Open Fasciectomy is the Best Way to Treat Dupuytrens

Mark Rekant MD
Associate Professor
Philadelphia Hand Center
“When the Theca is Contracted, Nothing Should be Attempted for the Patient’s Relief, as no Operation or Other Means Will Succeed; but When the Aponeurosis is the Cause of the Contraction, and the Contracted Band is Narrow, it May be with Advantage Divided by a Pointed Bistoury, Introduced Through a Very Small Wound in the Integument. The Finger is then Extended and a Splint is Applied to Preserve it in the Straight Position”

Sir Astley Cooper, 1822
EARLY OPEN TREATMENTS

1. Pathologic Palmar Fascia
2. Fasciotomy thru Open Transverse Incisions
3. Stressed Postoperative Extension Splinting
4. Emphasized an Occupational Predisposition

What We Think We Know
A disease of the Palmar Fascia ... Yes, But...

- Reactive Connective Tissue Response to Anoxia??
- to Free Radicals??
- to Trauma??
- to Fat??
- to the Palmar Dermis??

Dupuytren’s Contributions

1. Pathologic Palmar Fascia
2. Fasciotomy thru Open Transverse Incisions
3. Stressed Postoperative Extension Splinting
4. Emphasized an Occupational Predisposition
Medical Legal Question

1. Work Related?
2. Accident Related?

Biology of Dupuytren's Disease
Two primary cell types
- Fibroblast
  - Found in the cords of diseased tissue
- Myofibroblast
  - Found in palmar nodules early, intense metabolic activity present
  - Fibronectin plays role in myofibroblast aggregation

Normal Fascla Anatomy
- Palmar aponeurosis
- Pre-tendinous bands
  - Originating from the palmar fascia, travel distal, spiral, deep, attach to MCP
- Septa of Legueu and Juvara
Dupuytren's disease represents pathologic change in pre-existing normal fascia.

Anatomy

Natatory ligament -- the web
Lateral digital sheath
Cleland's ligament - passes dorsal to the digital artery and nerve
Grayson's ligament - passes volar to the digital art & N

Pathologic Anatomy

- Pre-tendinous cords develop from pretendinous bands → Cause MP Joint contracture
- Natatory cord from natatory ligament → Causes web space contracture
- Spiral cord develops from spiral band & lateral digital sheath → Cause PIP Joint contracture
Pathoanatomy

Ligament and Sheet

Pathoanatomy

History

1. Usually appears between the ages of 40 & 60
2. Seen more often in males
3. Appears earlier and is more aggressive in women than men
4. Nodules often painful when first noticed
In 20th Century, John Hueston has Set the Ground Rules

1. Limited Fasciectomy
2. Dissection of the Digital Nerves
3. Dermofasciectomy & Skin Grafting for Recurrence

Timing and Surgical Selection Require An Integrated Plan

1. Age
2. Extent Disease
3. Rate of Disease Progression
4. Comorbid Conditions
5. Patient Expectations
6. Postop Rehab Willingness
Table Top Test?

Function Difficulty and Rate of Progression Better than Set Degree of Contracture

MCPJ: 30Deg - Do Well
PIPJ: 20Deg - Unpredictable

Surgical Endevors

1. Goal of Surgery to Restore Function and Usage Not “Cure” Disease
2. This Goal Achieved by Variety of Surgical Options
3. No Surgical Option Free of Complications
**Dupuytren’s Disease**

**Surgical technique**
- Longitudinal approach
- Transverse approach
- "Z"-plasty
- Skin Grafts

---

**DUPUYTREN’S DISEASE**

THE CHALLENGE TO THE SURGEON IS TO:
1. REMOVE THE DISEASED TISSUE WHILE LEAVING THE N-V BUNDLES INTACT.
2. ACHIEVE RELEASE AT THE PIP JOINT WHILE MAINTAINING ROM OF THE FINGER

---

**Incisions**
- 1. Brunner (zig-zag)
- 2. Skoog (straight line with Z-plasty)
- 3. Zig-zag with V-Y extension
Wound closure

- Direct closure with Z-plasty
- Open palm technique
- Skin graft
- Combined Technique
**Dupuytren’s Disease**

**The open palm technique**

**Advantages**
- Patient comfort
- No wound slough
- No hematoma

**Dupuytren’s Disease**

**The open palm technique**

**Disadvantages**
Putting up with the open wound  
(Close within 3-5 weeks)

*Schneider, LH: Hand Clinics 7:723.1991*

**HOW TO TREAT THIS?**
Open Fasciectomy with Z-plasty

Of course . . .
AND HOW TO TREAT THIS?
COMBINED TECHNIQUE
Fasciectomy
Open Palm Technique
Any Doubters Left??

Case Presentation

PRE INJECTION

POST INJECTION...
POST INJECTION – 7 weeks

Outcomes

• Restoration of motion after an extended follow-up can be anticipated
• 92% of NL at 19 yrs follow-up (Shaw et al, J Hand Surg, 1996)
• 74% of NL at 5.6 yrs follow-up (Foucher et al, Ann Chir Main, 1992)

COMPLICATIONS of Dupuytren’s Release
**RECURRENCE**

1. Only a matter of time
2. Blame it on the surgeon or the disease?
3. Does not occur beneath skin graft [Hueston]
4. Extension—blame on disease
5. Revision Surgery 18%

**Overall Complication Rate**

- Infection
- Hematoma
- Skin Necrosis

\[
\text{Common Triad 4 to 8%}
\]

- Nerve Injury 1.5% *(Excludes Numbness < 3Mos.)*
- Arterial 0.8%
- Tip Gangrene 0.1%

- Loss of Finger Flexion 5%
- "Flare" - RSD 4.2%

**Thank you**

Jason and Michael