Dupuytren’s Treatment: An Update

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Dupuytren’s Treatment

• Surgery
• PNF
• Collagenase

No Disclosures
Chen et al. JHS 2011

*Cost analysis of three techniques:*
- Open partial fasciectomy is not cost-effective.
- Needle aponeurotomy is cost-effective if the success rate is high and no neurological injury.
- Collagenase injection is cost effective when priced under $945.

CURRENT TRENDS IN NONOPERATIVE TREATMENT

- Percutaneous needle fasciotomy (PNF) (NA-needle apponeurotomy)
- Collagenase injection

PNF

- 1970s- French rheumatologists
- USA- Charles Eaton, others
- Technique of (PNF) with a 25g needle
- Risk: injury to nerve, vessel, tendon
- Multiple digits, minimal cost
- Learning curve
PNF OUTCOMES

• Foucher et al. PNF complications and results. JHS 2003
• *RECURRENT RATES AT 3 YRS = 58%

• In USA, Charles Eaton has popularized PNF
• Reported >8000 hands treated per technique article
• Data not published, only technique

Pess et al. Needle Results. JHS 2012

• 474 patients / 1013 fingers [ min 3 yr F/U ]
• Correction to 5 deg or less: MP 98%, PIP 67%
• Recurrence of 20 deg or less over original postprocedure corrected level:
  MP 80%, PIP 35%
• RECURRENCE [ MP = 20% / PIP 65% ]
  Complications (skin tears 3.4%, nerve injury – presumed lacerated nerve)
• * Did not document if patients required more Tx*
• Purpose: compare results to Rheum in Paris
• # 74 PNF (77% initial success)
• Recurrence rate of 65% at 32month F/U
• (30 deg change from post treatment ROM)

van Rijssen  PNF vs Limited Fasciectomy
5 year follow up. PRS 2012

RCT of PNF vs LF
Recurrence
• PNF 85% (avg time 2.1 years)
  MP joint: 57% / PIP joint 70%
• LF 26% (avg time 3.8 years)
  MP joint: 21% / PIP joint 21%

van Rijssen  PNF vs Limited Fasciectomy
5 year follow up. PRS 2012

Treatment of Recurrence
After PNF #46: (25 PNF, 7 LF, 12 none)

After LF #11: (4 PNF, 0 LF, 7 none)
van Rijssen et al. PNF for Recurrence JHS 2012

- 30 treated with PNF for recurrence
- 4.4 years F/U
- 50% recurrence (>30 deg)

Collagenase

Collagenase clostridium histolyticum
FDA approved for treatment of Dupuytren’s contracture of the hand
Cost $3200-5400
small risk tendon rupture (small finger / PIP)
Small learning curve?
Multiple injections?
Antibodies?

Peimer et al. CORDLESS Study: 3 yr data. JHS 2013

- 3 yr data of planned 5 yr period
- Defined recurrence: >20 deg of prior success tx joint
- #1080 treated joints [623 achieved success]
- 217/623 with recurrence (27% MP, 56% PIP)
- Only 7% of recurrence had intervention
- 50% of partially corrected joints (150/301) had recurrence
**Peimer et al. CORDLESS Study: 3 yr data. JHS 2013**

- ** Further analysis of the data **
- 156/1080 joints failed treatment (14%)
- 367/924 recurrence (40%)
- No longer term complications reported

**Withhaut et al. Collagenase Results from 2 open label studies. JHS 2013**

- JOINT 1 (USA) and JOINT 2 (Aust / Eur)
- #879 joints (587 patients)
- [up to 5 total injections]
- Clinical success (0-5 deg of full extension 30 days after last injection)
- Clin success: 497 (57%) of treated joints
- (MP 70% vs PIP 37%)
- 1.2 injections per cord
- 92% patients "very satisfied"
- No reported major complications

**A Comparison of Percutaneous Needle Fasciotomy and Collagenase Injection for Dupuytren Disease**

Jason A. Nylick, DO, Babee W. Oliff, BS, Michael J. Garcia, MD, Alfred V. Hau, MD, Jeffrey D. Sorn, MD

- mean follow up 6 months (3-28 months)
- No major complications
- Patient satisfaction similar

<table>
<thead>
<tr>
<th>TABLE 1.</th>
<th>Clinical Success (Reduction of Contraction in % of Normal) of MCP and PIP Joints</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MCP</td>
</tr>
<tr>
<td>Patience</td>
<td>36/52 (61%)</td>
</tr>
<tr>
<td>Fasciotomy</td>
<td>14/22 (64%)</td>
</tr>
<tr>
<td>P value</td>
<td>0.37</td>
</tr>
</tbody>
</table>
• PIP joints improved after collagenase with Therapy
• 56 deg --> 22 deg (at cord rupture) --> 12 deg (s/p OT)
• Orthotic intervention + Reverse blocking,
• oblique retinacular ligament stretching
• F/U only 4 weeks

99+ Papers published in 2015-2016

Collagenase ( X...... )

• WHAT’S NEW?
Collagenase Treatment for Dupuytren Disease of the Thumb and First Web

- #14 Hands 6 month F/U
- distal transverse commissural ligament of the first web corresponding to the natatory ligament (Grapow ligament) and can cause an adduction and retro position contracture
- 13/14 deficit improved
- No splint
- 1/14 early recurrence at 6mo

The Impact of Collagenase Clostridium bistolyticum Introduction on Dupuytren Treatment Patterns in the United States

- Dupuytren encounters increased 19K, 35K
- CCH=increased, surgery=decreased, needle=same

Measurement Properties of the Brief Michigan Hand Outcomes Questionnaire in Patients With Dupuytren Contracture

- (Zurich, Switzerland)
- briefMHQ (12 items)
- full length MHQ (37 items)
- QuickDASH (11 items)

briefMHQ
excellent reliability, good validity, high responsiveness
# Patient Satisfaction With Collagenase

Jack Bradley, MD

- #213 treated with CCH (Southampton, UK)
- 73% very satisfied or satisfied / 21% dissatisfied
- 75% would have CCH again
- 17% would not—concern drug not working, concern for recurrence, painful procedure
- Prior surgery: 70% would have CCH over surgery
- Warn about high incidence of recurrence

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## The Efficacy and Safety of Concurrent Collagenase

**Clostridium Histolyticum Injections for 2 Dupuytren Contractures in the Same Hand: A Prospective, Multicenter Study**

R. Glenn Gure, MD; Sven Erik Larsen, MD; Gary M. Yon, MD; Stephen Coleman, MBBS; Brian Davis, MS; Brian M. Geary, PhD; Gregor J. Radbom, MD; James P. Tupa, MD; Lawrence C. Hume, MD

- Two doses of 0.58mg CCH
- Can be used to treat 2 joints or 2 cords
- Comparable outcomes to previous CORD studies
- 1 tendon rupture from injection at PIP joint **
- 1 case of anaphylaxis?

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## Comparison of Treatment Outcome After Collagenase and Needle Fasciectomy for Dupuytren Contracture: A Randomized, Single-Blinded, Clinical Trial With a 1-Year Follow-Up

Judith Steinsberg, MD; Allan Ero-Showman, MD; Jan Frèdik, MD, PA

- [Sweden] #140 (69-Collagenase / 71-Needle)
- 88% collagenase/90% needle [reduction of contracture
- After 1 year 90% of both groups had full extension
- 1 patient in each group with recurrence
• 644/950 enrolled
• 47% of successfully treated joints had recurrence
• 39% MP / 66% PIP (recurrence= > 20deg worsening)
• 56 deg --> 22 deg (at cord rupture) --> 12 deg ( s/p O)
• 105 secondary tx (47% surgery,30% CCH, 23% other)
• Tubiana (correct deformity, avoid complications, shorten postop recovery, prevent recurrence)

• 49,000 injections first 3 years
• 26 tendon ruptures (0.05%)

• 1 year outcome PNF vs Collagenase
• 75% contracture reduced by 3 months both groups
• 4 vs 8 skin ruptures
• at 1 year similar outcomes
Collagenase Enzymatic Fasciotomy for Dupuytren Contracture in Patients on Chronic Immunosuppression
Waters et al Am J Orthop Nov 2015

- Collagenase treatment safe for patients on chronic immunosuppression
- Skin tears only / No infections

The quantitative role of flexor sheath incision in correcting Dupuytren proximal interphalangeal joint contractures
Blazar PE, Floyd EW, Earp BE JHS Eur Jul 2016

- Residual PIP contracture after fasciectomy
- #19 patients (preop 58deg 30-90
- Correction after fasciectomy 28 deg
- Flexor tendon sheath incision performed
  Further correction of 23 deg
- Low morbidity
- additional release of PIP joint not necessary

CASE EXAMPLE: 56yr old male
PNF tx

BILATERAL PNF

4 weeks post treatment
66 yr old male Bilat contractures

Collagenase Tx - LEFT

Collagenase Tx - RIGHT

2-3 months post Tx
Declined repeat injection or Tx
Shortcomings
• Success and recurrence rate (inconsistently defined)
• Contracture measurement accuracy
• post treatment splinting

Function

SUMMARY
• Various treatment options to manage contracture to allow improved function
• THE CAUSE AND CURE REMAIN ELUSIVE
• Future basic science research needed