Workers’ Compensation Issues in Upper Extremity Orthopaedics

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An occupational disease is one in which there is a direct cause-and-effect relationship between a work hazard and the disease.

Hazardous Occupations in Kansas
- Farm workers
- Grain elevator operators
- Sheet metal mechanics
- Construction workers
- Railroad employees
- Laborers
- Oil field workers

Initial intent of WC was to compensate workers and their families for serious or fatal job injuries. Over time, more common upper extremity occupational problems have been covered under WC. Though good surgical results may be achieved, motivating WC patient to RTW may be a bigger challenge.

Modern History of Workers’ Compensation Legislation

Germany
- 1880’s – Otto von Bismarck began comprehensive social insurance
- Workers contributed to accident insurance fund
- First comprehensive WC system eliminating employer negligence

Great Britain
- 1880 – Employer’s Liability Act eliminating negligence
- 1906 – Workman’s Compensation Act brought change in workers’ attitudes
- 1913 – Sir John Collie cited abuses in “Malingering and Feigned Sickness”

Federal Employees Compensation Act (1908)
- Private insurance, no-fault system
- Federal and state regulations
- Covered employees engaged in interstate and foreign commerce

Wisconsin was first state to enact binding WC law

Wisconsin State Workers’ Comp Law (1911)
- No-fault state insurance for workers
- Employees – limited medical expense payments, wage loss benefits, but could not sue employer
- Employers – immune from liability suits, cost of insurance passed to the consumer
By 1949, all states had WC systems and none required employee contribution.

11 National Commission on State Workers’ Compensation Laws (1972)
- Provide fair and prompt benefits
- Provide unified approach to settle disputes
- Eliminate trials, attorneys from process
- Promote safety and prevention at work

12 Expanding Scope of Coverage
- Full coverage – no statutory limit on time from injury or cost of care
- Inclusion of occupational diseases
- Aggravation of chronic diseases
- Medical cost per claim doubled from 1980-88

13 Kansas Workers’ Compensation Reform Act (2011)
- Accident – traumatic event resulting in injury
- Aggravation pre-existing conditions excluded
- Repetitive trauma must be unique to work and not be present in non-work environment
- Accident or repetitive trauma must be prevailing or primary factor causing injury

14 Five Big WC Issues
- Injury Causation
- Cost of Care
- Treatment Outcome
- Return to Work
- Impairment & Disability

15 Issue #1 – Injury Causation

16 Causation is the legal determination of whether a job activity or work injury caused an impairment. Physicians are often asked to opine regarding causation. Best opinion is based on patient history, mechanism on injury.

17 Injury Causation
- Determined by history and exam
- Occupational medicine specialist knows workplace best
- Orthopaedist may clarify causation
- Legal challenges delay medical treatment

18 Injury Causation – Key Questions
- Did the injury occur at work?
- Exactly how did the injury occur?
- Are the symptoms aggravated by work?
- Was there a pre-existing injury?
- Was there a pre-existing medical illness?

19 Risk Factors for Carpal Tunnel Syndrome
Obesity
Hypothyroidism
Diabetes (14–30%)
Pregnancy (50%)
Renal disease
Inflammatory arthritis
Gender (women > men)
Advanced age (> 50 yrs)
Genetic factors

20 Occupation May Be Risk Factor for CTS
• Increased incidence in certain occupations
• Positional stress – dental hygienists
• Mechanical stress – beef handlers / cutters
• Vibration stress – sheet metal mechanics
• Repetitive stress – production workers
• Keyboarding is not causative


23 Despite weak evidence that carpal tunnel syndrome is work-related, treatment is often covered under workers’ compensation insurance.

24 Upper Extremity Pain Syndrome
• Repetitive Stress Injury
• Cumulative Trauma Disorder
• Work–Related Overuse Syndrome
• Repetitive Motion Disorder
• Myofascial Pain Syndrome

25 Australian Experience – Repetitive Stress Injury
• 1983 – Telcom Australian w/90,000 employees
• In two years, rate of RSI increased x 30!
• UE pain syndrome w/o objective findings
• Most patients were keyboard operators concerned about computerized workplace
• Patients did not respond to any treatment

26 Cooper v the Commonwealth – Resolution of RSI
• Australian Supreme Court decided case
• Employer not guilty of negligence
• Plaintiff had not suffered an injury
• All costs awarded against plaintiff
RSI epidemic disappeared after decision

27 US Experience – Keyboard-Related RSI Litigation
- 1990’s – multiple products liability cases vs keyboard manufacturers
- Alleged defective design & failure to warn
- Nine cases consolidated vs one company
- 1998 – Unanimous verdicts for defendant
- No evidence that keyboard was causative


29 Etiologic Factors for Cubital Tunnel Syndrome
- Idiopathic
- Intrinsic anomalies
- Trauma
- Post-traumatic deformities
- Elbow OA, RA
- Ganglia, tumors
- Post-operative
- Heterotopic ossification
- Elbow instability

30 Occupation May Be Risk Factor for CuTS
- Repetitive elbow flexion – cashiers, assembly workers, construction workers
- Mechanical compression – truck drivers
- Vibration exposure – laborers
- Post-traumatic ulnar nerve subluxation


- French study 61 surgical pts, 120 controls
- Administered questionnaires on occupations
- High risk occupations sewers, tailors, domestic helpers
- Study group greater family history of thumb OA
- Probable complex multi-factorial origin

33 Causation – Summary
- CTS – Compensable, weak evidence
- RSI – Not compensable
- CuTS – Compensable, weak evidence
34 **Issue #2 – Cost of Care**

35 **The Effect of Payer Type on Orthopaedic Practice Expenses.**

36 **Office Encounter Documentation**
   - What is the diagnosis?
   - Based on history, is problem work-related?
   - Can the patient work? If not, when RTW?
   - What are work restrictions? Duration?
   - When maximum medical improvement (MMI)?
   - Expect permanent impairment? When rating?

37 **Effect of Workers’ Compensation on Diagnosis and Treatment of Patients with Hand and Wrist Disorders.**

38 **The Value Added by Electrodiagnostic Testing in the Diagnosis of Carpal Tunnel Syndrome.**

39 **Electrodiagnostic Testing**
   - May confirm diagnosis
   - Quantifies disease severity
   - Serves as a preop baseline
   - In–office NC–Stat acceptable
   - Important in WC patients

40 **Outcomes of Carpal Tunnel Surgery With and Without Supervised Postoperative Therapy.**

41 **Magnetic Resonance Imaging in Evaluating Workers’ Compensation Patients.**
   Babbel & Rayan, J Hand Surg 2012; in press.
   - Retrospective review all W/C pts over 3 years
   - MRI ordered by referring physician
   - 67 MRI scans on 62 patients
   - All MRI scans were unnecessary for diagnosis
   - 63% clinical dx disagreed with MRI dx

42 **Overutilization of shoulder MRI as diagnostic screening tool in patients with chronic shoulder pain.**
   - Retrospective study 101 pts, 104 shoulders
   - Atraumatic chronic shoulder pain
   - 41% pts had MRI before shoulder evaluation
   - 90% over–utilization rate for MRI
   - No difference in outcome with or w/o early MRI
43 WC Shoulder Injury Evaluation
- H&P to assess work–relatedness, cuff
- XR to r/o fracture or dislocation
- Supportive treatment, NSAIDs, PT
- Observation & serial examination
- Soft tissue injury may resolve 4–6 wks
- MRI may be unnecessary so defer

44 Cost of Care – Summary
- WC administrative costs are higher
- Early MRI evaluation should be deferred
- Conservative management first
- Use discretion for postop PT & OT

45 Issue #3 – Treatment Outcome

46 Setting Treatment Expectations is Key
- Discuss all treatment options
- Establish outcome expectations
- Engage patient in decision process
- Physical therapy, work conditioning
- Return to work is not guaranteed
- Alternative work, vocational training

47 Carpal Tunnel Release Techniques
- Open CTR
- Mini–open CTR
- Endoscopic CTR


50 Mini–Open Technique is my preferred surgical technique for carpal tunnel release.

- Retrospective study WC vs NWC groups
- Telephone survey – RTW, job change, litigation
- RTW – WC group 12 weeks, NWC 3 weeks
- Changed jobs – WC 35%, NWC 4%
- CTS litigation – WC 77%, NWC 2%

Retrospective study with or w/o attorney
Assessed RTW, grip and pinch strength
RTW – Rep group 24 wks, non-rep 20 wks
No difference in functional recovery rates
No difference in final functional values

53 Ulnar Nerve Entrapment or Subluxation at the Elbow
54 Ulnar Nerve Operative Techniques
- Simple in situ decompression
- Arthroscopic-assisted decompression
- Medial epicondylectomy (King & Morgan)
- Subcutaneous transposition (Curtis)
- Submuscular transposition (Learmonth)
- Intramuscular transposition (Adson)
- Transmuscular transposition (Dellon)

- Three randomized, controlled clinical trials
- Nabhan (2005): No difference SD vs SQT
- Gervasio (2005): No difference SD vs SMT
- Biggs (2006): No difference SD vs SMT
- Simple decompression procedure of choice due to simplicity, potential faster recovery

57 Anterior Transmuscular Transposition is my preferred surgical technique for ulnar nerve entrapment or subluxation at the elbow.
58 Endoscopic Cubital Tunnel Release is touted as surgical technique permitting earlier return to work.
60 Shoulder Outcomes
- Shoulder self-assessment
- Subacromial impingement
- Rotator cuff tears
- Answer is “Yes” for all 12 diagnoses studied
- 1063 consecutive shoulder pts
- Two questionnaires on general health
- W/C group reported significantly lower function
- Study controlled for patient age and gender


63 Post–Traumatic Impingement
- Common after shoulder injuries
- Fall is usual injury mechanism
- Anatomy may predispose some patients
- Subacromial injection may be effective
- Subacromial decompression if no better

- 75 pts rx w/acromioplasty for impingement
- 49% had filed work comp claims
- 97% good or excellent result and 91% RTW
- W/C group took 14.2 weeks RTW
- Non W/C group took less than 5 weeks RTW

- Consecutive series 106 pts (40 W/C, 66 not)
- No difference in mean outcome scores
- Significant difference in RTW (13.7 vs 9.1 wks)
- Higher work demand > delayed RTW in both

66 Rotator Cuff Tears
- Most common in middle-aged men
- Traumatic vs degenerative dilemma
- Partial–thickness vs complete
- Full–thickness are small, moderate or massive
- Nonoperative treatment temporizes
- Arthroscopic repair is standard of care

- 103 consecutive rotator cuff repairs
- W/C 24 patients, non W/C 79 patients
• 42% W/C pts returned to full activity
• 94% non W/C pts returned to full activity
• Time to RTW not significantly different (6 mo)

• 125 patients (39 W/C pts, claim pending)
• Evaluated w/outcome measures 1 yr postop
• W/C status associated w/worse outcome
• Analysis controlled for confounding factors

• 220 patients, 110 W/C, 110 non–W/C
• 41% RCR, 59% decompression +/- DCE
• W/C status associated w/worse outcome
• Both groups improved at 1 year postop


71 Issue #4 – Return to Work


73 Risk Factors for Delayed RTW
• Pre–existing arm disability
• Government employment
• Repetitive motion
• Heavy labor / forceful hand use
• Long commutes
• Long works days
• Poor physical health
• Depression
• Low self–confidence

74 Risk Factors for Delayed RTW (cont)
• Pain severity
• Poor coping skills
• Low job satisfaction
• Fear of re–injury, increased pain
• No autonomy at work
• Non–supportive work policies
• Non–supportive co–workers
• Workers’ compensation claim
Active litigation


76 Factors Associated with Earlier RTW
- Proactive RTW planning by all parties
- Patient understanding of injury and prognosis
- Optimistic patient expectations for recovery
- Physician recommendation for patient RTW
- Employer accommodation of injured worker

77 Practical RTW Guidelines
- Preoperative discussion setting RTW goal
- Earlier RTW is better, but too soon is bad
- Provide work restrictions every office visit
- Goal should be RTW without restrictions
- FCE may be helpful w/permanent restrictions
- RTW after each operative treatment

78 Failed RTW
- Secondary gain issues may prevail
- Wage benefits during recovery period
- Compensation if permanently unable to work
- FCE may be helpful to assess outcome, effort
- Litigation may lead to chronic pain syndrome
- Physician must recognize early and disengage


81 Issue #5 – Impairment & Disability

82 Impairment is a medical term for loss of use or derangement of body part, function or system.

83 Disability is a legal term for the difference between the patient’s physical capability and that required by a specific job. Disability is also defined as the reduction of a patient’s capacity to meet personal, social or occupational demands or statutory or regulatory requirements due to an impairment.

84 Final questions from the work comp insurance carrier
- Has the patient reached MMI?
- Are there permanent work restrictions?
- Is there any permanent partial impairment or disability?


AMA Guides to Evaluation of Permanent Impairment
- Standard framework for evaluation
- All organ systems may be rated
- Applies to permanent impairments
- Impairment ratings are estimates
- Physician judgment important
- Difficult to avoid rater bias

Permanent Partial Disability is the percentage reduction in the patient’s ability to earn comparable wages in the open labor market.

Temporary Total Disability occurs when patient is unable to return to gainful employment for a time–limited period.

Temporary Partial Disability occurs when patient returns to restricted work at less than full pay. Compensation payment makes up the salary difference.

Permanent Total Disability occurs when the patient is completely and permanently unable to engage in gainful employment.

Apportionment is the degree to which an impairment is due to an occupational disorder as opposed to a pre–existing condition. Often an issue in successive work injuries.

Upper Extremity Impairment in AMA Guides
- Amputation, any level
- Loss of motion, any joint
- Sensory loss, any nerve
- Motor loss, any muscle
- Nerve entrapment, any nerve
- Peripheral vascular disease
- Joint crepitus

Upper Extremity Impairment in AMA Guides (cont)
- Snovial hypertrophy
- Joint subluxation, any joint
- Carpal instability
- Arthroplasty, any joint
- Intrinsic tightness
• Constrictive tenosynovitis
• Loss of grip strength


Rating Methodology
• Determine which tables apply
• Finger impairment > hand
• Hand impairment > upper extremity
• Lower extremity? Spine?
• Combine body parts > whole body

Months to years later, expect attorney call requesting deposition to justify your impairment rating.

Impairment & Work Restrictions
• AMA’s Guides should be used as a guide
• Impairment may not correlate w/restrictions
• Work restriction may avoid re-injury
• Patient w/o impairment may need restriction
• Pt w/impairment may not need restriction

Common WC Misconceptions
• Injury causation may be determined arthroscopically
• Every work comp patient must have MRI evaluation
• Every work comp problem has a surgical solution
• Every work comp story has a happy return-to-work ending
• Permanent work restrictions imply permanent impairment

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