OCCUPATIONAL HAND INJURIES: Impacts on Impairments and Disability

Anthony Mollano MD
Specializing in Hand, Wrist, and Elbow Surgery
Concord Orthopaedics, Concord, NH
BACKGROUND
-Eight years in practice in NH at Concord Orthopaedics-
->5000 patient visits/yr; >500 surgeries/yr
-WC problems around 20% practice
WORK IS THE GREAT THERAPY FOR HAND RECOVERY!

THE PERFECT WORLD RELATIONSHIP OF WORK AND HAND INJURIES

Figure 69. Typical workshop set up in a private room on a hand ward. A few of the products made by patients with injured hands are displayed.

*For another expression on whirlpool bath therapy, see Chapter III, p. 119.—Ed.*
Some patients’ perspectives of dealing with their occupational injury (and medical problems sometimes), and the worker’s compensation system.
• Overview
  – Impairments vs Disability
    • What are disability risk factors?
      – (many same risk factors for other poor health outcomes)?
  – Engel’s Bio-psycho-social Model
  – Occupational Hand Problems
    • CTS Etiology, “Myths about CTS”
    • CTS and “Illness Constructs”
    • How to understand and minimize disability
• What is the differences between impairments and disability?
Real hand impairment and disability

-48 yo wood worker
-dominant hand table saw accident mangled index, middle, and ring fingers 2012
-high school education
-has poor relationship with his employer
-single dad, no family support
-significant pain intolerance with injury, poor pain coping skills, in pain management
-often says “I can’t ever do wood work again”
-does not want to retrain for other work
-previous truck driving career not an option b/c of old DUI
Biopsychosocial Underpinnings of Upper Extremity Injury, and Disability

• Biopsychosocial Model
  – Engel, Science, April 1977
  – “The need for a new medical model: a challenge for biomedicine”
  – “bio-psycho-social-cultural” model originally
Impaired, but not disabled

It is a waste of time to be angry about my disability. One has to get on with life and I haven’t done badly. People won’t have time for you if you are always angry or complaining.

(Stephen Hawking)
#1 reason for arm occupational disability—temporary and permanent

- Psychosocial Factors
  - Poor self-efficacy
  - Pain catastrophizing
  - Anxiety
  - Pain intolerance
  - Poor pain and life coping skills
  - Bad employer/employee relationship
  - Secondary gains (i.e. not uncommon, needing to be home for child and family care)
Severe Occupational Injuries with Severe Impairments:
- from severe nerve and/or structural pathology
Pyschosocial Profiles explains WC Injury Poorest Outcomes

Ring, 2013, MGH
-Poor emotional heath, and self-efficacy are most significant predictors of perceived disability after orthopaedic surgery
#1 most common occupational hand problem in my practice-
CARPAL TUNNEL SYNDROME/CTS
CTS is HAND numbness AND pain, from a “PINCHED MEDIAN NERVE” in the wrist within the ONE inch section of the “CARPAL TUNNEL”.

With AGE AND USE, SWELLING OCCURS WITHIN TUNNEL ELEVATING PRESSURE RESULTING IN “PINCHING” OF THE NERVE.
Patients always ask – did " " cause my gets CTS?
So what IS THE CURRENT CTS Causation Evidence?

- David Ring/MGH, J Am Hand Surg
  - 117 ARTICLES EVALUATED
  - “A review of the quality and strength of evidence for etiology of CTS”
BRADFORD CAUSATION Scores for potential “causes” ranked from HIGH, to MODERATE, LOWEST

- Scores of various factors
  - NONE EXISTED (for HIGH)!
  - MODERATE:
    - GENETICS (TWIN STUDIES)
    - RACE (WHITES)
    - OBESITY
    - DIABETES (nerve is more susceptible?)
    - AGE (wear and tear)
    - GENDER (FEMALES)
  - Repetitive hand use
  - Vibration
  - Type of Occupation
  - Repetitive Wrist Flexion
  - Stressful Manual Work (LOWEST OF ALL!)
SO WHO HERE IS AT MOST AND LEAST AT RISK FOR CARPAL TUNNEL SYNDROME?
Big Myth = repetitive strain injury causes CTS

• **Myth definition** - An unproved or false collective belief that is used to justify an idea construct
  
  – i.e. “Typing causes CTS”; Maybe biggest myth in lay public about CTS.
    
    • What patients say AND BELIEVE falsely all the time!
    • All over internet blogs and webpages!
    • Activities aggravate symptoms, but don’t cause the disease.
    • There is NO DOSE RESPONSE WITH ACTIVITIES AND CTS.
      
      – (contrast this to the VERY DIFFERENT issue where SMOKING 20 CIGARETTES A DAY is known to INCREASE LUNG CANCER RISK, and SMOKING CESSION REDUCES BACK RISK)
Illness construct

- i.e. Illness INVENTED OR CONSTRUCTED

- Existing because people agree to behave as if it exists
  - 1800s - Was consumption/sepsis caused by the evil humors?
  - 1980s - Was CTS and tendonitis caused by “Cumulative Trauma Disorder/CTD” and “Repetitive Strain Injury/RSI”

- 2010 - CAN NO LONGER ACCEPT ILLNESS CONSTRUCTS - Just as humors don’t cause sepsis, repetitive hand use does not cause CTS!
It is a problem when society believes in CTS speculative etiologies

**MAJOR IMPACT ON SOCIETY**

Speculative etiologies cause illness constructs

ILLNESS CONSTRUCTS INCREASE ILLNESS AND DISABILITY

We should insist upon strong scientific support prior to adopting them
TRUTHS- CTS

- CTS is scientifically diagnosable with NCS/EMG.
- CTS is most common human mononeuropathy.
- CTR is one of most successful modern surgeries.
- CTR is #3 most commonly done orthopaedic surgery.

Thomas Aquinas, 13th cent. “A judgement is said to be true when it conforms to external reality”
SURGERY (mini-open, 5min, local anesthesia)
Satisfaction (and hopefully rare dissatisfaction) after CTR)

• CTR is a high success rate surgery BUT

• What are evidence based predictors of greater dissatisfaction after CTR?
  – Depression
  – Negative NCS/EMG (I.e. CTS not objectively bad)

• What are evidence based predictors of perceived disability?
  – Pain catastrophizing
  – Depression
  – Static/constant numbness
WC CTS - RETURNING TO WORK

MOST ULTIMATELY RTN TO SAME WORK after surgery (>99% will get back to FDW)

- **AFTER 1-2 DAYS**, LIGHT USE OK AND LIGHT WORK ok with RESTRICTIONS
  -(while stitches in for 2 wks, no one is 100%)

- **AFTER 2 WKS POSTOP**, most will be FDW

- **FOR LABORERS AND HEAVY WORK**, they need 1-3 mths for strengthening RTN, sometimes OT

- In MILD CTS, MMI after few wks or mths, no PIR.

- In SEVERE CTS, MMI takes up to 1 year for nerve recovery
  - Residual numbness that affects dexterity will have PIR.
Thanks