

Easily Missed Fractures of the Ankle & Foot

Easily Missed Fractures

Foot & Ankle

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Easily Missed Fractures

Search for on **EVERY Ankle** view:

- 1) MM & LM (Weber)
- 2) OLT (OCD)
- 3) 5th MT (Jones, Avulsion)
- 4) LPT

Search for on **EVERY Foot** view:

- 5) APC
- 6) MT
- 7) Lisfranc

Previous Talk

This Talk

but first...

Anatomy: Tarsal Bones & Joints

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Anatomy: Tarsal Bones & Joints

Talus

- Latin: "Ankle"
- Center of Ankle Joint

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Anatomy: Tarsal Bones & Joints

Talus

Dome

Body

Head

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Anatomy: Tarsal Bones & Joints

Ankle Joint

Dome

pla-fond \plà-fõn\ n [fr. *plat* flat + *fond* bottom] ceiling formed by the underside of a floor

Webster's New Collegiate Dictionary

Plafond

Mortise

©Ken L Schreibman, PhD/MD 2008 schreibman.info

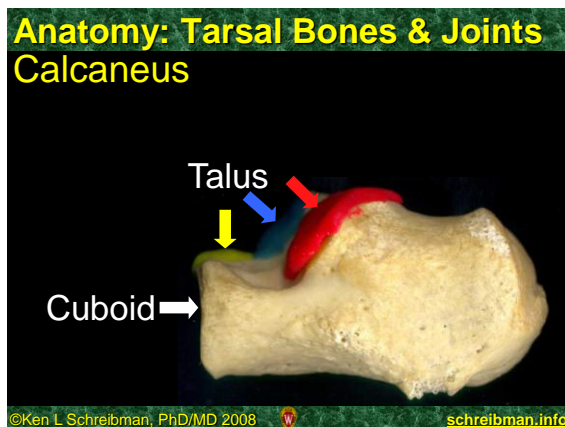
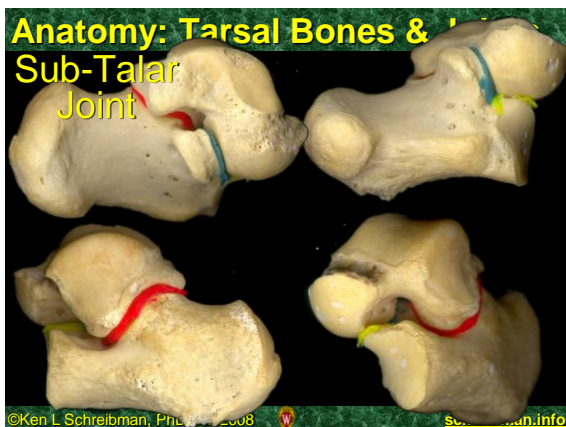
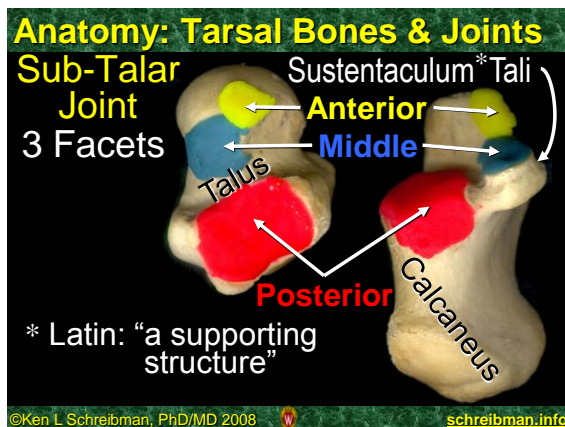
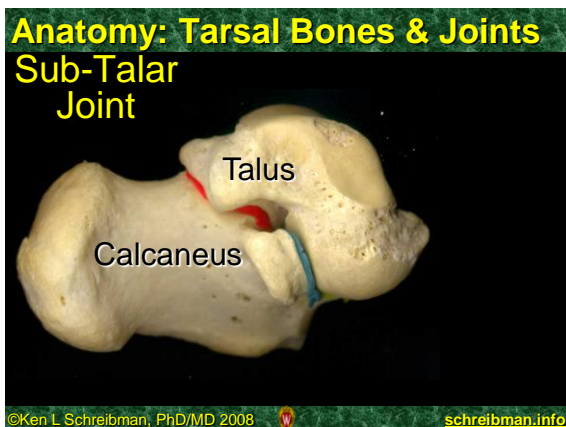
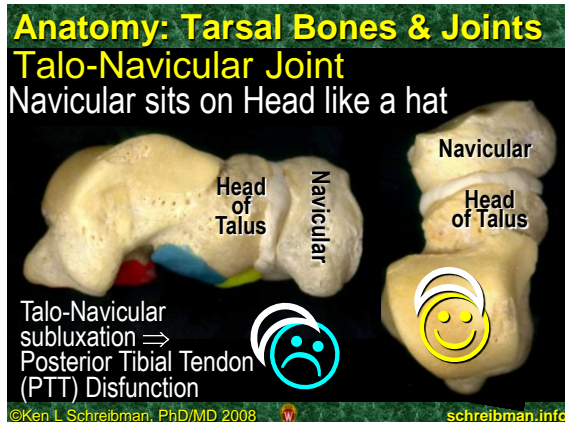
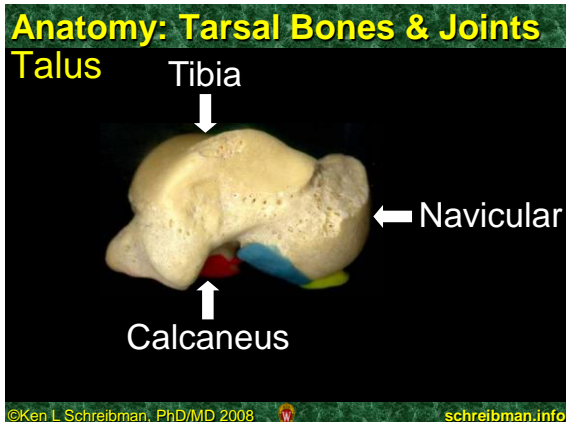
Mortise: Woodworking Term

MORTISE

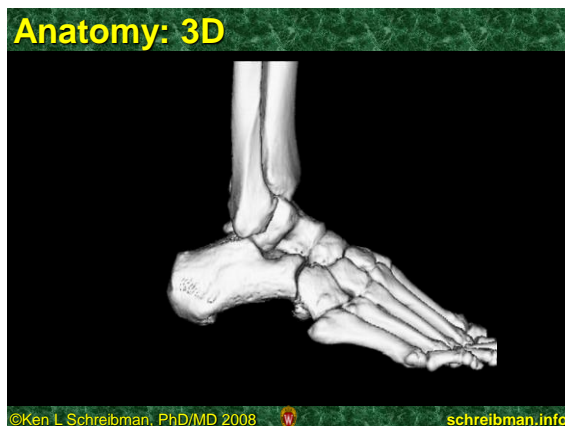
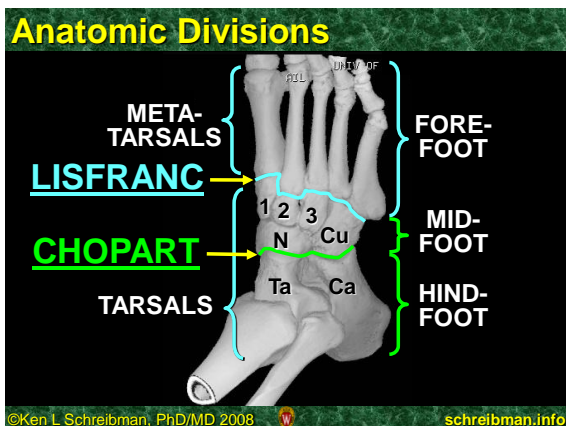
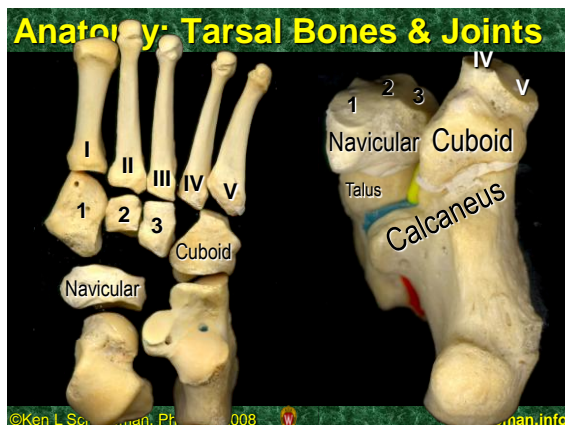
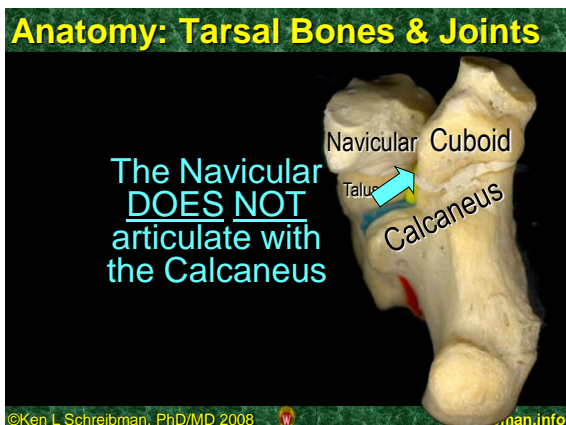
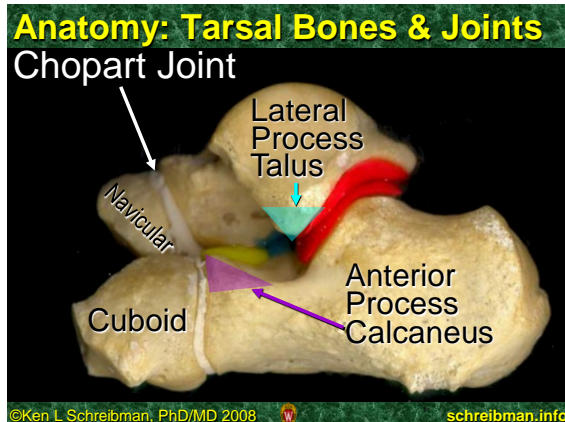
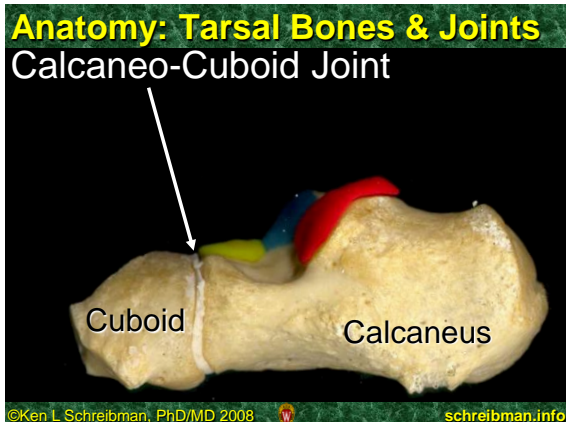
TENON

©Ken L Schreibman, PhD/MD 2008 schreibman.info

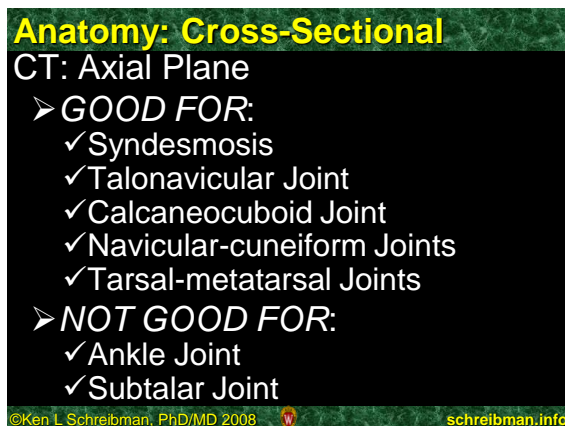
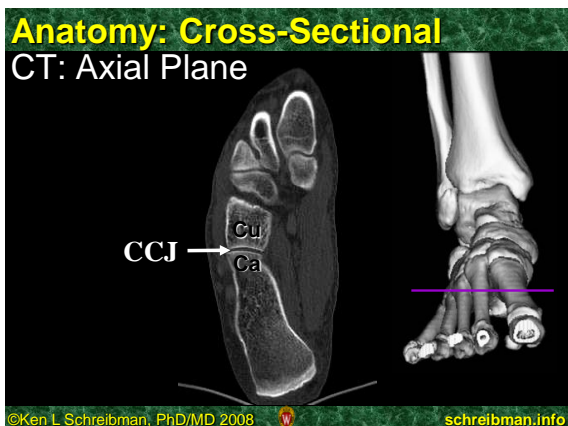
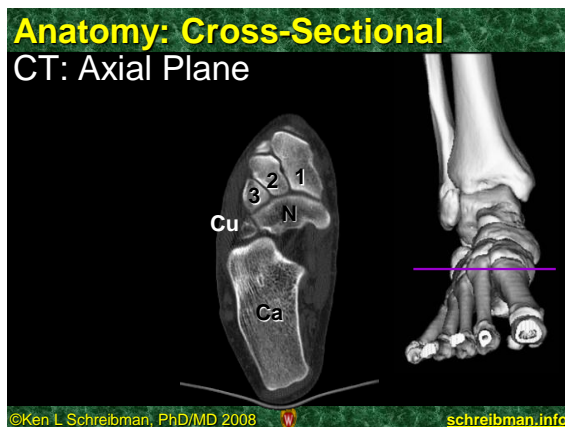
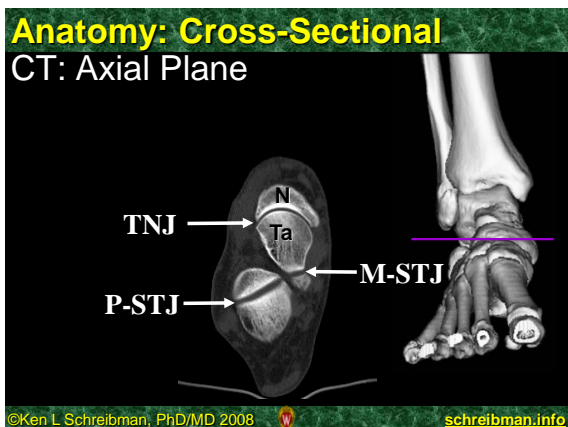
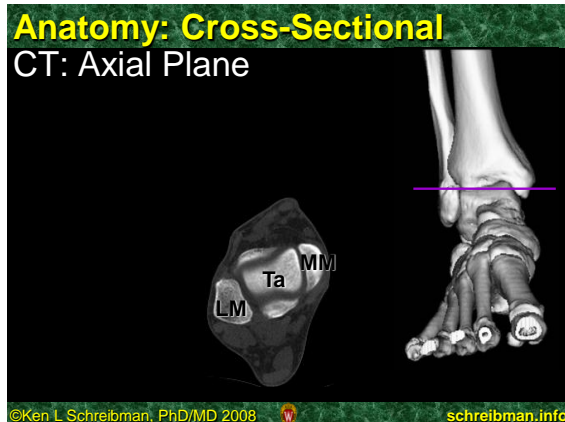
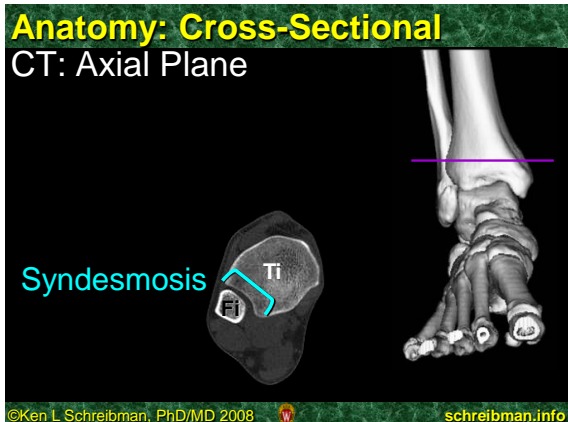
Easily Missed Fractures of the Ankle & Foot



Easily Missed Fractures of the Ankle & Foot



Easily Missed Fractures of the Ankle & Foot



Easily Missed Fractures of the Ankle & Foot

Anatomy: Cross-Sectional
 CT: Sagittal Plane
 ➤ Reformatted off Axial reference image

Medial Slice

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Anatomy: Cross-Sectional
 CT: Sagittal Plane
 ➤ Reformatted off Axial reference image

Middle Slice

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Anatomy: Cross-Sectional
 CT: Sagittal Plane
 ➤ Reformatted off Axial reference image

Lateral Slice

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Anatomy: Cross-Sectional
 CT: Sagittal Plane
 ➤ **SECONDARY PLANE FOR:**

- ✓ Ankle Joint
- ✓ Sub-Talar Joint
- ✓ Talo-Navicular Joint
- ✓ Calcaneo-Cuboid Joint
- ✓ Navicular-Cuneiform Joints
- ✓ Tarsal-Metatarsal Joints

➤ **NOT GOOD FOR:**

- ✓ Syndesmosis

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Anatomy: Cross-Sectional
 CT: Coronal Plane (2 schemes)

1) Mortise Coronal: Reformatted off Axial

- Aligned between Malleoli
- **GOOD FOR:**
 - ✓ Distal Tibial Fractures
 - ❖ Malleoli
 - ❖ Tillaux, Triplane
 - ❖ Pilon
 - ✓ Talar Dome Fxs (OLT)

(Mortise Sagittal, perpendicular to this)

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Anatomy: Cross-Sectional
 CT: Coronal Plane (2 schemes)

2) Oblique Coronal: Reformat off Sagittal

- Perpendicular to P-STJ
- **GOOD FOR:**
 - ✓ Hindfoot Fxs
 - ❖ Sub-Talar Joint
 - ❖ Talus
 - ❖ Calcaneus
 - ✓ Tarsal Coalitions

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Easily Missed Fractures of the Ankle & Foot

UW 2-Page CT Protocol Sheets

SCANNING TECHNIQUE

Anatomy: Cross-Sectional

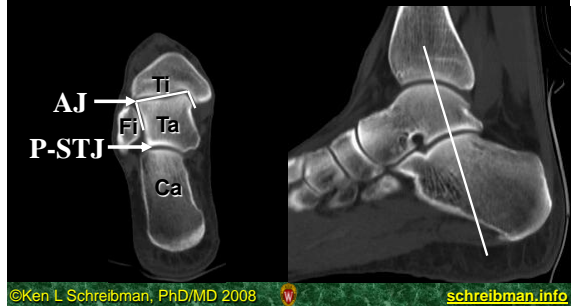
CT: Oblique Coronal Plane

Sagittal ref image perpendicular to P-STJ

©Ken L Schreibman, PhD/MD 2008 www.radiology.wisc.edu

Anatomy: Cross-Sectional

CT: Oblique Coronal Plane
 ➤ Sagittal ref image perpendicular to P-STJ



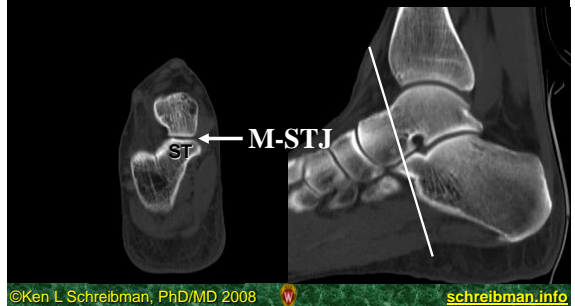
Anatomy: Cross-Sectional

CT: Oblique Coronal Plane
 ➤ Sagittal ref image perpendicular to P-STJ



Anatomy: Cross-Sectional

CT: Oblique Coronal Plane
 ➤ Sagittal ref image perpendicular to P-STJ



Anatomy: Cross-Sectional

CT: Oblique Coronal Plane
 ➤ Sagittal ref image perpendicular to P-STJ



Anatomy: Cross-Sectional

CT: Oblique Coronal Plane

- **GOOD FOR:**
 - ✓ Sub-Talar Joint
 - ✓ Ankle Joint
- **NOT GOOD FOR:**
 - ✓ Talo-Navicular Joint
 - ✓ Calcaneo-Cuboid Joint
 - ✓ Navicular-Cuneiform Joints
 - ✓ Tarsal-Metatarsal Joints

Easily Missed Fractures of the Ankle & Foot

Easily Missed Fractures

Search for on **EVERY** Ankle view:

- 1) MM & LM (Weber, Adolescent)
- 2) OLT (OCD)
- 3) 5th MT (Jones & Avulsion)
- 4) LPT

©Ken L Schreibman, PhD/MD 2008

schreibman.info

Lateral Process Talus



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Lateral Process Talus Fracture

17 yo F gymnast,
landed wrong
after vault

Lateral View



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Lateral Process Talus Fracture

29 yo F,
s/p MVA

Lateral View



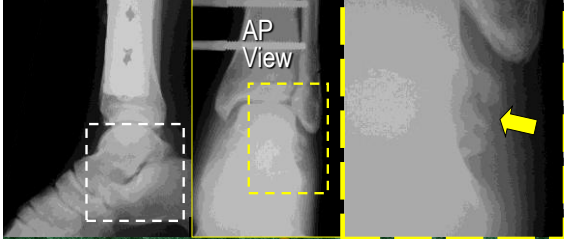
©Ken L Schreibman, PhD/MD 2008

schreibman.info

Lateral Process Talus Fracture

40 yo M, s/p
motorcycle
accident

Lateral View



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Lateral Process Talus Fracture

24 yo M, construction
worker fell 15 feet

Lateral View



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Easily Missed Fractures of the Ankle & Foot

ORTHOPEDICS

JANUARY 2000 VOL 23 NO 1

Trauma Update

Fracture of the Lateral Process of the Talus

Michael W. Cantrell, MD
Thom A. Tarquinio, MD

Fracture of the lateral process of the talus is a common, yet frequently missed, injury. It is the second most common fracture of the talar body, accounting for 24% of these injuries, yet it has been documented that 40% of fractures of the lateral process of the talus are missed at initial presentation.

with other talar or foot injuries, and are missed more frequently when they occur as an isolated injury. In this situation, the fracture can almost be clinically indistinguishable from a lateral ankle sprain. Therefore, fracture of the lateral process of the talus must be suspected in

weightbearing through the fibula, lateral stability of the ankle, and subtalar motion.³ Fractures of the lateral process of the talus hinder these functions. They are intra-articular in nature, involving the subtalar joint more often and to a greater extent, than the talofibular joint.^{1,2,4,5,15}

with subtalar dislocation, fractures of the talar neck, adduction type medial malleolar fractures, and complete rupture of the lateral ankle ligament complex (or avulsion of the distal fibula). Other postulated mechanisms of injury are high-energy trauma (associated with other foot injuries),¹ as well as the rare direct blow to a lateral process.²

Common scenarios leading to fracture of the lateral process of the talus are a fall, a motor vehicle collision, or stepping into a hole.⁴ This fracture is remarkably common among snowboarders, whose feet are acutely dorsiflexed and inverted upon landing from various maneuvers.¹⁸ In addition, stress fracture of the lateral process of the talus has been reported in a runner and a tennis player.^{11,17,19}



© 1998 American Orthopaedic Society

© 1998 American Orthopaedic Society

Fractures of the Lateral Process of the Talus: A Case Review: "Snowboarder's Ankle"

The Snowboarder's Foot and Ankle*

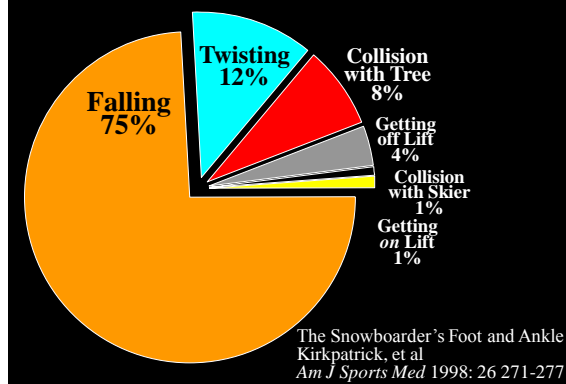
Douglas P. Kirkpatrick, MD, Robert E. Hyatt, BS, MD, Peter C. Jansen, MD, Jackie Mistrangelo, MD, MPA, FN, and Richard A. Nicholas, MD

From Health Country Orthopaedic Surgery and Sports Medicine, Quantary, New York; Orthopaedic Associates of Alton and Glenside, Alton, High Country Health Care, Summit/Vail Orthopaedics and Sports Medicine, Frisco, and Department of Family Medicine, University of Colorado Health Sciences Center, Denver, Colorado

Abstract: This is a review article discussing the incidence, etiology, investigation, and management of the lateral process of the talus, an articular fracture of the ankle region. The authors review the epidemiology, pathogenesis, and management of these fractures, and discuss the importance of the lateral process of the talus in the ankle. The authors also discuss the importance of the lateral process of the talus in the ankle. The authors also discuss the importance of the lateral process of the talus in the ankle.

Abstract: We undertook a retrospective study to determine the type and distribution of foot and ankle snowboarding injuries. Eighty of 107 snowboarders injured were included from 11 Colorado ski resorts between 1998 and 1999. Of these, 60% were male, 40% were female, and 58 (57%) were foot injuries. Ankle sprains accounted for 29% of the total injuries, and 18 (18%) were lateral process of the talus fractures. There was no significant correlation between foot type (high-top, or low-top) and overall foot or ankle injury rate. There were significantly fewer ankle sprains in patients wearing high-top and lower frequency of lateral process of the talus in patients wearing high-top boots. An anteroposterior high-torque fracture of the lateral process of the talus were noted. These 16 fractures represented 27% of all snowboarding injuries. 13% of all ankle sprains, and 24% of the ankle ligament injuries. Eighty of 107 snowboarders injured were included from 11 Colorado ski resorts between 1998 and 1999. Of these, 60% were male, 40% were female, and 58 (57%) were foot injuries. Ankle sprains accounted for 29% of the total injuries, and 18 (18%) were lateral process of the talus fractures. There was no significant correlation between foot type (high-top, or low-top) and overall foot or ankle injury rate. There were significantly fewer ankle sprains in patients wearing high-top and lower frequency of lateral process of the talus in patients wearing high-top boots. An anteroposterior high-torque fracture of the lateral process of the talus were noted. These 16 fractures represented 27% of all snowboarding injuries. 13% of all ankle sprains, and 24% of the ankle ligament injuries.

Mechanism of foot/ankle injuries related to snowboarding



Snowboarding is a relatively new and exciting alpine sport in which participants use a board riding technique that demands inversion, eversion, and rotation. The board is attached to the feet by plastic boots, and these utilize modern construction techniques to create a rigid, supportive structure. Initial rates of increased injury rates in snowboarders have been estimated by a number of well-performed epidemiological studies to be approximately 10% to 12% of all alpine skiing (1.2% to 9.2%). The operational distribution of injury in snowboarding demonstrates that the ankle and foot region is disproportionately represented as injury.

With almost one quarter of the region, compared with joint knee (16% to 22%), the ankle and foot region is disproportionately represented as injury in snowboarding. The ankle and foot region is disproportionately represented as injury in snowboarding. The ankle and foot region is disproportionately represented as injury in snowboarding. The ankle and foot region is disproportionately represented as injury in snowboarding.

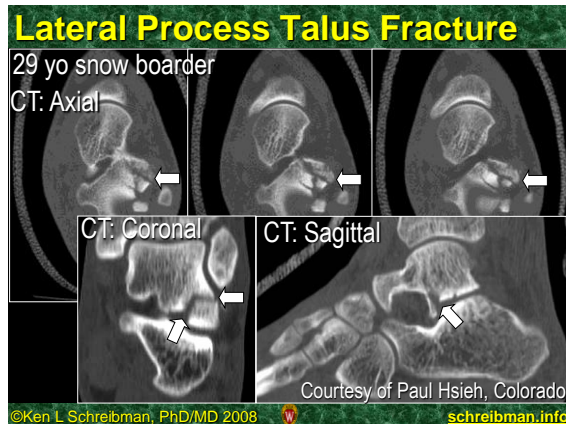
Ankle Injuries

- 5-6% of all alpine skiing injuries
- 12-38% of all snowboarding injuries

LPT Fractures

- 15% of snowboarding ankle injuries
- 2% of all snowboarding injuries

The Snowboarder's Foot and Ankle Kirkpatrick, et al
Am J Sports Med 1998; 26: 271-277



Easily Missed Fractures of the Ankle & Foot

Easily Missed Fractures

Search for on **EVERY Ankle** view:

- 1) MM & LM (Weber)
- 2) OLT (OCD)
- 3) 5th MT (Jones, Avulsion)
- 4) LPT

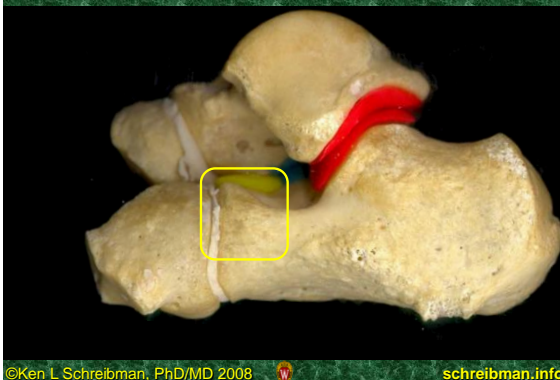
Search for on **EVERY Foot** view:

- 5) APC

©Ken L Schreibman, PhD/MD 2008

schreibman.info

Anterior Process Calcaneus



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Anterior Process Calcaneus Fx



©Ken L Schreibman, PhD/MD 2008

schreibman.info

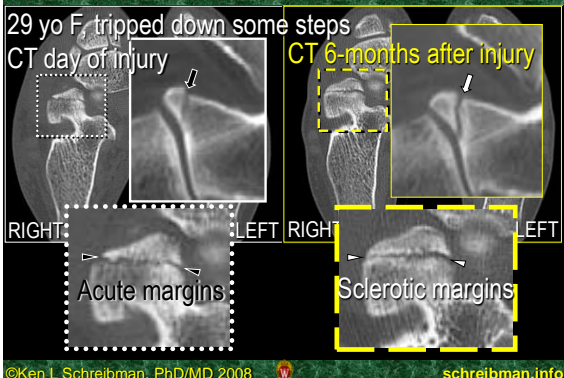
APC Fx: Search for on every foot view



©Ken L Schreibman, PhD/MD 2008

schreibman.info

APC Fx: Best seen on CT



©Ken L Schreibman, PhD/MD 2008

schreibman.info

APC Fx: May require fixation



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Easily Missed Fractures of the Ankle & Foot

Elongated APC: "Anteater sign"

Unlike the normal triangular APC. Elongated APC has blunt tip like an anteater's snout.

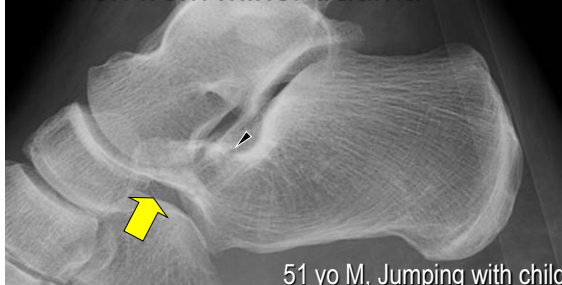


©Ken L Schreibman, PhD/MD 2008

schreibman.info

Elongated APC: "Anteater sign"

1) More easily fractured Even from minor trauma



51 yo M, Jumping with child

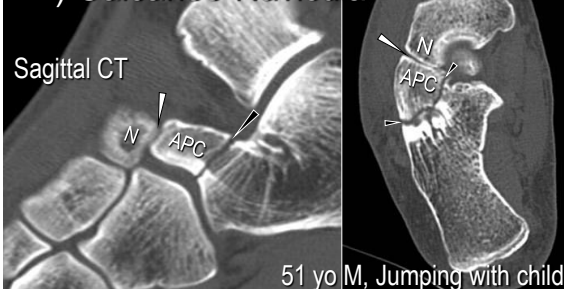
©Ken L Schreibman, PhD/MD 2008

schreibman.info

Elongated APC: "Anteater sign"

2) Tarsal Coalition

i) Calcaneo-Navicular



51 yo M, Jumping with child

©Ken L Schreibman, PhD/MD 2008

schreibman.info

Tarsal Coalitions

Cause of foot pain in adolescent "Rigid (peroneal) flat foot"

Abnormal hindfoot biomechanics => "Talar Beak", seen on lateral



12 yo M

©Ken L Schreibman, PhD/MD 2008

schreibman.info

Tarsal Coalitions

Occur at 2 sites

i) Calcaneo-Navicular Can be seen on oblique view



12 yo M

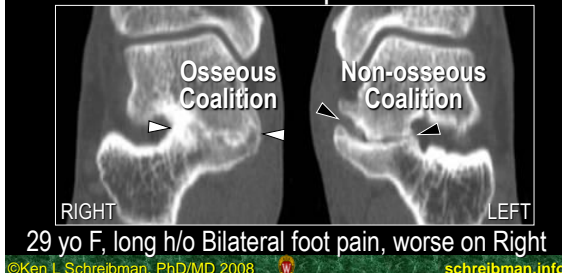
©Ken L Schreibman, PhD/MD 2008

schreibman.info

Tarsal Coalitions

Occur at 2 sites

ii) Middle Facet Sub-Talar Joint Best seen on Oblique Coronal CT



29 yo F, long h/o Bilateral foot pain, worse on Right

©Ken L Schreibman, PhD/MD 2008

schreibman.info

Easily Missed Fractures of the Ankle & Foot

APC: Fx vs Os Calcaneus Secundarius

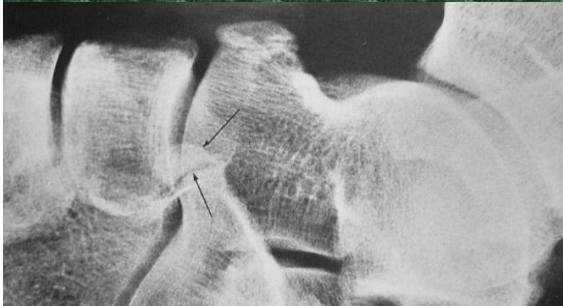


FIG 7-403.—The calcaneus secundarius should not be mistaken for a fracture of the anterior process of the calcaneus.

©Ken L Schreibman, PhD/MD 2008 [schreibman.info](http://www.schreibman.info)

APC: Fx vs Os Calcaneus Secundarius



©Ken L Schreibman, PhD/MD 2008 [schreibman.info](http://www.schreibman.info)

APC: Fx vs Os Calcaneus Secundarius



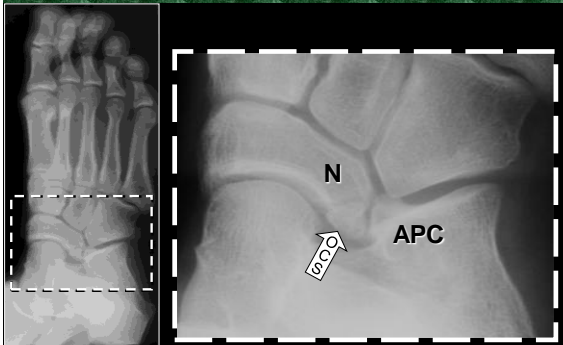
©Ken L Schreibman, PhD/MD 2008 [schreibman.info](http://www.schreibman.info)

APC: Fx vs Os Calcaneus Secundarius



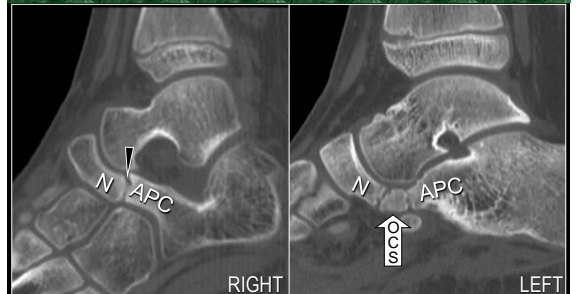
©Ken L Schreibman, PhD/MD 2008 [schreibman.info](http://www.schreibman.info)

APC: Fx vs Os Calcaneus Secundarius



©Ken L Schreibman, PhD/MD 2008 [schreibman.info](http://www.schreibman.info)

APC: Fx vs Os Calcaneus Secundarius



11 yo F with R foot pain

©Ken L Schreibman, PhD/MD 2008 [schreibman.info](http://www.schreibman.info)

Easily Missed Fractures of the Ankle & Foot

Easily Missed Fractures

Search for on **EVERY Ankle** view:

- 1) MM & LM (Weber, Adolescent)
- 2) OLT (OCD)
- 3) 5th MT (Jones & Avulsion)
- 4) LPT

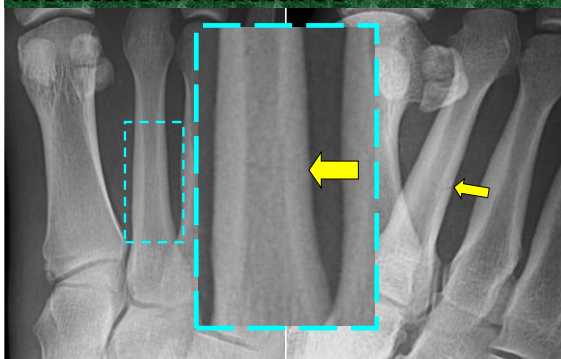
Search for on **EVERY Foot** view:

- 5) APC
- 6) MT

©Ken L Schreibman, PhD/MD 2008

schreibman.info

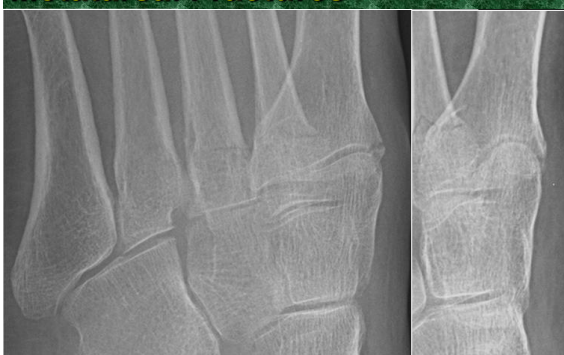
Metatarsal Fractures



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Metatarsal Fractures



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Metatarsal Fractures

CAN BE VERY SUBTLE

- Need AP & Oblique Views
- Magnification Helps

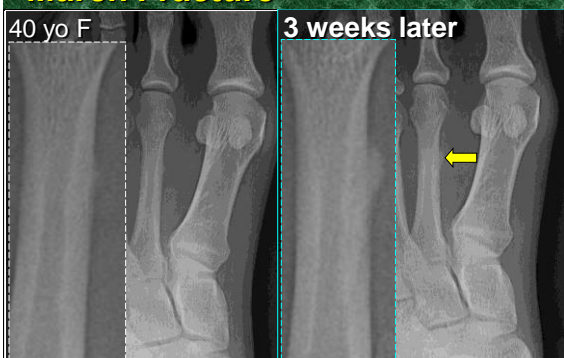
FATIGUE FRACTURES ARE COMMON

- "March Fracture"
- 2nd/3rd/4th MTs
- Look Closely for Periosteal Reaction
- Suggest Follow-Up Radiographs

©Ken L Schreibman, PhD/MD 2008

schreibman.info

"March Fracture"



©Ken L Schreibman, PhD/MD 2008

schreibman.info

"March Fracture"



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Easily Missed Fractures of the Ankle & Foot

Metatarsal Fractures

CAN BE VERY SUBTLE

- Need AP & Oblique Views
- Magnification Helps

FATIGUE FRACTURES ARE COMMON

- "March Fracture"
- 2nd/3rd/4th MTs
- Look Closely for Periosteal Reaction
- Suggest Follow-Up Radiographs

CHRONIC PAIN w/NEG RADIOGRAPHS...

- ...MRI

©Ken L Schreibman, PhD/MD 2008

schreibman.info

Metatarsal Fractures - Occult

14 yo M



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Metatarsal Fractures - Occult

14 yo M

6 weeks later

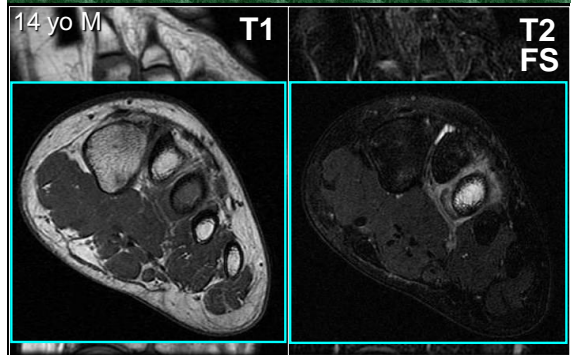


©Ken L Schreibman, PhD/MD 2008

schreibman.info

Metatarsal Fractures - Occult

14 yo M



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Metatarsal Stress Fracture

22 yo F, pain during 1 week vacation wearing sandals



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Metatarsal Stress Fracture

22 yo F, pain during 1 week vacation wearing sandals

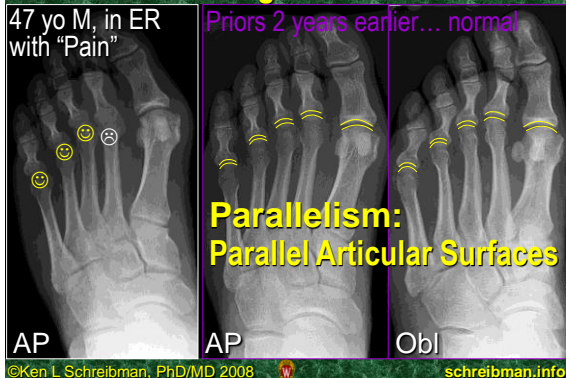


©Ken L Schreibman, PhD/MD 2008

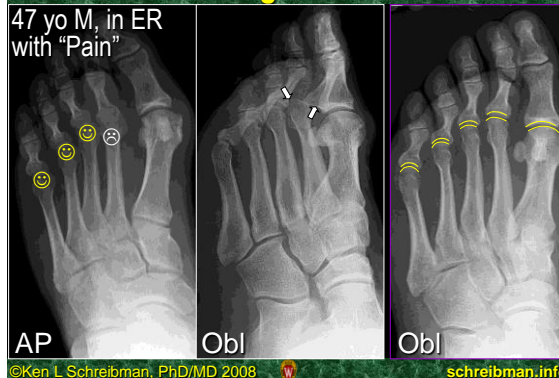
schreibman.info

Easily Missed Fractures of the Ankle & Foot

Metatarsal-Phalangeal Joint Dislocation



Metatarsal-Phalangeal Joint Dislocation



Easily Missed Fractures

Search for on **EVERY** Ankle view:

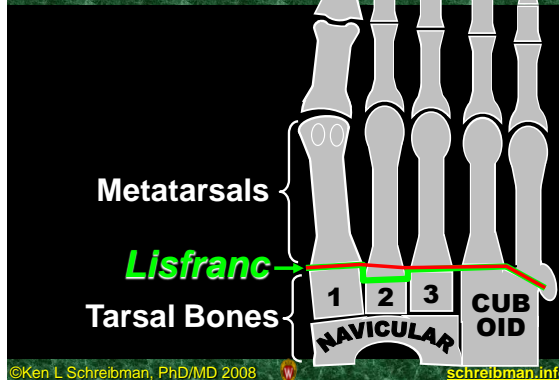
- 1) MM & LM (Weber, Adolescent)
- 2) OLT (OCD)
- 3) 5th MT (Jones & Avulsion)
- 4) LPT

Search for on **EVERY** Foot view:

- 5) APC
- 6) MT
- 7) Lisfranc

©Ken L Schreibman, PhD/MD 2008 schreibman.info

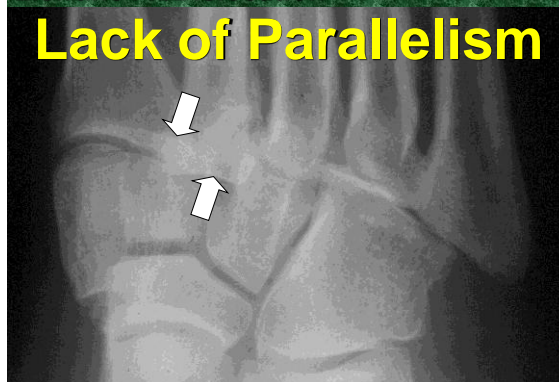
Lisfranc Fx/Dislocation



Lisfranc Fx/Dislocation

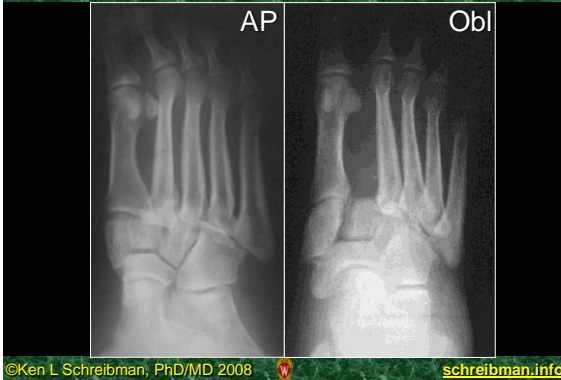


Lisfranc Fx/Dislocation

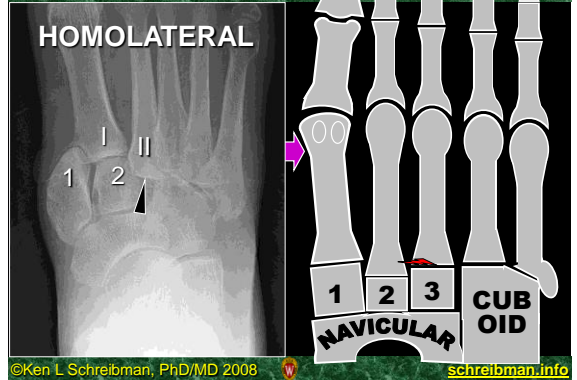


Easily Missed Fractures of the Ankle & Foot

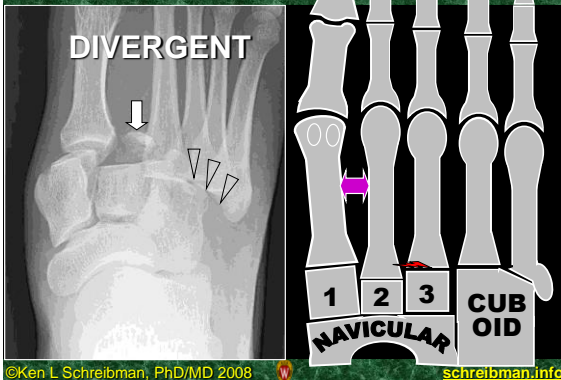
Lisfranc Fx/Dislocation



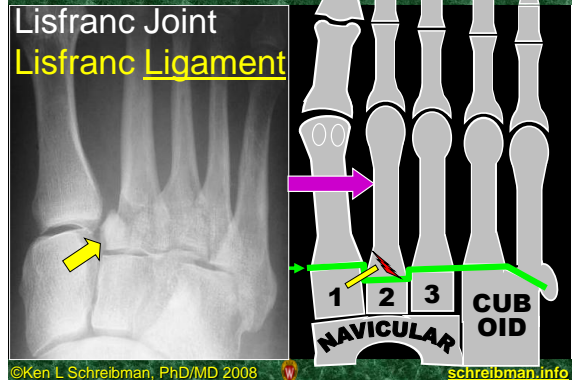
Lisfranc Fx/Dislocation



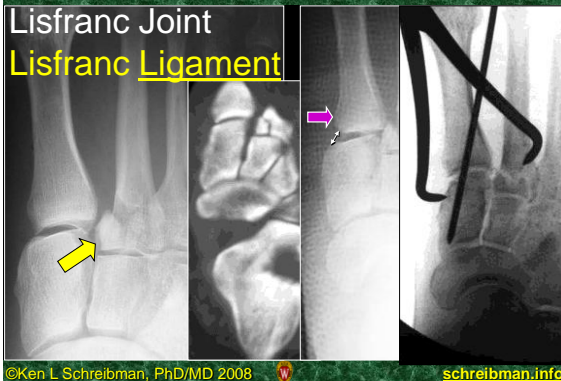
Lisfranc Fx/Dislocation



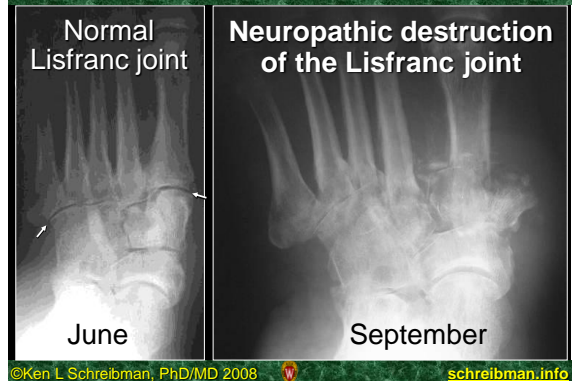
Lisfranc Fx/Dislocation



Lisfranc Fx/Dislocation



Lisfranc Fx/Dislocation: Diabetes



Easily Missed Fractures of the Ankle & Foot

Lisfranc: The Man



Jacques Lisfranc
1790-1847

- Very Aggressive Surgeon
- Wrote Extensively
- Described New Procedures
 - ✓ Disarticulation of the Shoulder
 - ✓ Excision of the Rectum
 - ✓ Amputation of the Cervix
- Never Described T-MT Fx/Dislocation

Thanks to Micaela Sullivan-Fowler
UW History of Medicine Librarian

©Ken L Schreibman, PhD/MD 2008

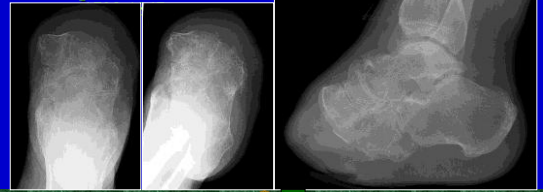
schreibman.info

Lisfranc: The Man



Jacques Lisfranc

- Very Aggressive Surgeon
- Never Described T-MT Fx/Dislocation
- Described T-MT Amputation
 - ✓ 1815: 50 pages to describe
 - ✓ only 1 minute to perform!



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Timeline: 19th Century



Jacques Lisfranc
1790-1847

- Very Aggressive Surgeon
- Never Described T-MT Fx/Dislocation
- Described T-MT Amputation
 - ✓ 1815: 50 pages to describe
 - ✓ only 1 minute to perform!
- 23yo Joined Napoleon's Army



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Timeline: 19th Century



Jacques Lisfranc
1790-1847

- Described T-MT Amputation
- "Military surgeons were not given the calm and unhurried atmosphere necessary for the task of laboriously picking out bone splinters and bits of clothing from gaping wounds."

Medical Revolution in France
Vess 1975 Univ. Press of Fla.



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Timeline: 19th Century



Jacques Lisfranc
1790-1847

- Described T-MT Amputation
- "Locating the open ends of severed arteries and tying them off in the smoke of battle or by flickering candlelight was an enormous problem."

Medical Revolution in France
Vess 1975 Univ. Press of Fla.



©Ken L Schreibman, PhD/MD 2008

schreibman.info

Timeline: 19th Century



Jacques Lisfranc
1790-1847

- Described T-MT Amputation
- "Although some wounds did not themselves dictate amputation, it often had to be done because the patient could not otherwise survive the rigors of transport to the rear"

Medical Revolution in France
Vess 1975 Univ. Press of Fla.




©Ken L Schreibman, PhD/MD 2008

schreibman.info

Easily Missed Fractures of the Ankle & Foot

Timeline: 19th Century



Described T-MT Amputation

"The mind did not have time to reason. Experience and coldbloodedness counted for more than talent. Everything had to be done with prompt and decisive action."

Medical Revolution in France
Vess 1975 Univ. Press of Fla.




Jacques Lisfranc
1790-1847

1800
1796-1815
Napoleonic Wars

1846
Ether

1895
Roentgen Rays

1900

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Timeline: 19th Century



Percy, surgeon-in-chief, complained of having too many "pseudosurgeons who counted their battle actions only by the number of arms and legs they had cut off."

Medical Revolution in France
Vess 1975 Univ. Press of Fla.

Jacques Lisfranc
1790-1847


1800
1796-1815
Napoleonic Wars

1846
Ether

1895
Roentgen Rays


1900





©Ken L Schreibman, PhD/MD 2008 schreibman.info

Timeline: 19th Century



Percy called Lisfranc, "so obsessive a scalpel-wielder that he (Lisfranc) lamented the passing of the Napoleonic age that had provided him with so many splendid opportunities for amputations"

Medical Revolution in France
Vess 1975 Univ. Press of Fla.




Jacques Lisfranc
1790-1847

1800
1796-1815
Napoleonic Wars

1846
Ether


1895
Roentgen Rays

1900

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Timeline: 19th Century



Dr Oliver Wendell Homes (US physician, poet, humorist, Dean of Harvard Medical School):
"As for Lisfranc, I can say little more of him than he was a great drawer of blood...ordering a wholesale bleeding of his patients, right and left, whatever might be the matter with them."

Guillaume Dupuytren: A Surgeon in His Place and Time Barsky, Vantage Press




Jacques Lisfranc
1790-1847

1800
1796-1815
Napoleonic Wars

1846
Ether

1895
Roentgen Rays

1900

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Timeline: 19th Century



Dr Oliver Wendell Homes (US physician, poet, humorist, Dean of Harvard Medical School):
[quoting Lisfranc]:
"the splendid guardsmen of the old Empire had such magnificent thighs to amputate."

Guillaume Dupuytren: A Surgeon in His Place and Time Barsky, Vantage Press

Jacques Lisfranc
1790-1847

1800
1796-1815
Napoleonic Wars

1846
Ether

1895
Roentgen Rays



1900





©Ken L Schreibman, PhD/MD 2008 schreibman.info

Timeline: 19th & 20th Centuries

Jacques Lisfranc
1790-1847

Sir Robert Jones
1857-1933

- Born 1857, N. Wales
- Died 1933, age 76
- 1887 (age 30) Apprenticed w/uncle, Hugh Owen Thomas
- 1888 – Appointed chief surgeon for the Manchester Ship Canal





1800
1796-1815
Napoleonic Wars

1846
Ether

1895
Roentgen Rays

1900

Established a chain of small hospitals along the length of the canal construction
This was the first organized fracture and injury service in England

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Easily Missed Fractures of the Ankle & Foot

Timeline: 19th & 20th Centuries

Jacques Lisfranc 1790-1847

Sir Robert Jones 1857-1933

- During WWI, revolutionized the care of wounded soldiers
 - Established network of field hospitals
 - Rehab hospitals
 - Mortality rate for open fractures was reduced from 80% to 20%

1800 1846 1895 1914-1919 2000
 1790-1847 1846 1895 1914-1919
 Napoleonic Wars Ether Roentgen Rays WW I

1925- "To him and his practical teaching and influence we owe it that our streets today show relatively so few war cripples"

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Timeline: 19th & 20th Centuries

Jacques Lisfranc 1790-1847

Sir Robert Jones 1857-1933

Pioneer in the care of crippling diseases of children. Established the first long-stay orthopaedic hospitals for children.

1800 1846 1895 1914-1919 2000
 1790-1847 1846 1895 1914-1919
 Napoleonic Wars Ether Roentgen Rays WW I

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Jones: Early X-Ray Proponent

Dec 28 1895: Röntgen publishes "On a New Kind of Rays"

Feb 22 1896: Jones publishes in *Lancet*, "The Discovery of a Bullet Lost in the Wrist by Mean of the Roentgen Ray"

Sir Robert Jones 1857-1933

1800 1895 1900 2000
 1895
 Roentgen Rays

Arguably the first published case history in which x-rays were used as a diagnostic tool

©Ken L Schreibman, PhD/MD 2008 schreibman.info

Jones: Early X-Ray Proponent

"In 1896 we were all dancing in a circle round the tentpole. Robert Jones' ankle seemed to give...he said he had strained such and such a muscle or tendon, exclaiming: *Most interesting, most painful. I had no idea it could be so painful. Most interesting!*"

"At that time he (Jones) had what might almost be described as a new toy – an X-ray apparatus, the first in England. He wondered whether it would not be possible for the X-ray to show the torn or swollen muscle, and on experimenting the plate showed to his amazement that a small bone was fractured. This disability gave him immense satisfaction. To one patient who came to him with mysterious symptoms he said, after a brief examination, *Madam, you could have paid me no greater compliment – this is a genuine Jones fracture.*"

Frederick Waston: "The Life of Sir Robert Jones" p98, 1934

Jones: Early X-Ray Proponent

"Radiography here, as in all branches of medicine, is an essential aid to diagnosis. No matter how experienced we may be, we cannot afford to dispense with it, even in the apparently simple and obvious case. Not only should we insist upon procuring a film, but it is equally important that we should welcome the radiologist's reading of it. Some surgeons resent this and say, 'Give me the film so that I can read it myself,' but this is an arrogant and stupid attitude, and not the patient's advantage."

Jones: Manipulation as a therapeutic measure. Proc. Roy Soc Med 24: 1405, 1931-2

Jones: The Inspiration

Memorial Tablet:
 "Great surgeon: greater man"

Obituary:
 "As a teacher he was pre-eminent, not in the role of didactic pedagogue, but in the role of leader able to enthuse men, and through them he advanced the art and science of his specialty"

Peltier: "Eponymic fractures: Robert Jones and Jones's fracture" Surgery 1972; 71: p522

©Ken L Schreibman, PhD/MD 2008 schreibman.info