotomy and limited fasciectomy are presented.

Methods: One hundred eleven patients with 115 affected hands with a minimal passive extension deficit of 30 degrees were assigned randomly to the two groups.

Results: The recurrence rate after 5 years in the needle fasciotomy group (84.9 percent) was significantly higher than in the limited fasciectomy group (20.9 percent) ($p < 0.001$), and occurred significantly sooner in the needle fasciotomy group ($p = 0.001$).

(20.9 percent) ($p < 0.001$), and occurred significantly sooner in the needle fasciotomy group ($p = 0.001$). Older age at the time of treatment decreased the recurrence rate ($p = 0.005$). No other diathesis characteristics influenced recurrence. Patient satisfaction was high in both groups but was significantly higher in the limited fasciectomy group. Nevertheless, many patients (53 percent) preferred percutaneous needle fasciotomy in case of recurrence.

Conclusions: Percutaneous needle fasciotomy is the preferred treatment for elderly patients with Dupuytren's disease and for those willing to accept a possible early recurrence in the context of the advantages, such as fast recovery, a low complication rate, and minimal invasiveness. (*Plast. Reconstr. Surg.* 129: 469, 2012.)

CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, II.



Percutane Fasziotomie

SCIENTIFIC ARTICLE

Results of Needle Aponeurotomy for Dupuytren Contracture in Over 1,000 Fingers

Gary M. Pess, MD, Rebecca M. Pess, BA, Rachel A. Pess, BA

Korrektur MP von 35° auf 1°
PIP von 50° auf 6°

(range, 15° to 95°), and PIP joint 50° (range, 15° to 110°). Immediately postprocedure and at least 3 years after treatment (range, 3.0–6.2 y), we measured MP and PIP joint contractures and reviewed records for complications.

Results MP joint contractures were corrected an average of 99% and PIP contractures an average of 89% immediately postprocedure. At final follow-up, 72% of the correction was maintained for MP joints and 31% for PIP joints. The difference between the final corrections

> 50% des Extensionsdefizites nach 3a
bei 25% im MP und 67% im PIP

Conclusions This study shows that NA is a safe procedure that can be performed in an outpatient setting. The complication rate was low, but recurrences were frequent in younger patients and for PIP contractures. (*J Hand Surg* 2012;37A:651–656. Copyright © 2012 by the American Society for Surgery of the Hand. All rights reserved.)

Type of study/level of evidence Therapeutic IV.

Operative Behandlung

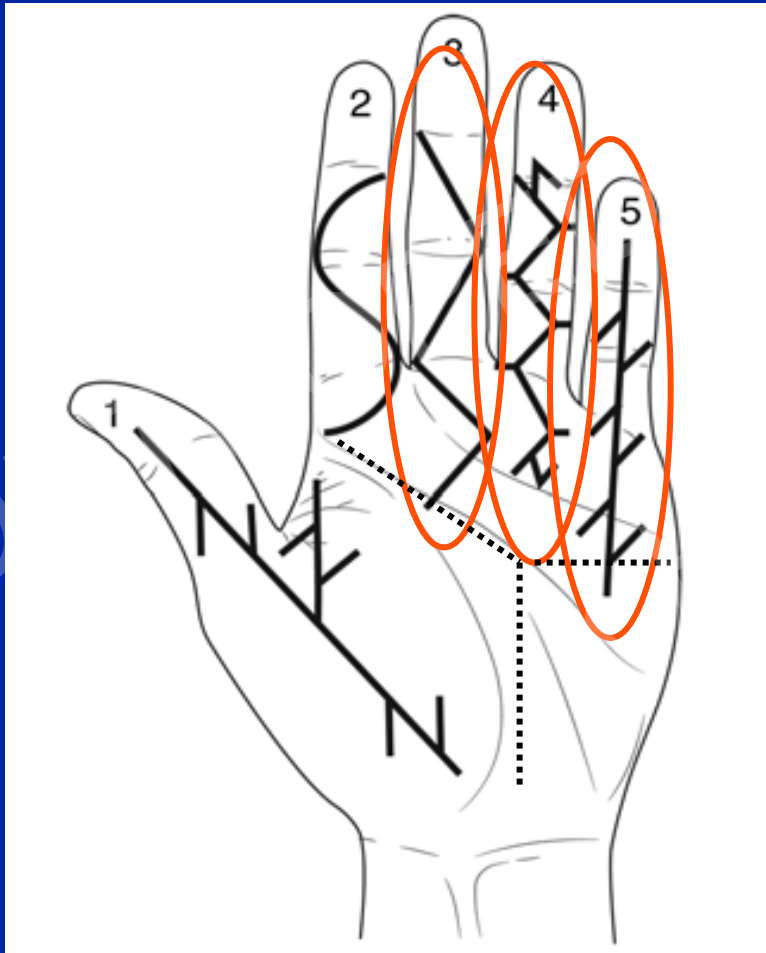


Illustration of types of incisions and possible closure methods for fasciectomy. Type 1, combination of longitudinal incision with multiple Z-plasty. Type 2, curvilinear incision. Type 3, Brunner incision. Type 4, combination of V-Y incision with Z-plasty. Type 5, A midline longitudinal incision closed with Z-plasty. (Redrawn with permission from McGrouther DA: Dupuytren's contracture, in Green DP, Hotchkiss RN, Pederson WC, Wolf SW, eds: *Operative Hand Surgery*, ed 5. New York, NY, Churchill Livingstone, 2005, vol 5, pp 159-186.)

Operative Behandlung

- **Fasziotomie (ev. Perkutan)**
- **Partielle Fasziektomie (segmentale Aponeurektomie)**
- **Komplette Fasziektomie (Aponeurektomie)**
- **Radikale Exzision und folgenden Spalthautdeckung**
- **Dermofasziektomie**
- **Open palm Technik**

Komplikationen

- von 3.6% bis 39%¹
- Major Komplikationen in 15%¹

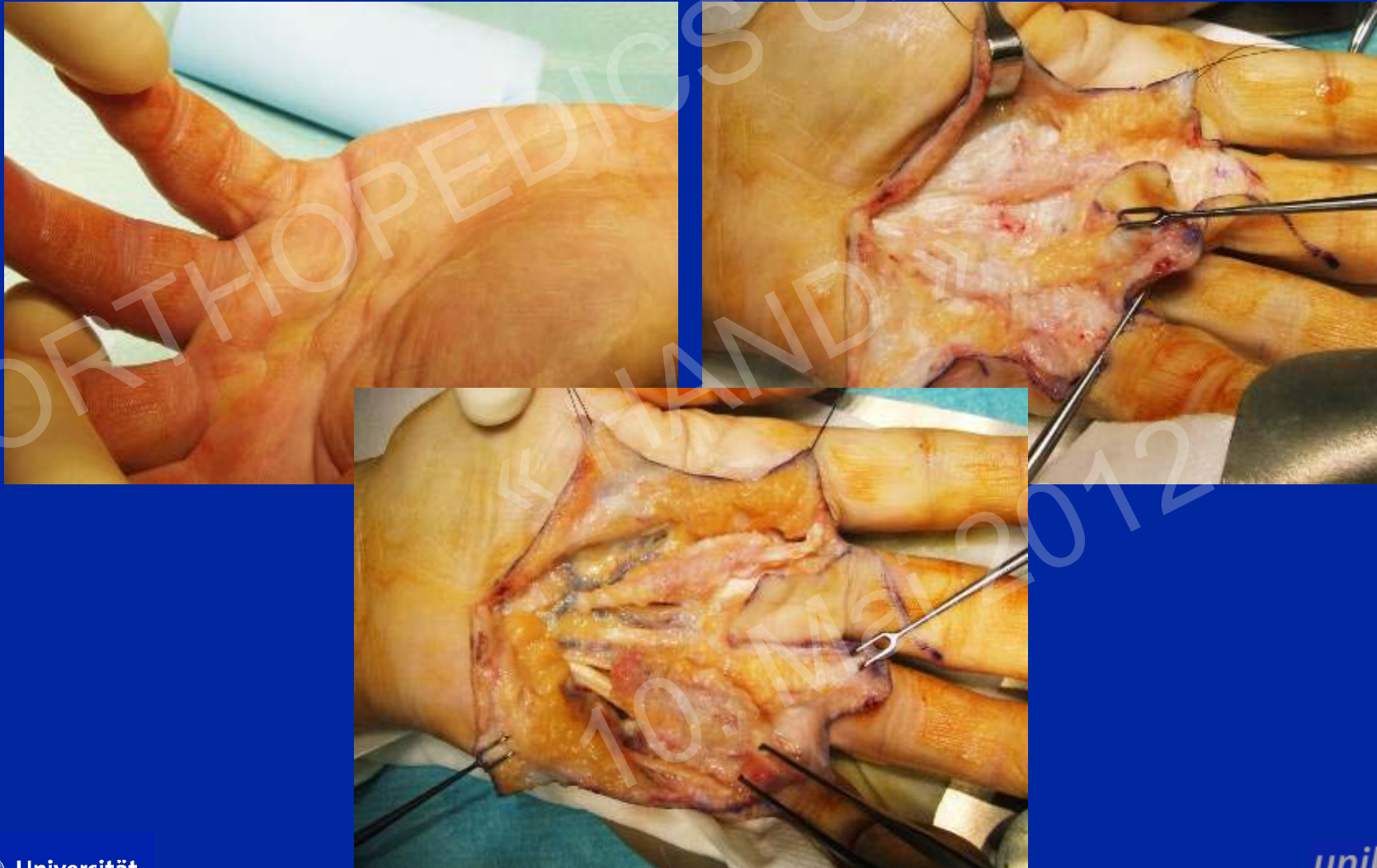
Digitalnervenläsion	3.4%
Digitalarterie	2%
Infektion	2.4%
Hämatom	2.1%
CRPS	5.5%

Rezidiv

- bis zu 50% nach 5 Jahren
- je nach Serie und Definition des Rezidivs

ORTHOPEDICS UPDATE
« HAND »
10. Mai 2012

60 jähriger Patient



Collagenase Clostridium Histolyticum Xiapex[®]

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Injectable Collagenase Clostridium Histolyticum for Dupuytren's Contracture

Lawrence C. Hurst, M.D., Marie A. Badalamente, Ph.D., Vincent R. Hentz, M.D.,
Robert N. Hotchkiss, M.D., F. Thomas D. Kaplan, M.D., Roy A. Meals, M.D.,
Theodore M. Smith, Ph.D., and John Rodzvilla, M.D.,
for the CORD I Study Group*

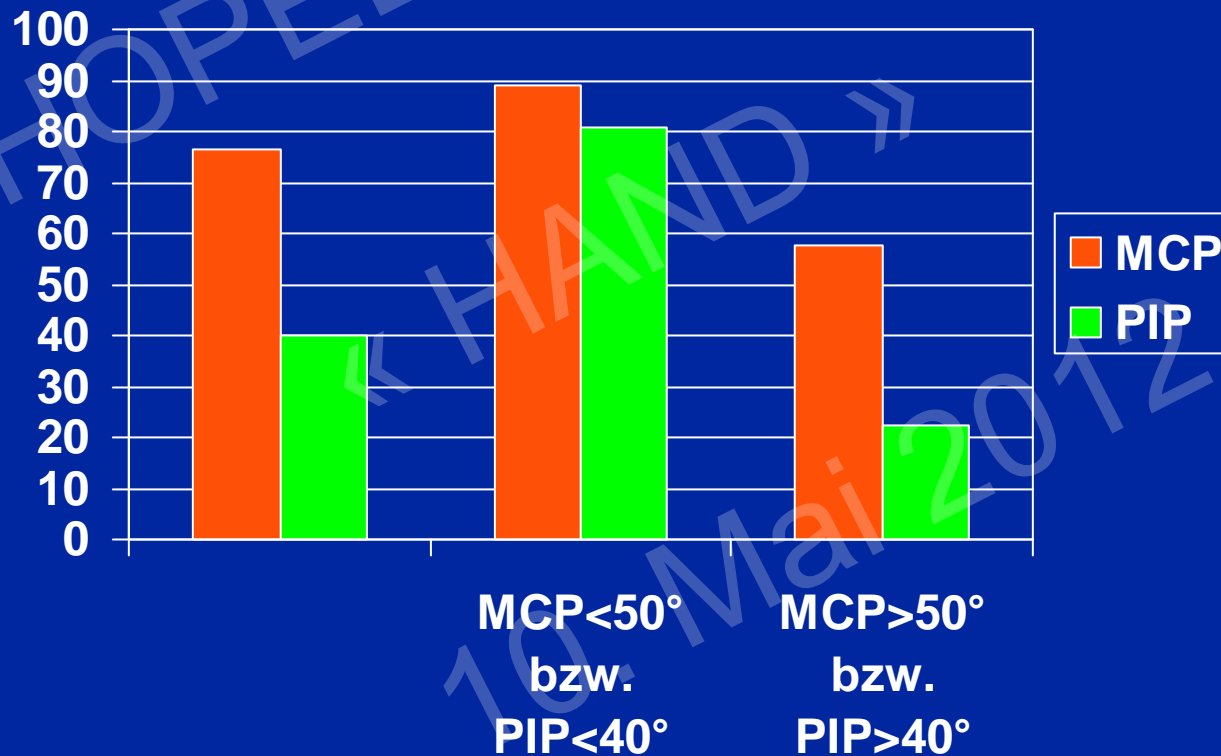
N ENGL J MED 361:968-79

Collagenase Clostridium Histolyticum Xiapex[®]

- **Prospektive, randomisierte, doppelblinde Placebo-kontrollierte Multizenterstudie**
- **n = 308**
204 Kollagenase, 104 Placebo
- **Primäre Endpunkt war weniger als 5° Extensionsdefizit 30 Tage nach der letzten Intervention**
- **Jeder Zyklus dauerte 30 Tage, max. 3 Zyklen**

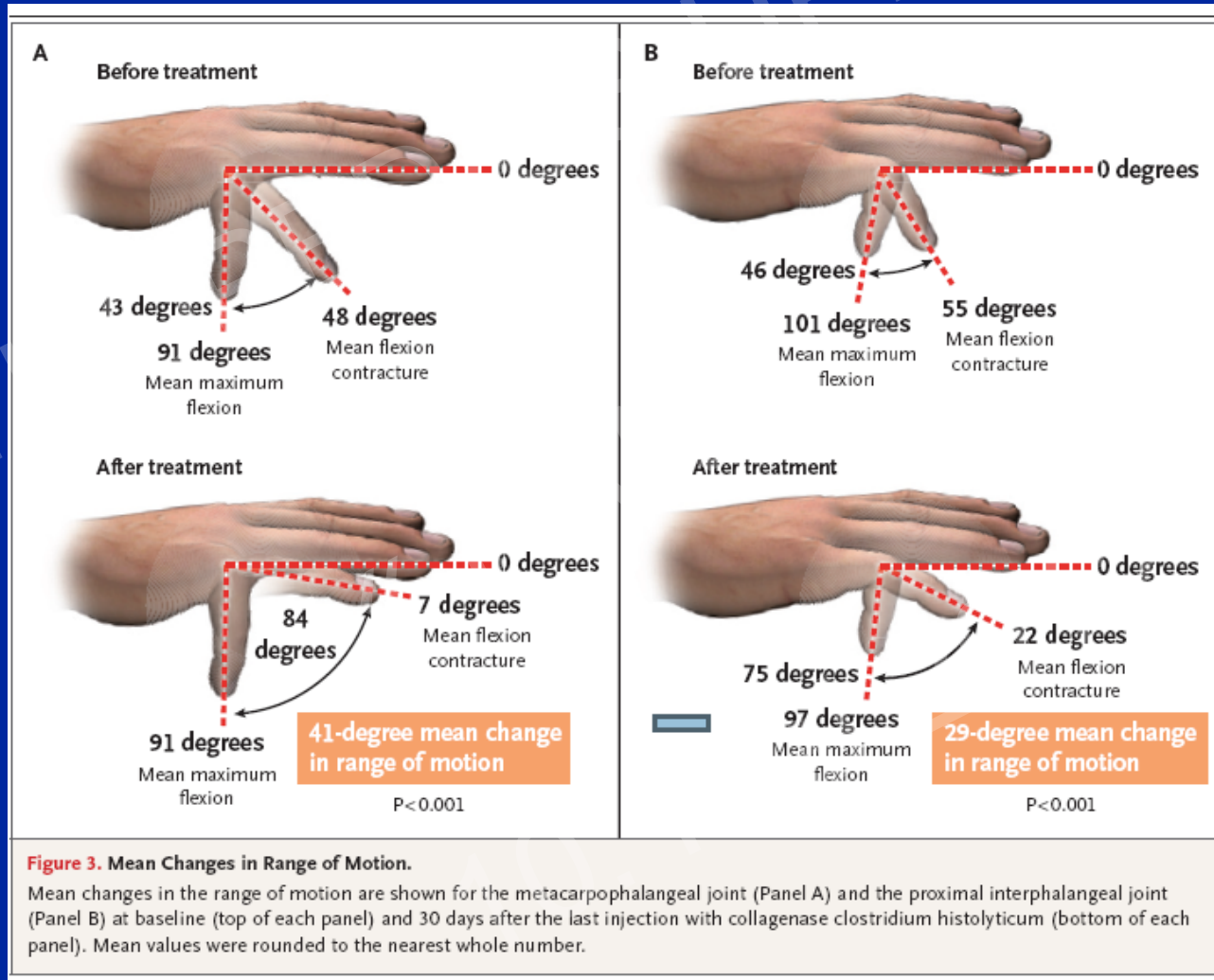
Collagenase Clostridium Histolyticum Xiapex[®]

Primären Endpunkt erreichten, d.h. $< 5^\circ$ Extensionsdefizit



N ENGL J MED 361:968-79

Collagenase Clostridium Histolyticum Xiapex[®]



Collagenase Clostridium Histolyticum Xiapex[®]

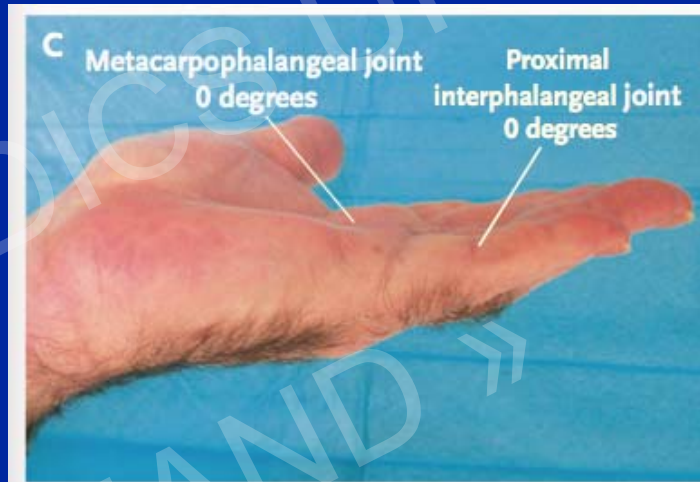
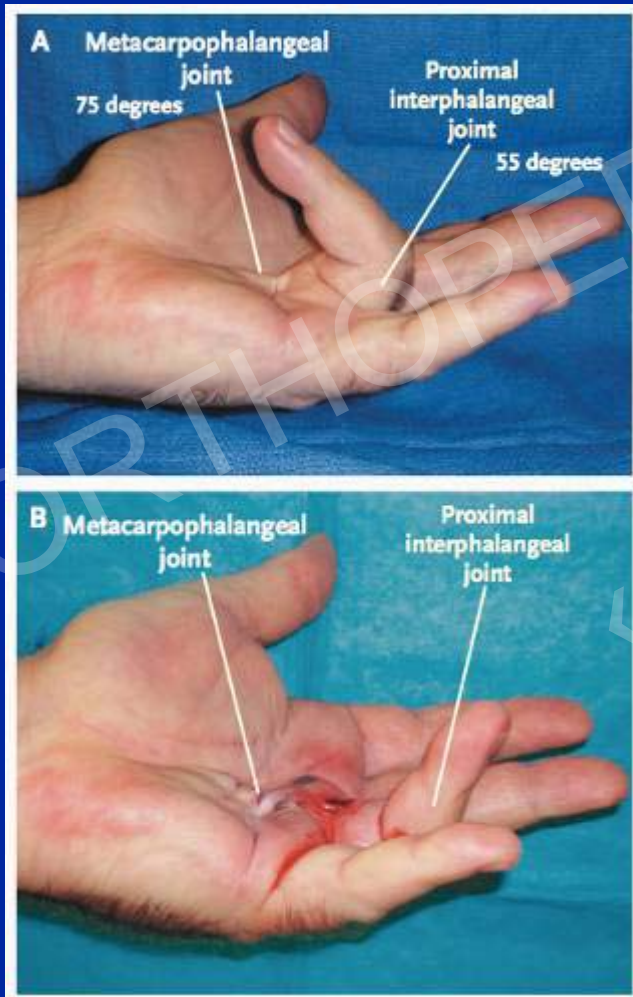


Figure 1. Dupuytren's Disease in a Study Patient.

Before treatment (Panel A), this patient had a contracture of 75 degrees in the metacarpophalangeal (primary) joint and 55 degrees in the proximal interphalangeal (secondary) joint of the ring finger on his left hand. Panel B shows the hand 1 day after collagenase clostridium histolyticum injection and manipulation. Although only the cord affecting the metacarpophalangeal joint was injected, 30 days after the last (third) injection of collagenase clostridium histolyticum, a reduction of contracture to 0 degrees in both joints was achieved (Panel C).

Collagenase Clostridium Histolyticum Xiapex®

Table 3. Treatment-Related Adverse Events in 2% or More of Patients in Either Study Group.*

Variable	Collagenase Group (N= 204)	Placebo Group (N= 104)	P Value†
	no. of patients (%)		
Patients with ≥1 treatment-related event	197 (96.6)	22 (21.2)	—
Peripheral edema	148 (72.5)	4 (3.8)	<0.001
Contusion‡	104 (51.0)	2 (1.9)	<0.001
Injection-site hemorrhage	76 (37.3)	4 (3.8)	<0.001
Injection-site pain	66 (32.4)	5 (4.8)	<0.001
Upper-extremity pain	63 (30.9)	3 (2.9)	<0.001
Tenderness	54 (26.5)	0	<0.001
Ecchymosis	51 (25.0)	1 (1.0)	<0.001

2 Sehnenrupturen

Axillary pain	10 (4.9)	0	0.02
Arthralgia	7 (3.4)	0	0.10
Inflammation	8 (3.9)	0	0.06
Blood blister	7 (3.4)	0	0.10
Joint swelling	6 (2.9)	0	0.10
Headache	5 (2.5)	1 (1.0)	0.67
Swelling	5 (2.5)	0	0.17
Injection-site vesicles	4 (2.0)	1 (1.0)	0.67

* Treatment-related adverse events had a possible, probable, or unknown relationship to the study drug.

† P values were calculated with the use of Fisher's exact test.

‡ In the collagenase group, 103 reports of contusion were attributed to injury, poisoning, or procedural complications. One report was attributed to musculoskeletal and connective-tissue disorders.

ORTHOPEDICS UPDATE

uniklinik
balgrist

« FRANKO »
10. Mai 2012



Universität
Zürich ^{UZH}

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