GH Instability in the High-Level Athlete

ACUTE MANAGEMENT OF GH DISLOCATION IN FOOTBALL PLAYER FROM ATC PERSPECTIVE

HEATHER ELLIOTT, MS, ATC, LAT

1

Overview

- **Epidemiology**
- Anatomical Overview
- Considerations for Reduction
- On-Field **Assessment**
- Reduction Techniques
- Management Guidelines
- Follow-Up/Referral Guidelines

2

Epidemiology

50-55% of joint dislocations are shoulder

90-98% of GH dislocations are anterior

Definted as complete separation of articular surfaces that requires manual reduction and results in capsular tissue trauma

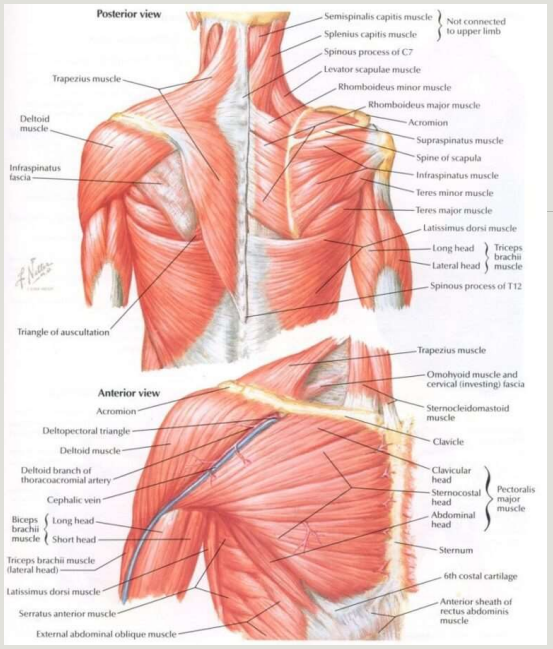
Inherently unstable joint with high degree of mobility

Recurrence rates can be 50-90% in patients <20 y/o (5-10% of patients >40 y/o) after 1st time anterior GH dislocation

Common causes:

- High impact to an arm that is ABD + ER/HABD
- Forced pushing mechanism
- FOOSH

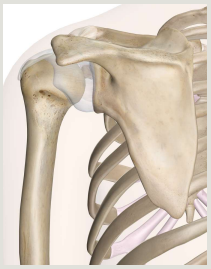
3

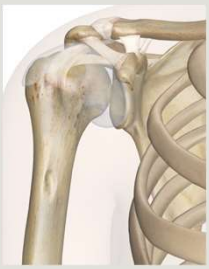


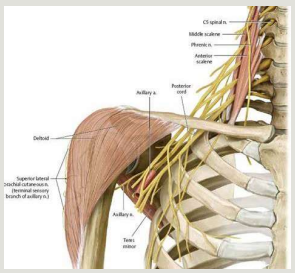
Anatomical Overview

Static v dynamic stabilizers

- Labrum, GH ligaments, glenoid, intra-articular pressure
- Rotator cuff mm, periscapular mm, biceps tendon







4

General Considerations for Reduction

- Recurrent v first time dislocation
- ATC education/training in reduction techniques
- Concomitant fracture – clavicle, humeral shaft
  - Pediatrics (epiphyseal plate involvement)
- Neurovascular systems intact
- Advantages:
  - Successful relocation rate higher when prompt
  - Restoration of neurovascular systems
  - Potential for less articular cartilage damage
  - May not need immediate transfer/ED referral
  - Reduced pain/spasm -> better functional outcome
- Disadvantages/Contraindications:
  - Clear evidence of concomitant fracture*
  - Multiple attempts should not be attempted – especially in 1st time dislocation

5

Legal/Procedural Considerations for Reduction

- State/local practice act
- Employer protocols
- Written standing orders (standard operating procedures) from overseeing MD
  - Specific criteria should be discussed between ATCs and supervising MDs
- Written or verbal informed consent from pt
- Comfort level of supervising MD and ATC with reduction techniques/protocols for on site reduction

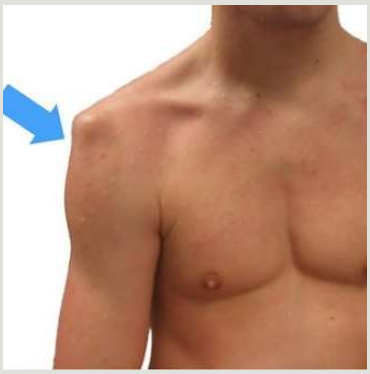
6

On Field Assessment

Neurovascular intact
- Check before/after every relocation attempt
- Capillary refill and intact sensation

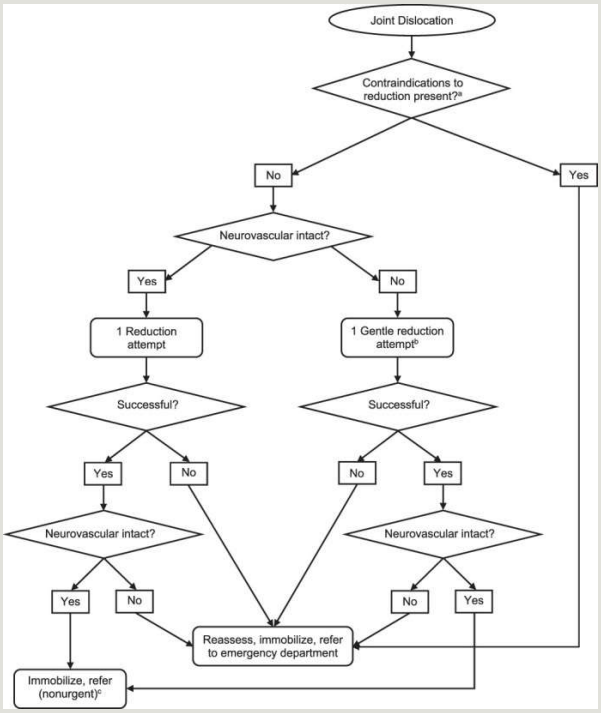
Pre-reduction
- Typical presentation – prominence of posterior shoulder with anterior flattening
- Palpable/visible bony fracture – do not attempt reduction without MD & XR
- SC & AC jt evaluation
- Is pain management/sedation needed for reduction?

Post-reduction
- Referral (depending on 1st time and procedure outlined in standing order)
- ROM and strength assessment
  - Reassess neurovascular structures
  - If recurring, may be able to RTP
- Document care provided

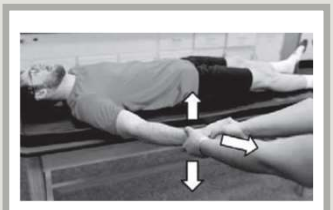


7

On Field Assessment Algorithm



8



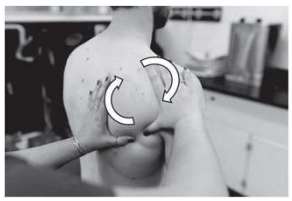
Reduction Techniques

ER maneuver

Davos technique – self reduction

FARES technique

9



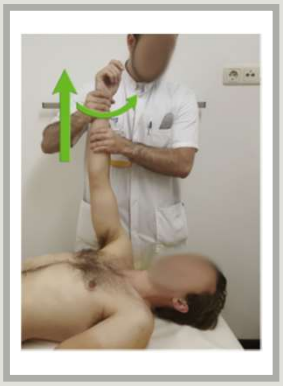
Reduction Techniques

Stimson's technique

Scapular manipulation

Stimson + scapular mobilization

10



Reduction Techniques

Milch Manuever

Spaso technique

Matsen's

11

Practice vs Game Management

Competiton (sports med MD and surgeon present in addition to 3-4 ATCs)

- Defer to ortho for reduction

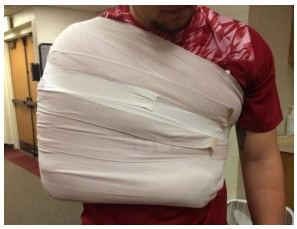
Practice (No MD present, 3-4 ATCs present)

- Assess and determine whether reduction can be attempted based on presentation & considerations previously discussed
- If imaging or sedation needed prior to reduction attempt, splint and transport
- If failed reduction attempts, splint and transport

ATC manages post reduction

- If 1st time – further ortho/MD eval and imaging done on site
- If recurrent – ROM/strength testing done and if no evidence of new injury and those are WNL, may be allowed to RTP after MD clearance

12



Splinting/Referral for Reduction

- Reduce on site
  - Splint and send for imaging/MD referral if 1st time
  - May wait on referral if recurrent injury and full ROM/strength are intact
  - If in competition or MD available on site, will defer to their judgement on splinting/sling use
- Splint for referral
  - Place in sling in pads if unable to easily remove pads
  - Pad removal may cause unintended reduction/increase pain/injury
  - Sling + swathe

13

Post Reduction Management

Recurrent

- If full strength and normal ROM (self or aided reduction), can return to play same day
- Consideration of surgical referral or additional/repeat imaging depending on # of recurrences and with what activities with conservative management

1st time

- If reduced on-site, splint/sling and refer
  - Imaging (XR) and MD; possible MRI
- If not reduced, transport to ED or sports med clinic if able for imaging/possible sedation/MD reduction
  - If ED, refer to sports medicine physician for further eval and treatment planning
- Can begin conservative therapy and rehabilitation following MD appt

14

Follow-Up/Referral Guidelines

- Imaging:
  - Recurrent
    - Consideration of surgical referral depending on # of recurrences and with what activities
  - 1st time
    - If reduced on-site, splint/sling and refer
    - Imaging (XR), potential MRI/A
- Surgical Referral:
- Physician Referral:
  - 1st time dislocation – immediate
  - If recurrent injury and not met with orthopedic surgeon or symptoms/injury worsening with conservative management
    - Potential of new/increased damage to static or dynamic stabilizers

15

References

Rozzi SL, Anderson JM, Doberstein ST, Godek JJ, Hartsock LA, McFarland EG. National Athletic Trainers' Association Position Statement: Immediate Management of Appendicular Joint Dislocations. J Athl Train. 2018 Dec;53(12):1117-1128. doi: 10.4085/1062-6050-97-12. Epub 2019 Jan 4. PMID: 30609383; PMCID: PMC6365071.

Smith D, Hoogenboom B. Sideline management of acute dislocation of the glenohumeral joint- a unique approach to athlete self-reduction. Int J Sports Phys Ther. 2013 Feb;8(1):80-3. PMID: 23439949; PMCID: PMC3578437.

Shoulder dislocation and reduction – UpToDate

A systematic and technical guide on how to reduce a shoulder dislocation (nih.gov)

Pak T, Kim AM. Anterior Glenohumeral Joint Dislocation. [Updated 2023 May 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557862/

Wilk KE, Macrina LC, Reinold MM. Non-operative rehabilitation for traumatic and atraumatic glenohumeral instability. N Am J Sports Phys Ther. 2006 Feb;1(1):16-31. PMID: 21522197; PMCID: PMC2953282.

16