The Industrial Hand Trauma Patient

Clinical – Science - Service

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Clinical

Occupational Health

Hand Surgery

IHT
HS – WW – committed to craft, same practice – IHT - reconstruction
Your industrial hand trauma patient is our ideal patient
Peer reviewed publication, editing, and instructional courses
Service

- Healthcare = Service
- Hand Surgeon at end of the service line
- Take care of everyone who comes before me
  - Patient
  - Employer
  - Occupational Health Nurse
  - Insurer
  - Case Manager
  - Referral physician
Good and Bad Customers

**Patient**
- Non-compliant
- Poor effort
- Illness behavior, secondary gain, gaming the system

**Employer**
- Non-compliant with safety of patient
- Interfere with receipt of care
- False representations, gaming the system

**Good service = Not tolerating wrong behavior**
Expectations of Customers

- Arrange optimal medical care
- Produce outstanding result
- Shortest amount of time
- Lowest cost
- Expertise
  - What needs to go to the Hand Surgeon?
  - When does it need to go?
What needs to go?

- **Obvious**: An injury that requires the technical execution of surgery
  - open wound trauma
  - unstable or displaced fractures, dislocations

- **Not obvious**: When the MOI creates the possibility of a functionally significant structural disruption
  - closed ligament injury or closed tendon rupture
  - normal x-rays, no wound
When does it need to go?

- Emergent
- Urgent
- Same to TDI
- Subscriber
- Nonsubscriber
- LOG
  - Employer’s choice
  - Claim not yet accepted
Emergent Variables

- Vascular insufficiency (hours)
- Nerve compression (hours)
- Open fracture / joint (8 hours)
- Infection (same day)
- Open wound (same day)
- Irreducible fracture / dislocation (same day)


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Why open wounds?

- Infection!
- Swanson > 200 patients
  - Timing < 24 hours
  - Degree of wound contamination / devitalization
  - Medical health of the patient
- If 3 variables optimized: infection < 1%
- When not, recent study showed up to 30%

Infection!

- Superficial – respond to oral abx alone
- Deep – do not
  - First - debride – take deep tissue cultures
  - Then open wound care plus abx
- Do NOT give abx prior to deep culture
- 3 critical deep targets
  - Bone
  - Tendon sheath (digital flexors)
  - Joint
- MRSA 80 – 90 % (no Keflex)
Urgent Variables

- **Tendon laceration**
  - (72 hours)
- **Nerve laceration**
  - (72 hours)
- **Unstable fracture**
  - (5-7 days)
- **Unstable joint**
  - (5-7 days)

What is an emergency?

Texas Administrative Code Title 28, Part 2, Chapter 133, Subchapter A, Rule §133.2

(3) Emergency—Either a medical or mental health emergency as follows:

(A) a medical emergency is the sudden onset of a medical condition manifested by acute symptoms of sufficient severity, including severe pain, that the absence of immediate medical attention could reasonably be expected to result in:

(i) placing the patient's health or bodily functions in serious jeopardy; or

(ii) serious dysfunction of any body organ or part.
Date of Original Injury

- Traumatic condition sets in motion biologic response
- Modern system – patient presentation often delayed
- DOI does not determine an emergency
  - Examples: infection, fracture, tendon & nerve laceration
- Negative impact of delayed treatment on final outcome only further enhanced by late presentation
- Staged reconstruction

*Henry MH. Specific complications associated with different types of intrinsic pedicle flaps of the hand. Journal of Reconstructive Microsurgery 2008; 24:221-225.*
Our Clinical Protocol

- Evidence based medicine from C-S-C
- Patient Offered Treatment Options > Autonomy
  - Every patient offered a minimum of two options and one of the options is always non-surgical
  - Always receives description of the positive features and negative features of that option
  - Each feature assigned a likelihood of occurrence
  - Overall outcome predicted for each option
  - Patient chooses his own treatment EVERY time
Non-Surgical Conditions

- Stable, non-displaced fractures
- Soft tissue crush without open wound
- Nail bed crush without displaced fracture or nail plate elevation


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Surgical Conditions

- All open wounds
  - Fracture
  - Dislocation
  - Tendon laceration
  - Nerve laceration
- Unstable, displaced fractures
- Only a few joint dislocations (SLIL, RUL)
- Most closed tendon ruptures

Wound Mechanisms

- Sharp laceration (transverse / oblique)
  - Edges survive (beware of epidermal inversion)
  - Lacerated tendons
  - Lacerated nerves

- Burst wounds (stellate / longitudinal)
  - Edges die from crush induced ischemia
  - Fractures
  - Rupture of flexor tendon sheaths

- Grinder wheel
  - Most heavily contaminated
  - Ricochet off bone
Fun with Fractures

- P3 – displacement by hydrostatic pressure
- P2
  - Shaft easily treated (splint or pins)
  - Base – highly complex – unstable PIP joint
- P1 – cannot be stabilized by aluminum splint
- MC – cannot be stabilized by wrist splint
- The classic “drill stop” injury = ring midshaft oblique MC fracture...
Clinician – Scientist - Cycle

Critical
Ingestion of
PR Literature

Critical
Evaluation of
Clinical
Outcome

Editing
Scientific
Content of
Other Work

Formal
Research and
PR Publication

8 specialty journals

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> 1500 surgical cases / year

Critical Ingestion of PR Literature

Editing Scientific Content of Other Work

Critical Evaluation of Clinical Outcome

Formal Research and PR Publication

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Clinician – Scientist - Cycle

> 100 PR publications / presentations

Critical Ingestion of PR Literature

Editing Scientific Content of Other Work

Critical Evaluation of Clinical Outcome

Formal Research and PR Publication
Clinician – Scientist - Cycle

Critical Ingestion of PR Literature

Critical Evaluation of Clinical Outcome

Editing Scientific Content of Other Work

Formal Research and PR Publication

Editorial board 3 journals
When CSC is ignored – case 1

- Contaminated open trauma index finger
- BHER – flushed and sutured
  - Epidermal inversion simple prolene
    - No chance to heal – epidermis to epidermis
    - Contaminated foreign bodies sealed in
  - Keflex – but 80 – 90 % CA – MRSA
- Hand clinic 7 days – grossly infected
- Saved finger, solved infection, stiff
- Ultimately patient elects amputation
When CSC is ignored – case 2

- Closed crush trauma to thumb
  - No wound
  - Normal Radiograph
  - No flexion – Occupational Physician – contracted HS

- Hand surgeon
  - No MOI history
  - Cursory exam
  - Attributes lack of flexion to pain and swelling
  - Therapy – 3 months – no change in status
When CSC is ignored – case 2

- First surgery – no flexion at 3 months
  - Explore – let’s see what we find…???
  - Attempts repair after 3 months of myostatic contracture – uses method proven in published studies to be inadequate
  - Repair fails – 6 months more therapy

- Peer review – 2 page explanation of why tenolysis will not work, but how to correctly perform one when appropriate
When CSC is ignored – case 2

- Second surgery – no function, chronic pain
  - Attempts tenolysis – despite explanation of why it will fail
  - Breaks every known rule in the published literature for correct surgical methods
  - Fails

- Patient / Employer – both customers highly unsatisfied
  - Out of work for 2 years
  - Chronic pain, useless dominant thumb
  - Hired a lawyer
CSC = Outcome Oriented
HANDOFF® Hand Trauma Program

- Sub-specialty augmentation for urgent care clinic
- Immediate work-ins
- After hours availability
- Most weekends
- Specialized service
- One phone call
  - 713-333-4477
  - 24 hours / 7 days

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Easy to find...
Important reminders for HANDOFF®

- Patient needs to be NPO
- Hospital does not have tetanus; administer prior to arriving
- Patent should then proceed directly to receive care
- Free cab service available. If patient has a driver, will be allowed to go home right after receiving treatment.
- FAQs and Surgery Packet (Spanish / English)
- Follow up appointment: written on front of the surgical packet. Instructed to call (713) 333-4477 on the next business day after surgery to confirm the follow-up appointment and receive a therapy Rx.
- Return to work. Patients call (713) 333-4477 during business hours of 8-5 M-F for a return-to-work date (usually 24 hours post-op) and any work restrictions.
- Prescriptions for pain medications, antibiotics if appropriate

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Customer service

- Please call Dr. Henry w/ medical questions
- Please call Sean Lundy w/ operations questions
- Medication management
- Same day service
- Clinical note + operative report
- Custom splints
- IR / MMI
Thank you for your time.
We believe that our mutual goal should be to provide your employees with the best possible care in an expedited fashion. We participate in the TDI-DWC program, as well as many insurance company's managed care and commercial contracts. However, during emergency, emergent, or urgent circumstances it can be difficult to obtain verification of insurance benefits, current subscriber status, and/or employment in a favorable time frame; this delay can translate to reduced medical outcomes in many situations. By executing this Letter of Guarantee, below, and accepting the financial responsibility for your injured worker, you are helping to enable rapid and efficient medical care rendered by a team of experienced hand trauma specialists, while retaining the flexibility of deciding later whether or not to submit an insurance claim.

Of course, if you utilize a Third Party Administrator (TPA) to administer your medical claims, then we will be happy to forward all claims to the TPA, after care is rendered, and we will honor any contractual discounts we may have agreed to, as stated below. As a reminder, a TPA administers claims for medical expenses, which naturally occur after care is rendered. Because a TPA is not empowered by Texas Law to approve or deny the medical care of an injured worker, we cannot accept the signature of a TPA staffer on the Letter of Guarantee, below. Thank you.

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Letter of Guarantee

COMPANY NAME (hereafter called “the Company”) desires that PATIENT NAME (hereafter called “the Patient”) receive medical care for injuries sustained on or about DATE OF INJURY. In that regard, the Company hereby agrees to the following. The Company guarantees that it will pay Hand & Wrist Center of Houston, P.A., SCA Houston Hospital for Specialized Surgery, L.P., and Gulf Anesthesia Associates, P.A. (hereafter called “the medical care providers”) their usual and customary fees for medical care rendered to the Patient. Payment will be made within 30 days after receiving notice. This Letter of Guarantee may be canceled only with 30 days written notice by either party.

The Medical Providers will not seek additional payment from the Company under this Letter of Guarantee if 1) payment is made by an insurance carrier in accordance with the relevant state or federal worker’s compensation act’s statutory fee schedule and time table, or 2) payment is made under terms of a Certified Health Care Network’s contracted fee schedule and time table, 3) payment is made by a Third Party Administrator’s Provider Agreement, if any are in effect, or (4) the Company has workers’ compensation insurance with Texas Mutual Insurance Company.

Payment will be made even if the injury is determined to have occurred while the Patient was not at work, or if the injury is not reported to the insurance carrier (if any), or if a claim is not filed with the insurance carrier, by the Employer, in a timely fashion. Payment will be made even if the patient tests positive for drugs or alcohol at the time of the injury.

Any dispute regarding this Letter of Guarantee will be resolved in a Court of Harris County, Texas. Pre and post judgment interest to accrue on the unpaid bill at the maximum rate allowed by section 304.002 of the Texas Finance Code. Because the Company agrees to pay these fees if and when there is no insurance coverage, then lack of insurance is not a defense to payment of the fees. This Letter of Guarantee is effective upon the date appearing below. This agreement may only be modified or terminated in writing. This agreement is an enforceable contract.

Agreed:

Printed name and title

Authorized signature
(Acting on behalf of the Company)

Date: __/__/__