ACUTE SPORTS INJURIES
WHEN TO SEND TO ER
WHAT INJURIES CAN WAIT

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SPORTS MEDICINE AND SHOULDER
FELLOWSHIP AT THE HOSPITAL FOR
SPECIAL SURGERY

American Orthopaedic Society for Sports Medicine
Arthroscopy Association of North American
New England Shoulder and Elbow Surgeons

I have no conflicts of interest relative to this presentation

SPORTS MEDICINE TEAM
CERTIFIED ATHLETIC TRAINER
PHYSICAL THERAPIST
PHYSICIANS ASSISTANT
NURSE PRACTITIONER
PHYSICIAN MD DO

MUST ALL WORK TOGETHER TO PROVIDE
CONTINUITY OF CARE

COMMUNICATION
MUST HAVE COORDINATION WITH
THE ENTIRE SPORTS MEDICINE TEAM
WE ARE TREATING ATHLETES AND
THEIR PARENTS OR GUARDIANS
NEED CONSISTENT MESSAGE TO THE
ATHLETE AND THEIR CARETAKER AND
THEIR COACH

TREAT ACUTE INJURIES
NEED TO DEVELOP TRUST BETWEEN THE
SPORTS MEDICINE TEAM AND THE ATHLETES
AND PARENTS
THREE As
ABILITY
AVAILABILITY
AFFABILITY

CURRENT COST OF MEDICINE
VALUE BASED MEDICINE
MEASURE OF QUALITY VERSUS COSTS
INSURANCE COMPANIES PREACH VALUE BUT
MOSTLY CARE ABOUT COSTS
ATHLETES AND PARENTS WANT HIGH QUALITY
BUT ARE ALSO COST SENSITIVE
ACUTE SPORTS INJURIES

ON THE FIELD MANAGEMENT
TREAT INITIAL INJURY
THEN
OPTIONS
IN INCREASING ORDER OF COST
REFER TO TEAM PHYSICIAN
SEND TO URGENT CARE
SEND TO ER

Most important message
No one gets a MRI at the ER or at Urgent care!

ACUTE SPORTS INJURIES

SHOULDER
ELBOW
WRIST AND HAND

ACUTE SPORTS INJURIES

CLAVICLE FRACTURES
MEDIAL
MIDSHAFT
LATERAL
CLOSED FRACTURE
NEUROVASCULAR INTACT
PLACE IN SLING OR IMMOBILIZER FOLLOW UP IN ORTHOPEDIC OFFICE
NO VALUE BUT ADDED COST FROM URGENT CARE OR ER VISIT!

ACUTE SPORTS INJURIES

SHOULDER
CLAVICLE FRACTURES
AC SEPARATION
GLENOHUMERAL DISLOCATION
SUBLUXATION

ACUTE SPORTS INJURIES

CLAVICLE FRACTURES
AAOS Now December 1, 2019
Benton Heyworth MD et al
Two year functional outcomes of operative versus nonoperative treatment of completely displaced midshaft clavicle fractures in adolescents: Results from the prospective multi-institutional FACTS study
Adults nonunion 15% symptomatic malunion 10%
267 Adolescent patients
Nonunion .2%
Symptomatic malunion .5%
Delayed union 1.7%
CLAVICLE FRACTURES

Mechanism of injury
Fall onto the point of the shoulder
Fall onto elbow

AC SEPARATION

Clavicle appears up
Shoulder actually droops down
AC SEPARATIONS

On the field management
Immediate sling or shoulder immobilizer
Ice and NSAIA
Refer to Orthopedics
Grade 1 to 3 sling for 7 to 14 days and rehab
Nonoperative treatment more value than operative
Grade 5 often surgery

SHOULDER INSTABILITY

Onset-acute traumatic
insidious atraumatic
Direction-
Anterior, posterior, inferior MDI
Magnitude- sublux/dislocate
Volition-positional vs. muscular control

ANTERIOR SHOULDER INSTABILITY

If acute can try on field reduction
Check NV status before and after reduction
Milch technique
Patient supine
Hold affected wrist and gradually abducting
the arm in an overhead position and then
external rotating to 90 degrees. With the
other hand push the humeral head superior
and lateral direction.

ANTERIOR SHOULDER DISLOCATION

Once reduced sling or shoulder immobilizer
Paterson, William et al. Position and Duration of immobilization after primary shoulder dislocation
A systemic review and meta analysis of the literature
JBJS AM 2010 92 (18) 2924– 33
There is no benefit for sling immobilization for longer than one week for the treatment of primary dislocation

ANTERIOR SHOULDER DISLOCATION

No need for urgent care of ER if clinically reduced
Follow up with team physicians for PE and x-ray
Refer to Orthopedics
Nakagawa et al. AJSM 2019 The Development process of bipolar bone defects from primary to recurrent instability
44 PATIENTS CT AFTER PRIMARY AND RECURRENT DISLOCATION
PRIMARY 43% GLENOID DEFECTS AND 96.7% HILL-SACHS
FIRST RECURRENCE GLENOID DEFECTS 75% and HILL-SACHS 88%
ANTERIOR SHOULDER DISLOCATION

Baseball lead arm of batter shoulder subluxation posterior with follow through
Blocking Linemen with shoulder forward flexed axial load subluxes shoulder posterior
Acute subluxation sling and refer
Any shoulder subluxation ligamentously lax patient MDI can be treated in sling and refer

POSTERIOR SUBLUXATION AND MDI

ELBOW

Fractures Dislocation subluxation Baseball UCL injuries

FRACTURES

Assess NV status Pain but full AROM PROM and no swelling can sling and refer to team physician
Any swelling with deformity limitation of ROM Sling sling and send to ER

DISLOCATION SUBLUXATION

Elbow dislocation Harder to reduce than shoulder Sling, sling and send to ER
Subluxation Hyperextension injury Swollen elbow no deformity Can splint sling and refer to team physician

SUSPECT UCL INJURY

Thrower hears a pop with medial elbow pain and swelling Could represent UCL versus medial epicondyle fracture in younger athlete If younger athlete can send for x-ray but skeletally mature athlete can wait for Team Physician evaluation UCL tear is not an emergency!
HAND AND WRIST INJURIES

Fractures and dislocations
Tendon injuries
Ligament injuries

HAND AND WRIST INJURIES

Wrist fractures Radius, Ulna, scaphoid check NV status
Minimal swelling and deformity can splint and refer to Team physician
Obvious deformity and unstable send to ER
Most hand fractures ~Boxers metacarpal fractures and phalangeal fractures can splint and refer

HAND AND WRIST INJURIES

Tendon injuries
Mallet finger and FDP ruptures
Splint and refer

HAND AND WRIST INJURIES

Ligament injuries
Gamekeepers thumb UCL MP thumb
Scapholunate ligament injury
Collateral ligament injuries to the MP and PIP joints
Splint and refer
Simple dorsal PIP dislocations reduce splint and refer
HIP AND PELVIS

Avulsion fractures - Running heard pop immediate pain
Iliac crest
ASIS - Sartorius
AIIS - Rectus Femoris
Ischial tuberosity - hamstrings
Crutches WBAT and refer to Team Physician

KNEE INJURIES

Unstable fractures
True knee dislocation-tibia
dislocated relative to femur
Splint and send to ER

Patella dislocation immediately
reduce gradually extend knee and
push patella medially
Knee immobilizer – crutches
Refer to team physician

ACL INJURIES

ACL MCL
Document exam
Knee immobilizer crutches
Refer to Team Physician
Will not get MRI at the ER!

HS females 1 per 10K AE
Relative risk 1.4 to HS males
Soccer
HS females 13.22 per 100K AE
HS males 4.35 per 100 K AE
Females 14.77 RR competition to practice
Males 8.69 RR competition to practice
FOOT AND ANKLE INJURIES
DO YOU NEED TO SEND FOR XRAY

**Ottawa ankle rules**
Xray if pain over malleolar zone
Bone tenderness along distal 6 cm posterior edge of tibia, fibula or medial and lateral malleolus
Inability to bear weight immediately and at delayed evaluation for 4 steps

**Midfoot pain**
Bone tenderness at Navicular or base of 5th metatarsal
And inability to bear weight immediately and for 4 steps at later evaluation

**Ankle fractures – malalignment displacement**
Splint and send to ER
Ankle and foot pain minimal swelling can splint and use crutches refer to Team Physician

**Ankle Sprains- High and low ankle sprains**
Splint crutches refer
Minimally displaced ankle fractures metatarsal fractures, Lis – Franc injuries, achilles tear
Splint crutches and refer

ACUTE SPORTS INJURIES

MOST CAN BE INITIALLY TREATED ON FIELD OR SIDELINE

ATHLETE WILL NOT GET MRI IN ER!

Communication with team physician, caretakers and athletes will determine next step in treatment

REFERENCES

1. AAOS Now December 1, 2019

Benton Heyworth MD et al

Two year functional evaluation of operative versus nonoperative treatment of completely displaced midshaft clavicle fractures in adolescents Results from the prospective multi-center, level 2 FACTS study

2. Nakagawa et al AJSM 2019

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