
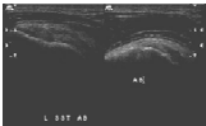

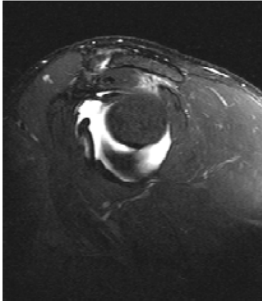


Weightlifter's Shoulder

- RCT
- Overhead and flexion
- Impingement






Thrower's Shoulder



34 y/o MLB pitcher with shoulder pain

Thrower's Shoulder

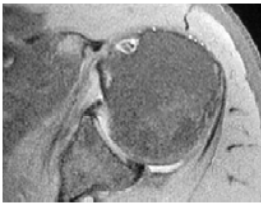


Posterolateral Impingement

- Of
 - Undersurface rotator cuff
- Between
 - Labrum
 - Humeral head
- With
 - Abduction
 - External rotation
- Causing
 - Labral tear
 - Undersurface RCT

Slot Machine Tendinitis

- Tenderness of the shoulder from playing slot machines.
- Tender over biceps in bicipital groove
- Rx – win early

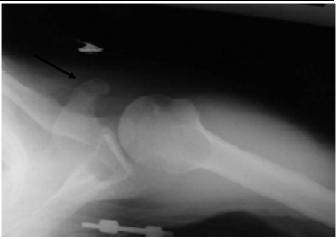


Tear of long head of biceps

N Engl J Med. 1981 May 28;304(22):1368.

Trap shooter's shoulder


- Stress fracture of coracoid
- Occ. Poor technique acute injury



Coracoid fracture 23F

Little Leaguer's Shoulder


- Overuse fatigue
- Proximal humeral physis
- "Salter Harris 1"
- Widened and irregular physis
- Compare with contra



Dotter WE. Little Leaguer's shoulder. Guthrie Clin Bull 1953; 23:68.

Little Leaguer's Shoulder






Right for comparison
Left handed pitcher

Torsional overload
 11-16 boys
 83% pitchers

Carson Jr. WG, Gasser SJ. Little leaguer's shoulder. A report of 23 cases. Am J Sports Med 1998;26:575

Blocker's Arm

- Blocker's or Tackler's Exostosis
- Anterolateral humerus
- Distal to shoulder pads
- Heterotopic ossification
- Myositis ossificans
- Periosteal damage
- Grows by accretion



Blocker's Arm


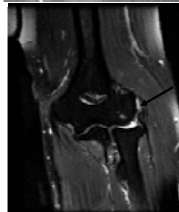
- Post traumatic myositis ossificans
 - 4/52 Faint peripheral Ca
 - Periosteal reaction
 - 8/52 Circumscribed cortex
 - Central lacy pattern
 - 5/12 Maturity
 - >6/12 Regression
 - Separate from bone
 - 1 year Usually disappears
 - Periosteal reaction remains

Blocker's Arm

- Sport related myositis ossificans
 - Single direct blow
 - Repeated minor trauma
 - Adductor longus-Rider's bone
 - Brachialis-Fencer's bone
 - Soleus-Dancer's bone
 - Blocker's arm

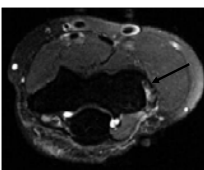

Tennis Elbow

- Coined in the 1880's
- 10-50% of players
- Backhand stroke
- Rare in double handers
- Lateral epicondylitis
 - (no itis)
 - Angiofibroblastic tendinosis
- Common extensor origin
 - ECRB tendinosis
 - ED communis also common

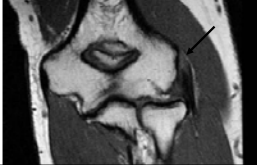

Tennis Elbow

- Risk factors
 - >30 years
 - Improper grip size
 - Metal racket
 - >2hrs per day
 - Tight strings
 - Snapping wrist backhand
- XS motion, vibration, string tension
- Fatigue

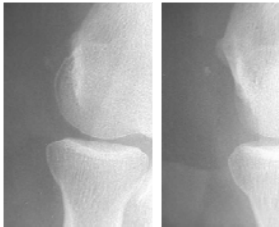

Tennis Elbow

- DDX
 - Radiohumeral osteochondral injury
 - Recurrent radial nerve entrapment
 - Supinator syndrome
 - Epicondylar apophysitis in adolescents
 - C6 root injury or stinger


Tennis Elbow

- Radiographic findings
 - STS
 - Calcification 20-30%

Hooker's Elbow

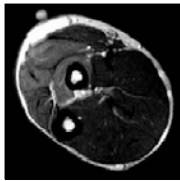
- Painful elbow swelling suffered by fishermen repeatedly jerking upwards on a fishing line.
- Lateral epicondylitis



N Engl J Med. 1981 Mar 19;304(12):737.

Resistant Tennis Elbow


- Radial collateral ligament rupture.
- Radial tunnel syndrome
 - Posterior interosseous branch of radial n.
 - Fibrous arch of supinator (Arcade of Frohse)
 - Distally through supinator



Radial neuritis

Medial Tennis Elbow

- Medial tennis elbow
 - Lateral:Medial 7:1
 - From acceleration during serving



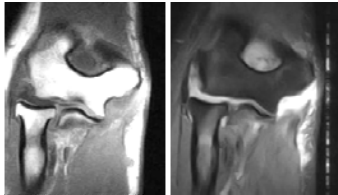
Medial Epicondylitis

- Baseball pitchers
 - Little league elbow
- Golfer's elbow
- Medial Tennis elbow
- Javelin, Racquetball, Squash, Swimmer's

- Epicondylitis 10X more common laterally
- Disruption more common medially

Medial Epicondylitis

- Tendon degeneration - Tendinosis
- Partial tear
- Tendon disruption
- Muscle strain



Disruption more common medially

Golf Elbow

- Medial epicondylitis
- Overuse of FCR / pronator muscle mass
- Valgus stress at top of back swing to point of impact
- Associated Ulnar neuropathy
- Medial laxity



Little Leaguer's Elbow

- Purists
 - 9-12Y
 - Throwers
 - Medial traction apophysitis / epicondylitis
 - Repetitive valgus stress
 - Hypertrophy of medial epicondyle
 - Microtearing of flexor / pronator group
 - Fragmentation of medial epicondylar apophysis



Little Leaguer's Elbow

- Panners disease
- 5-10Y Boys
- Osteochondrosis of the capitulum
- Trauma history
- Fissuring and increased density
- Decreased size, fragmentation, resorption



Dog Walker's Elbow

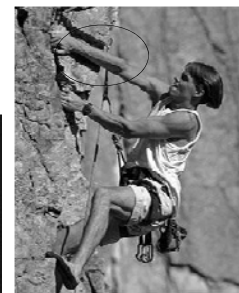
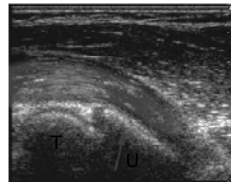
- Pain caused by constant tension and tugs from a dogleash.
- Medial or lateral epicondylitis depending on dog



N Engl J Med. 1981 Mar 5;304(10):613-4.

Climber's Elbow

- Brachialis tendinosis



Bollen S. BJSM 1988; 22:145-7

Gymnast's Wrist

- "Salter Harris 1"
- Repetitive strain
- Distal radial physis




Photo: OEG/Edwin Koppers

Intersection Syndrome Oarsmen's / Bugaboo wrist

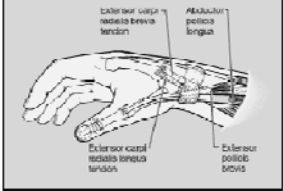
- Oarsmen's wrist
- Crossover syndrome
- Squeaker's wrist
- Bugaboo forearm
- Peritendinitis crepitans
- Subcutaneous perimyositis
- Abductor pollicis longus bursitis
- Abductor pollicis longus syndrome

Oarsmen's / Bugaboo wrist

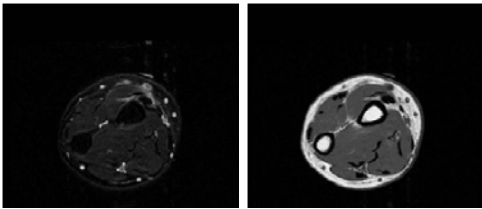
- Overuse syndrome of the distal forearm
- Heavy and repetitive use of the wrist and thumb
- Wringing, grasping, turning and twisting motions
- Secretaries, carpenters, maintenance, filing workers
- Athletes involved in weightlifting, rowing or canoeing
- Rice-harvesting workers in Thailand

Oarsmen's / Bugaboo wrist

- Inflammation at the intersection of the first dorsal extensor tendon compartment and second dorsal extensor compartment (DETC)
- Friction of the muscle bellies of the 1st DETC with the tendon sheath of the 2nd DETC
- Entrapment from stenosis of the 2nd DETC



Oarsmen's / Bugaboo wrist

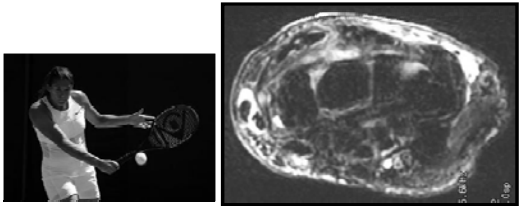


Ax T2FS Ax T1

9 39yo male with knot over left forearm with grinding and popping


Tennis Wrist

- Tenosynovitis (Tenovaginitis) of the tendons of the wrist in tennis players.



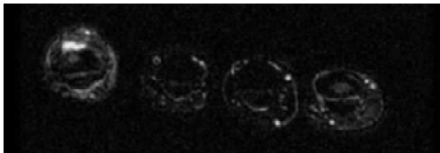
Racket Player's Pisiform

- Repetitive strain on Pisiform.



Boxer's Knuckle

- Longitudinal tear of ED communis at MC heads
- 3rd MCPJ



Radiology 2003;228:642-646.

Boxer Knuckle


- Damage to the sagittal bands of the extensor hood.
- At MCP - extensor tendon stabilized over dorsum of metacarpal head by the extensor hood.
- Sagittal bands
 - Transversely oriented ligaments, main component of the extensor hood.
 - Start at the volar plate and has a dorsal tendinous point of insertion
 - Glides with the extensor mechanism as the digit moves.
 - Stabilize the extensor hood during joint motion

Boxer Knuckle

- S & Sx
 - Pain, swelling, loss of full joint extension
 - Ulnar or radial subluxation of the extensor tendon
 - Subluxation most reliably detected at palpation of flexed joint (difficult with marked swelling).

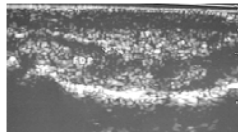
Boxer's Fracture

- Saturday night Fx
- 5th MC neck Fx
- Watch for associated base of 4th MC Fx





Rugger Jersey finger

- Avulsion of FDP
- Jersey grabbing tackle
- Ring > Middle

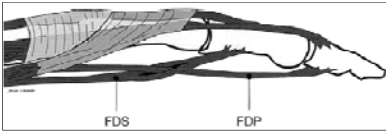



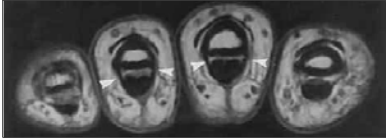
Climber's Finger

- Partial or complete rupture of A2 pulley
- Crimp or pocket grip
- 2nd or 3rd digit
- May extend to A3 and A4 pulleys
- Localized fluid
- Increased distance between tendon and phalanx

Climber's Finger



From: Clavero JA et al. MR imaging of ligament and tendon injuries of the fingers. Radiographics 2002 Mar-Apr; 22(2):237-256

Wellie Thrower's Finger



- Injury to finger joints sustained in wellie throwing contests.
- Volar plate Fx




Br Med J (Clin Res Ed). 1986 Dec 20;27:293(6562):1645.

Baseball Finger



- Mallet finger
- Ball or other object striking the end or back of the finger
- Resulting in rupture of the attachment of the extensor tendon.
- Bony or tendon

Ann Emerg Med. 1981 Jun;10(6):302-6.


Skier's Thumb

- AKA Gamekeeper's thumb
- Thumb abduction
- MCP-UCL proper sprain/tear
- Accessory UCL, volar plate and dorsal capsule add stability
- X-ray prior to stress
- Stress in 20-30 degrees of flexion
- 10-20 degrees laxity worse than contra
- 30-35 degrees of absolute laxity

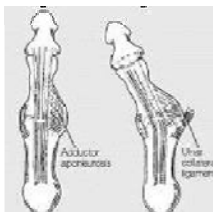

Skier's Thumb

- Stener lesion
- Adductor aponeurosis interposed
- >2-4 mm displaced avulsion
- MRI or US to see
- Need operative repair




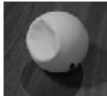
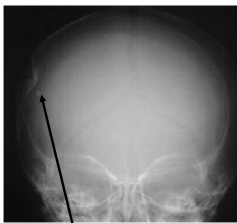
Skier's Thumb Stener lesion

- Entrapment of adductor aponeurosis


Ping Pong Fracture

- Depressed skull fracture usually seen in young children, resembling the indentation that can be produced with the finger in a ping-pong ball; when elevated it resumes and retains its normal position.



Boxer's Jaw

- Who caused this?
 - Ken Norton
- What year?
 - 1973
- What town?
 - San Diego
- Which round?
 - 1st
- Who won?
 - Norton in 12th



Spear Tackler's Spine

- Vertical compression
- Axial loading with mild flexion
- >50% of quadriplegia in AF
- Defensive backs




Brigham CD, JBJS 2003;85-A(2):381-2

Spear Tackler's Spine

- A clinical entity that constitutes an absolute contraindication to participation in tackle football and other collision activities that expose the cervical spine to axial energy inputs.
- 1) developmental narrowing (stenosis) of the cervical canal
- 2) persistent straightening or reversal of the normal cervical lordotic curve on erect lateral roentgenograms obtained in the neutral position
- 3) concomitant preexisting posttraumatic roentgenographic abnormalities of the cervical spine
- 4) documentation of having employed spear tackling techniques


Rebounder's rib

- 1st rib Fx
- Muscular exertion
- Scalenes pull up
- Intercostals pull down


Poker back - Poker spine

- Not related to the game of poker
- Rather a stiff fire-poker
- Sign of ankylosing spondylitis



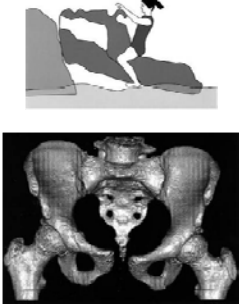
Rugger Jersey Spine

- Renal osteodystrophy
- Osteomalacia
- Secondary hyperparathyroidism



Jet Ski Open Book Pelvic Fracture


- Striking the steering column during rapid deceleration



Emergency Radiology May 03

Sprinter's Fracture


- Fracture of the anterior superior or inferior spine of the ilium
- Fragment of the bone being pulled off by muscular violence, as at the start of a sprint.



Br J Sports Med. 1977 Jun;11(2):65-71.


Hurdler's Fracture

- Ischial tuberosity avulsion
- Forced flexion from hyperextension
- Also common in soccer, water skiing




Rider's Leg

- Strain of the adductor muscles of the thigh in horseback riders.




Horse Rider's Bone

- AKA Cavalry bone
- Localized ossification of the inner aspect of the lower end of the tendon of the adductor muscle of the thigh (adductor tubercle).



Quick-Draw Leg


- Bullet wound in leg from practicing fast draw from gun in belt holster



JAMA, 1966

Cricket Thigh

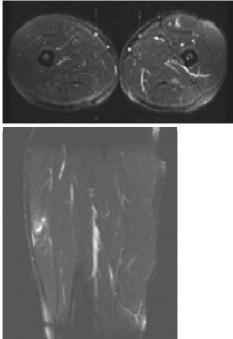
- Rupture of some of the fibers of the rectus femoris, which may occur in playing cricket or football.
- Sometimes the tendon of the quadriceps or that of the patella is also ruptured.



Sir Richard Hadley

Rectus Femoris Strain

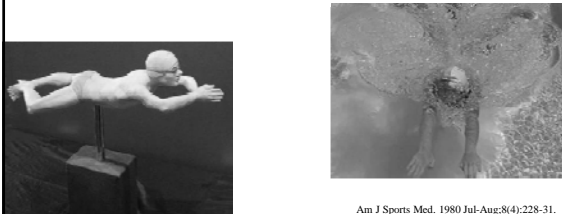
- Grade 1
 - Few fibers torn
 - No loss of function
 - Feathery fluid signal
- Grade 2
 - Some loss of strength
 - Focal mass
 - Partial tear of myotendinous junction
- Grade 3
 - Complete rupture
 - Loss of function
 - Retraction



19M

Breaststroker's Knee

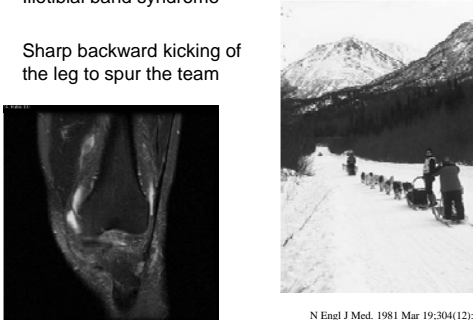
- Valgus strain in whip kick
- MCL stress
- PF dysfunction
- Medial synovial plica syndrome



Am J Sports Med. 1980 Jul-Aug;8(4):228-31.

Musher's Knee

- Iliotibial band syndrome
- Sharp backward kicking of the leg to spur the team



N Engl J Med. 1981 Mar 19;304(12):737.

ITBFS

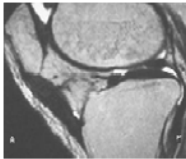

- Intense activity leads to abnormal contact between the ITB and the LFC.
- Findings include edema superficial or deep to the ITB, joint effusion, fluid collection deep to the ITB or thickening of the ITB.
- Fluid is likely within an adventitious bursa.

Football Knee

- "A swollen, relaxed, somewhat tender condition of the knee seen in football players"
- Patellar tendinosis
- AKA jumper's knee
- An insertional tendinopathy
- patellar tendon into the patella (65%)
- attachment of the quadriceps tendon to the patella (25%)
- attachment of the patellar tendon to the tibial tuberosity (10%).

Jumper's Knee



- Patellar tendinosis
- Pain and tenderness over the lower pole of the patella
- Similar to that occurring in Sindig-Larsen-Johansson disease, without radiographic changes
- So called because of its occurrence in athletes

Sports Med. 1986 Jul-Aug;3(4):289-95.

Rugby Knee

- Osgood-Schlatter disease

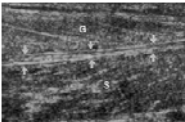
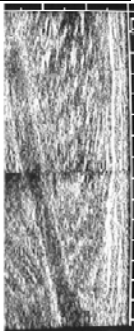
Genu Amoris Lover's knee

- Swelling and pain in the knee from making love in an unusual position.

Arthritis Rheum. 1976 May-Jun;19(3):637-8.

Tennis Leg

- Previously plantaris tendon rupture
- Medial head of gastrocnemius sudden rupture at MTJ
- Forced dorsiflexion
- Older persons participating in tennis and other sports.

Radiology. 2002 Jul;224(1):112-9.


Toddler's Fracture

- Spiral fracture of distal tibia
- Often occult
- Can be due to NAI
- Often subtle requiring scintigraphy

Radiographics. 1997 Mar-Apr;17(2):367-76.


Paratrooper Fracture

- Fracture of the posterior articular margin of the tibia and/or of the internal or external malleolus.




Paratrooper Fracture

- Fracture of the posterior articular margin of the tibia and / or of the internal or external malleolus.



Snowboarder's Ankle Snowboarder's Fracture


- Lateral process of talus Fx
- Dorsiflexion and hindfoot inversion
- Unrecognized causes subtalar OA
- CT may be required to see and classify
 - Type 1. Chip off anterior inferior
 - Type 2a. Involves talofibular joint
 - Type 2b. Involves talocalcaneal joint
 - Type 3. Comminuted Fx



J Am Board Fam Pract. 1994 Mar-Apr;7(2):130-3

Aviator's Astragalus


- Forefoot hyperextension
- Rudder bar into instep
- Tight achilles
- Fracture of talar neck
- +/-
 - Anterior tibia injury
 - Subtalar dislocation
 - Posterior talar body dislocation



With posterior subtalar dislocation

Aviator's Astragalus

- Forefoot hyperextension
- Rudder bar into instep
- Tight achilles
- Fracture of talar neck
- +/-
 - Anterior tibia injury
 - Subtalar dislocation
 - Posterior talar body dislocation



Dancer's Tendinitis

- FHL
- Within fibro-osseous tunnel
- Ass. Trigger toe
- Can go on to rupture



J Foot Ankle Surg. 1998 Mar-Apr;37(2):101-9.

Dancer's Heel

- Posterior ankle impingement
- Medial and lateral tubercles on posterior talus
- FHL between them
- Lateral tubercle non-union = os trigonum 10%
- Bilateral 50%
- Plantar-flexion or en point
- Large posterior (Stieda) process or os trigonum
- Causes fibrosis
- Posterolateral pain



Basketball Foot

- Inversion and varus stress on landing
- Medial subtalar dislocation
- Talocalcaneal and talonavicular



March Fracture

- Metatarsal stress fracture
- Also seen in Ballet
- Middle and distal shafts 2nd and 3rd
- Periostitis
- 1st base, less periostitis

