



UPPSALA
UNIVERSITET



**AKADEMISKA
SJUKHUSET**

Fotdiagnostik del I

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Akademiska sjukhuset, Uppsala

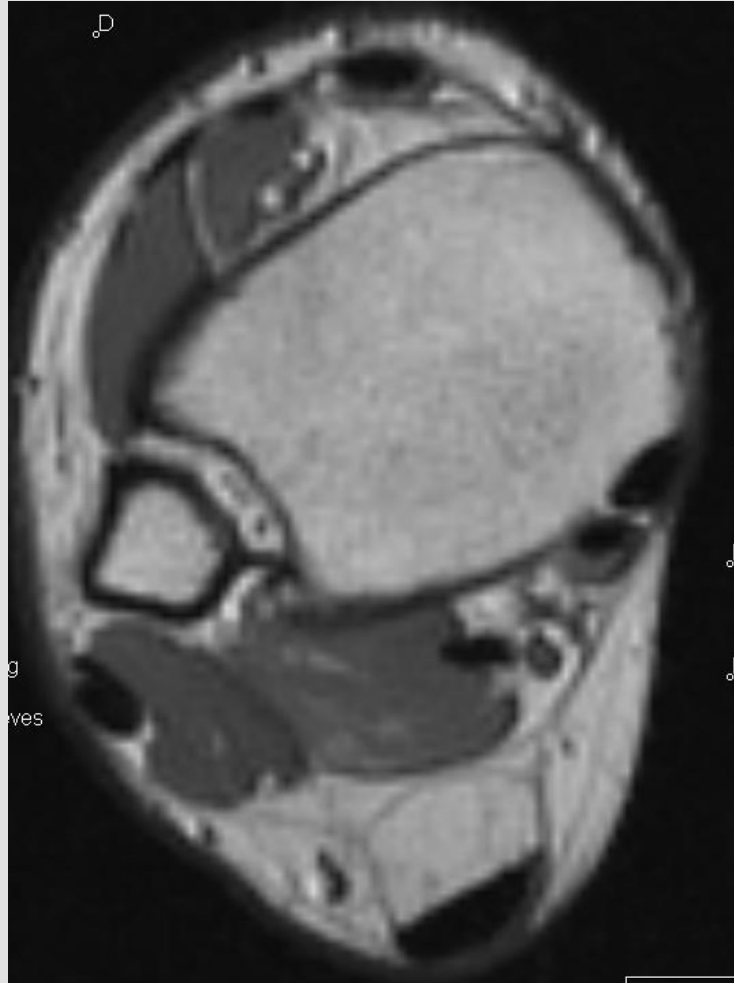
Disposition, del I

- *Mediala longitudinal pelare av foten;*
 - Springligament
 - Deltoidligament
 - Tibialis posteriorsenan

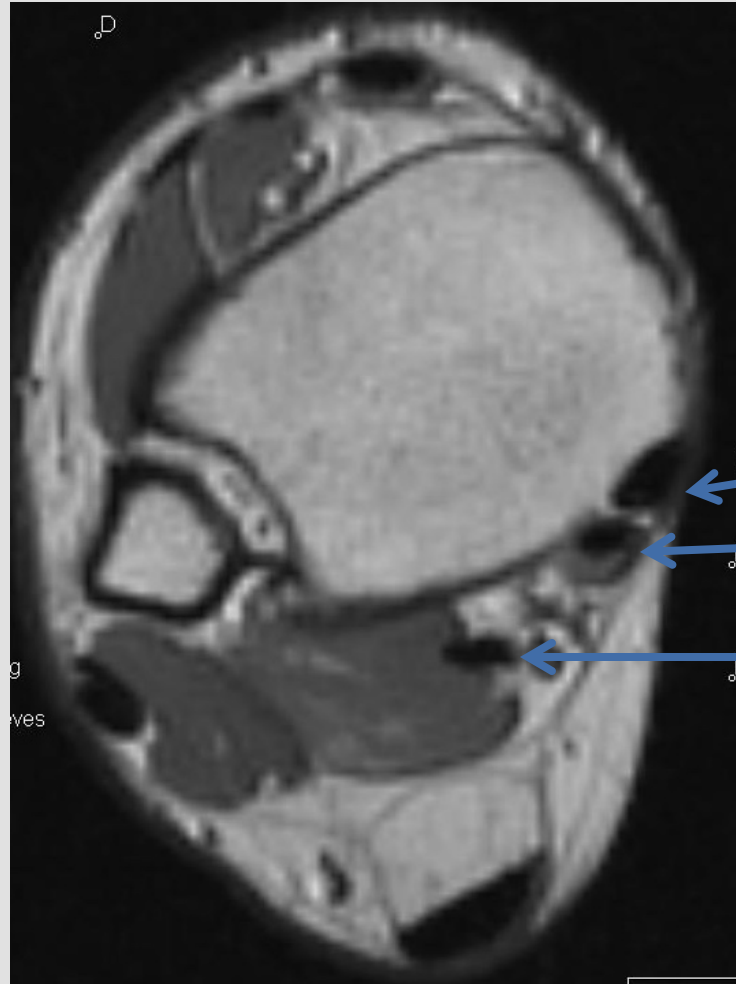
Disposition, del II

- ❑ *Hälsena*
- ❑ *Peroneus senorna*
- ❑ *Impingement*
- ❑ *Morton neurom*
- ❑ *Tarsaltunnelsyndrom*
- ❑ *Sinus tarsi syndrom*

MRI-anatomi



MRI-anatomi



Tom

Dick

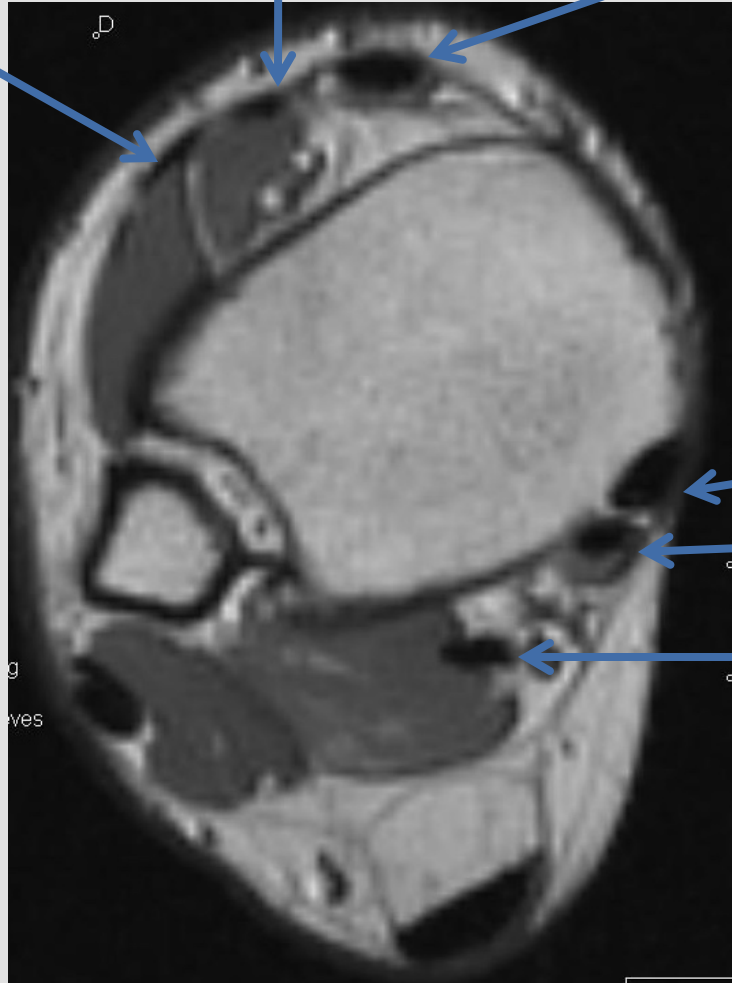
Harry

MRI-anatomi

Dick

Harry

Tom

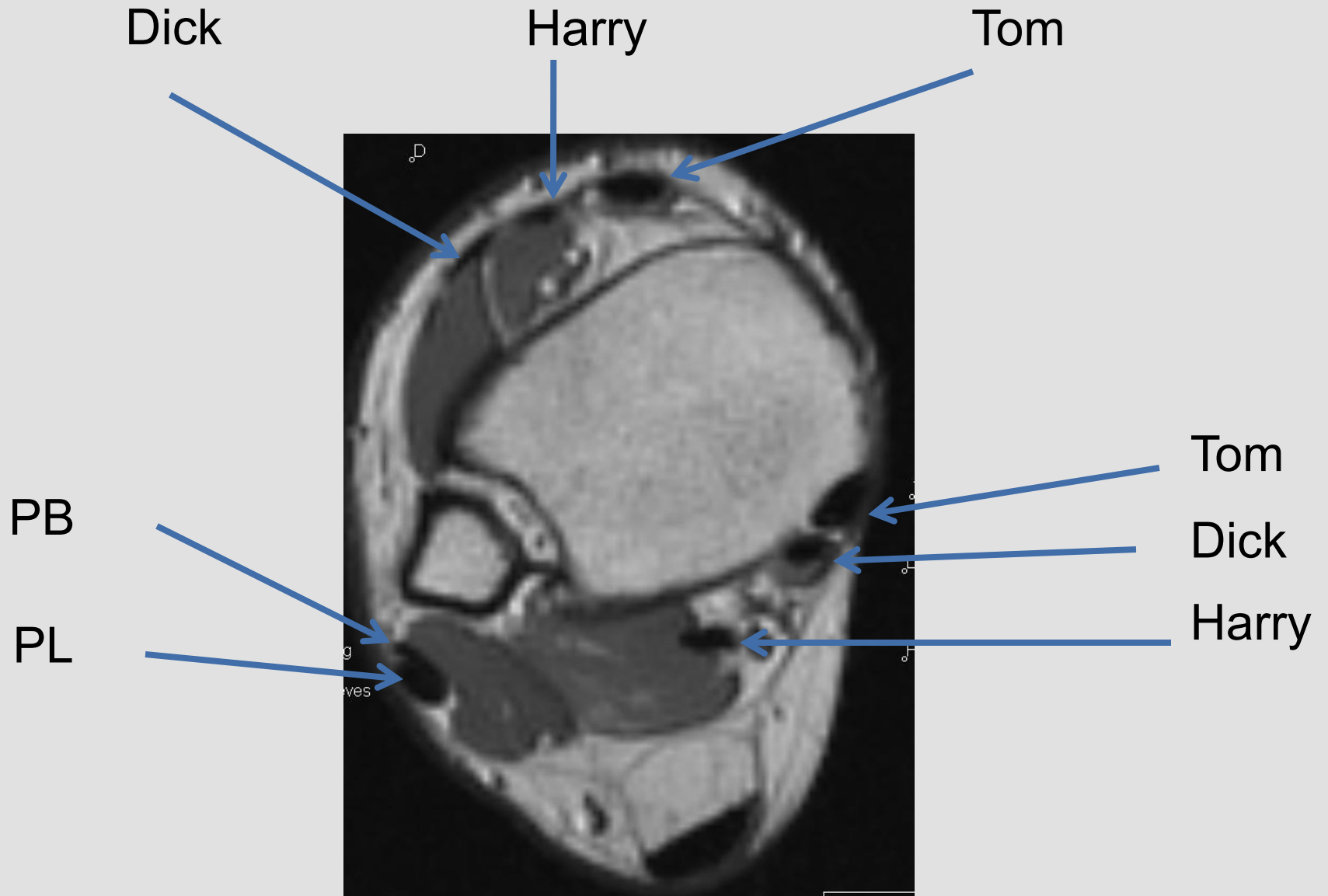


Tom

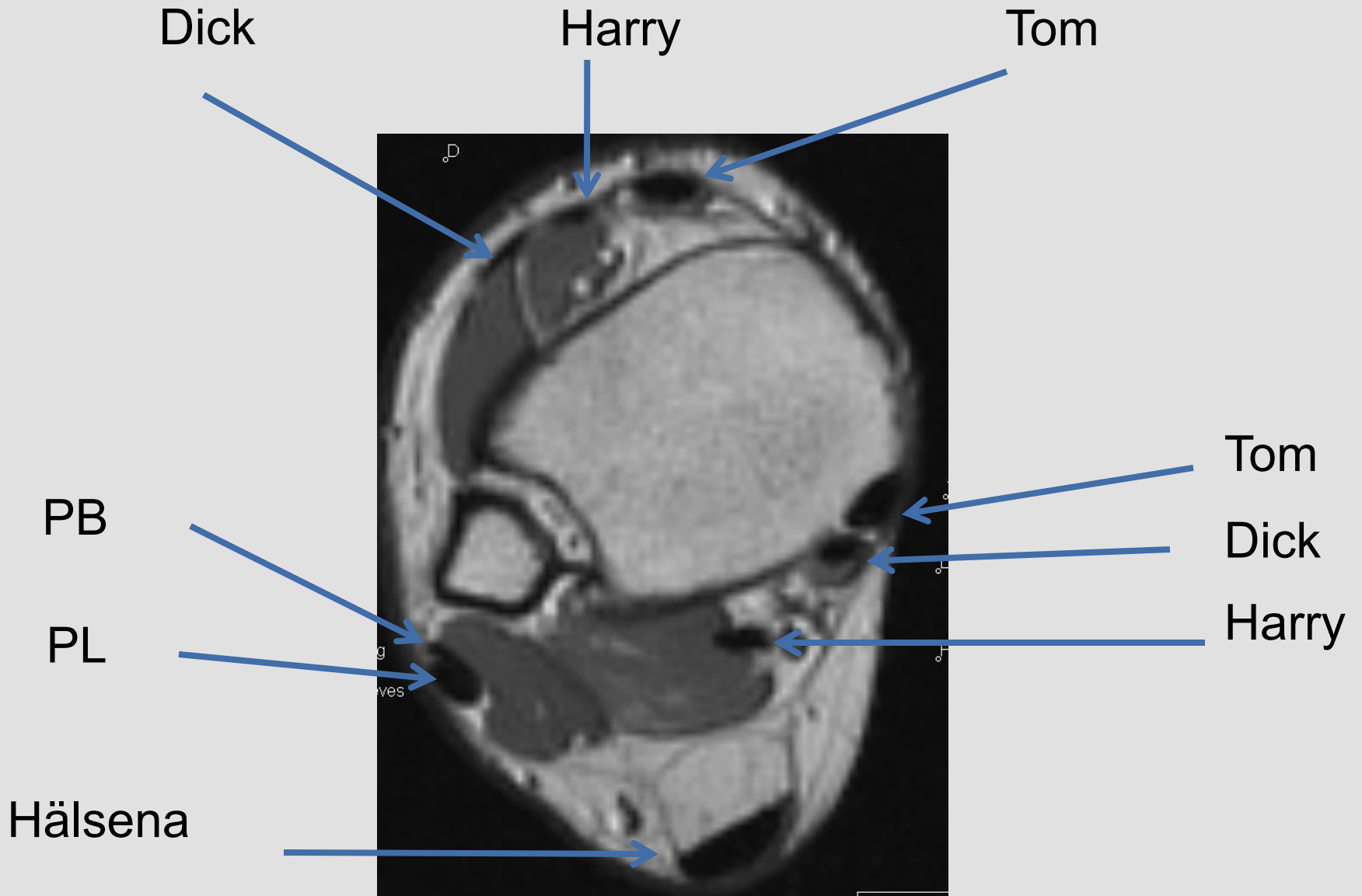
Dick

Harry

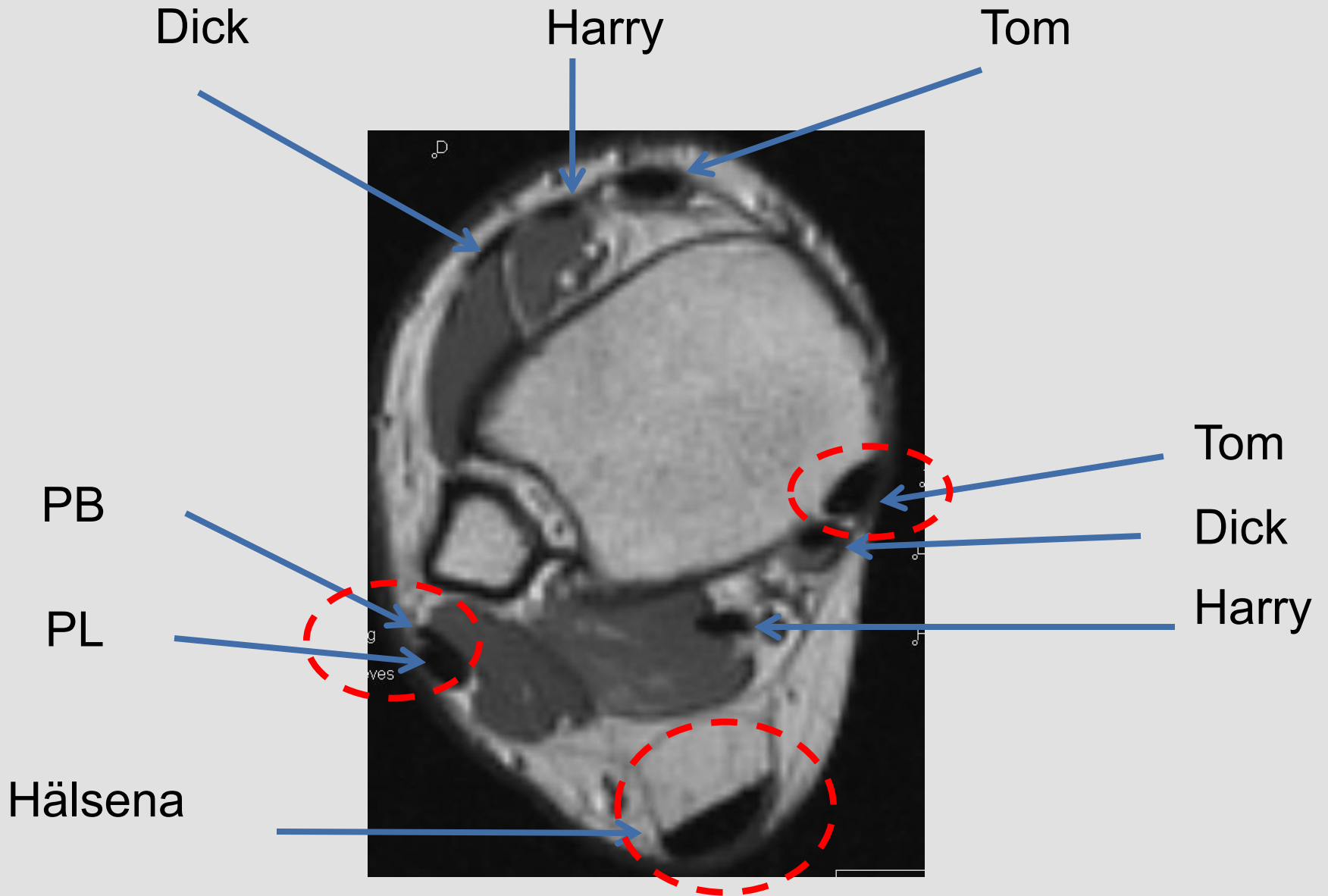
MRI-anatomi



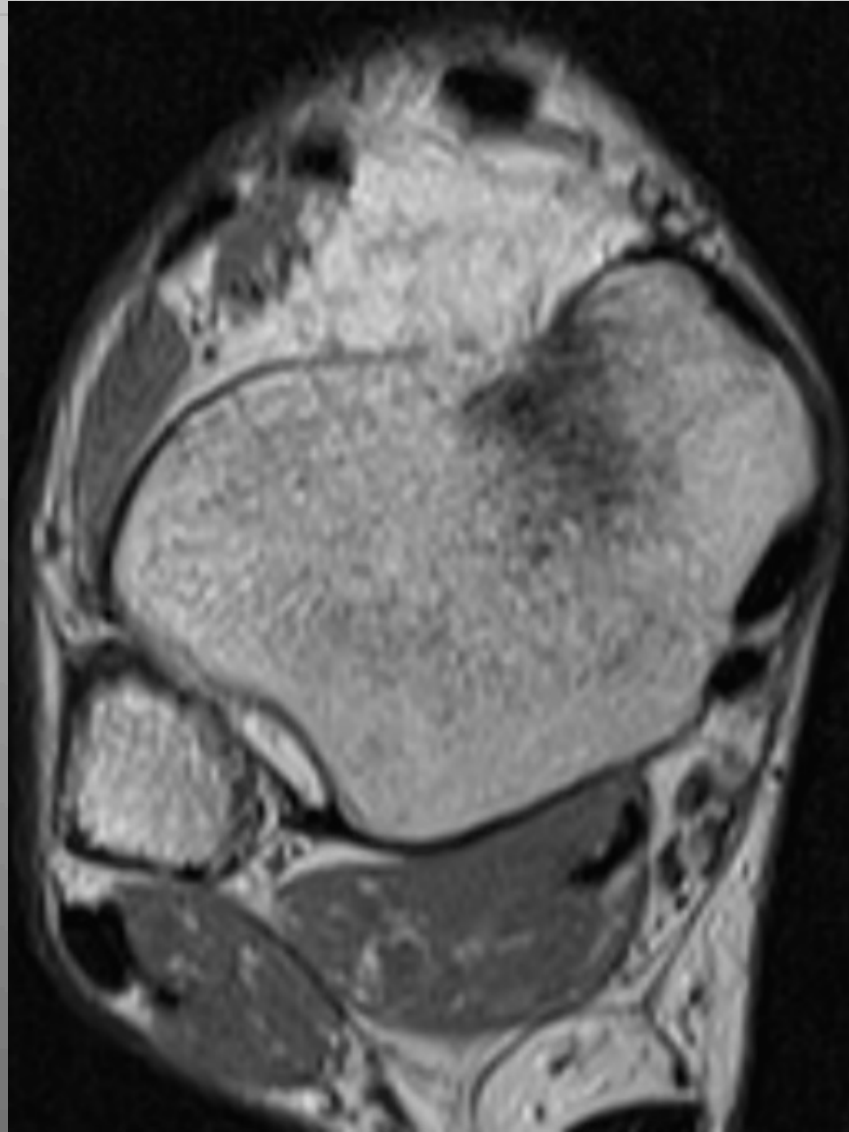
MRI-anatomi



MRI-anatomi



MRI-anatomi

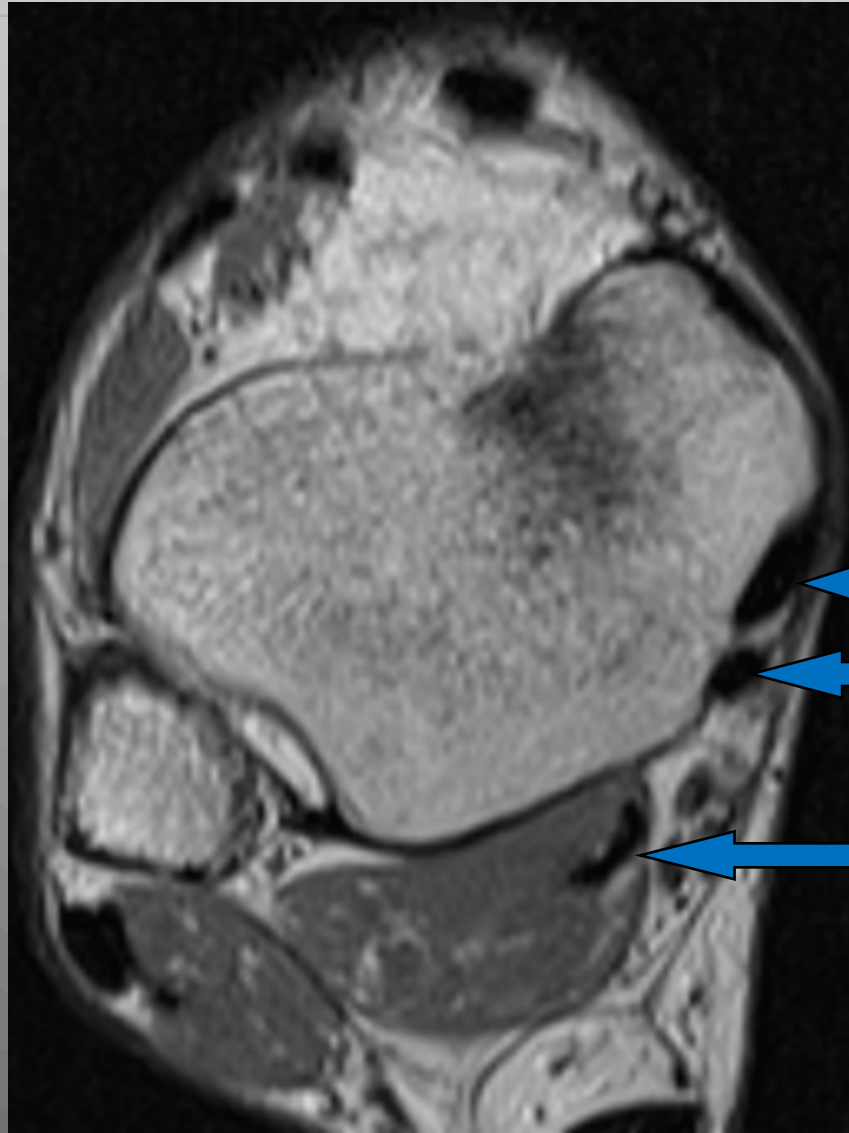


PTT

1½ - 2 ggr

större jmf FDL

MRI-anatomi



PTT

1½ - 2 ggr

större jmf FDL

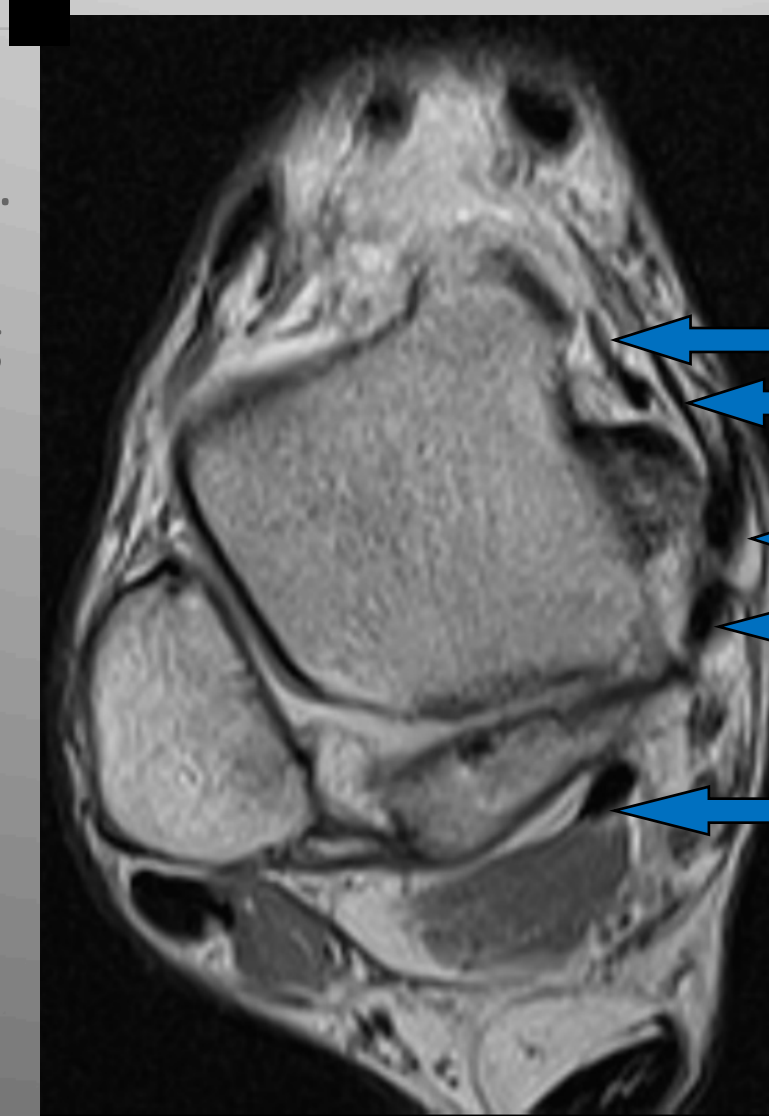
FDL

FHL

MRI-anatomi

Deltoidligament:

- ✓ Ant. tibiotalar lig.
- ✓ Tibiocalc. lig.
- ✓ Tibionavikular lig



Ant. tibiotalar lig

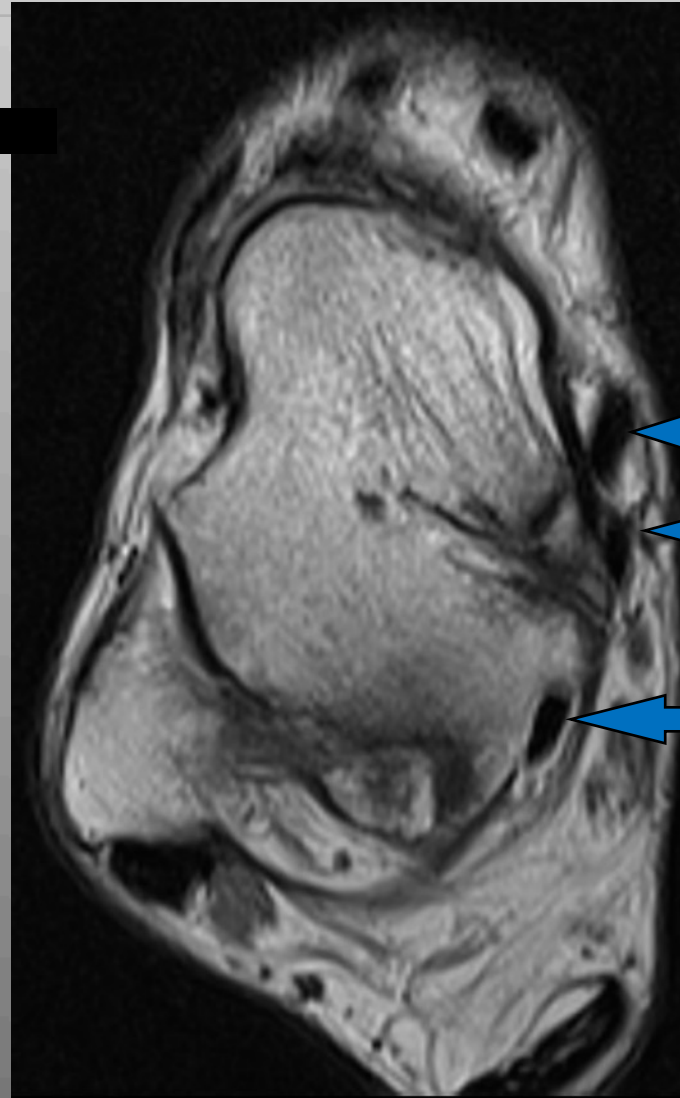
Tibiocalc. lig.

PTT

FDL

FHL

MRI-anatomi

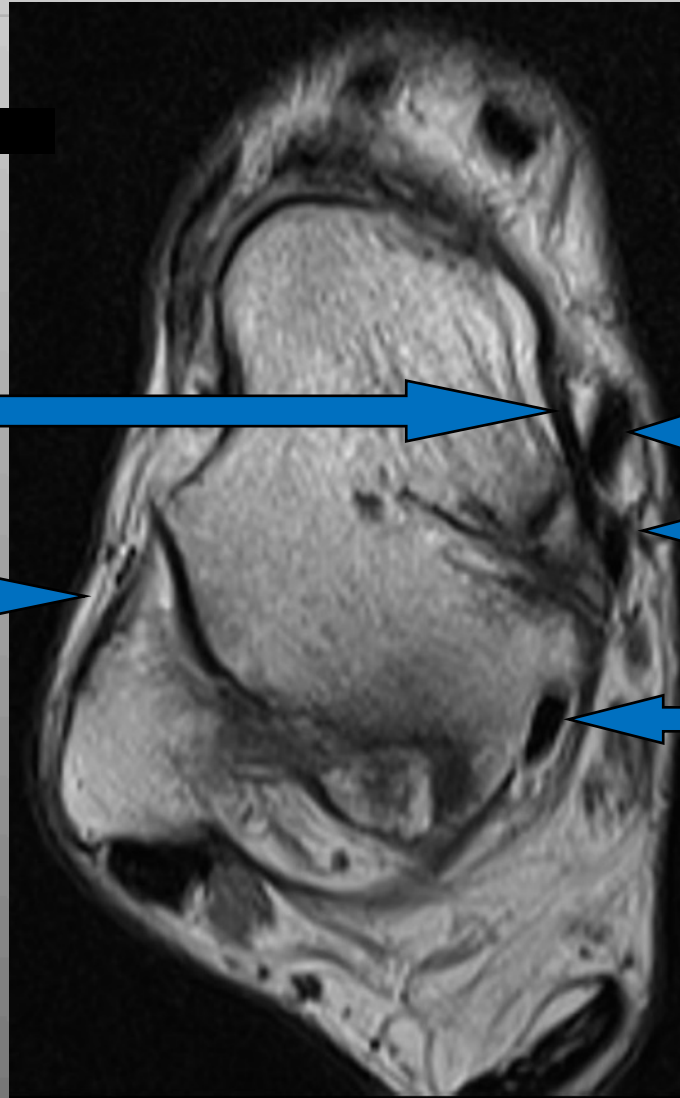


PTT

FDL

FHL

MRI-anatomi



Deltoid ligament

PTT

FTA

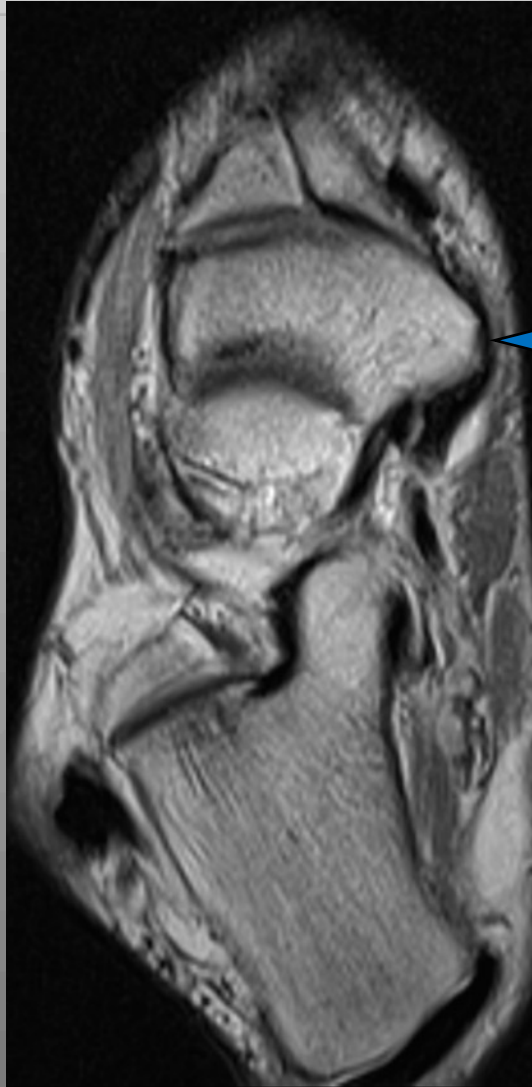
FDL

FHL

MRI-anatomi

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL



Supermedial
CNL

MRI-anatomi

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL



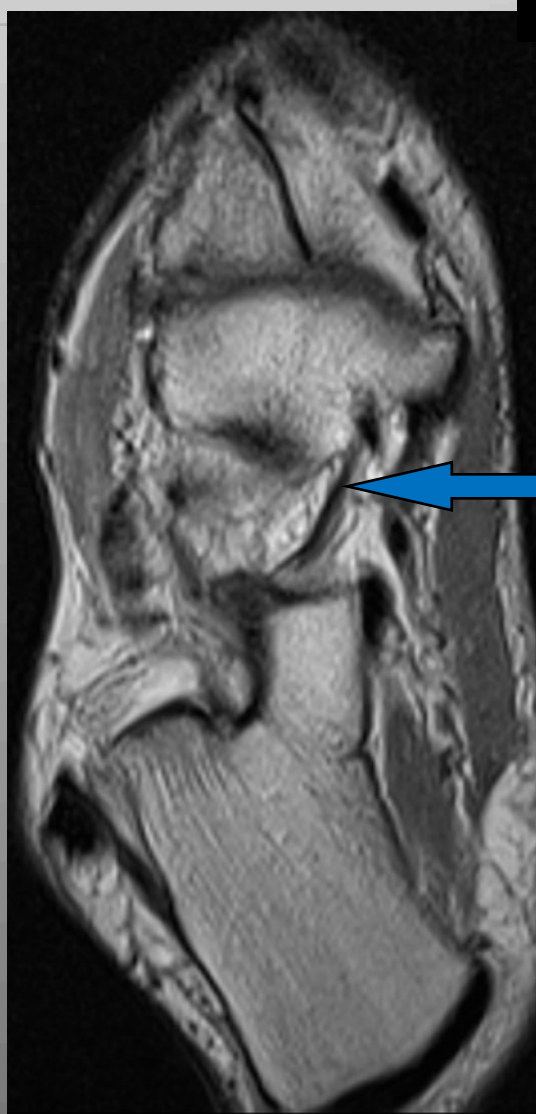
Supermedial
CNL

Mediooblique
CNL

MRI-anatomi

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL



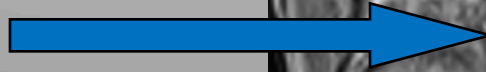
Mediooblique
CNL

MRI-anatomi

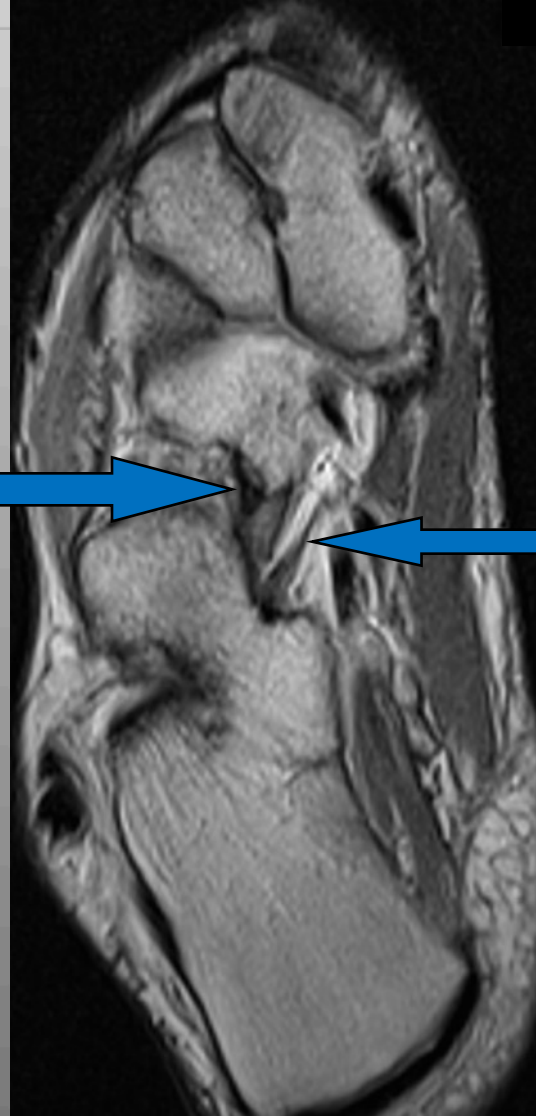
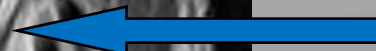
Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL

Inferoplantar
CNL



Mediooblique
CNL



MRI-anatomi

Deltoidligament:

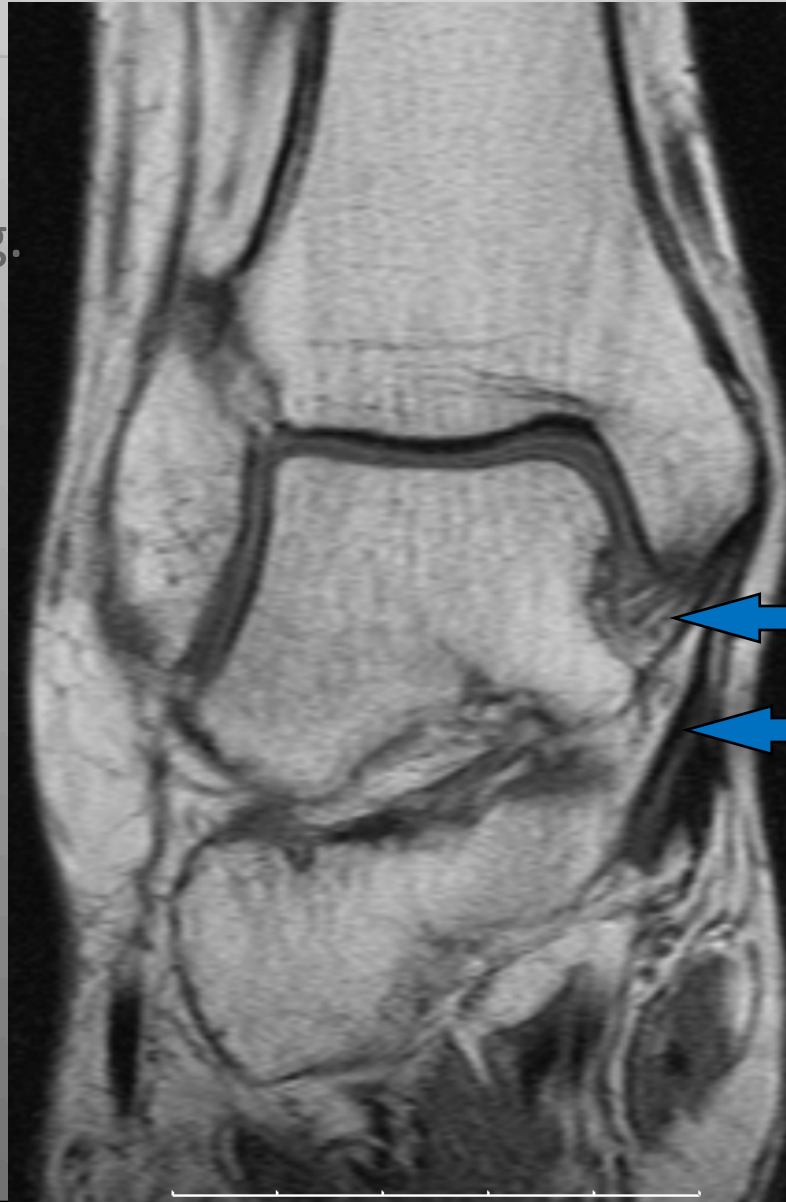
- ✓ Ant tibiotalar lig.
- ✓ Post tibiotalar lig.



MRI-anatomi

Deltoidligament:

- ✓ Ant tibiotalar lig.
- ✓ Post tibiotalar lig.



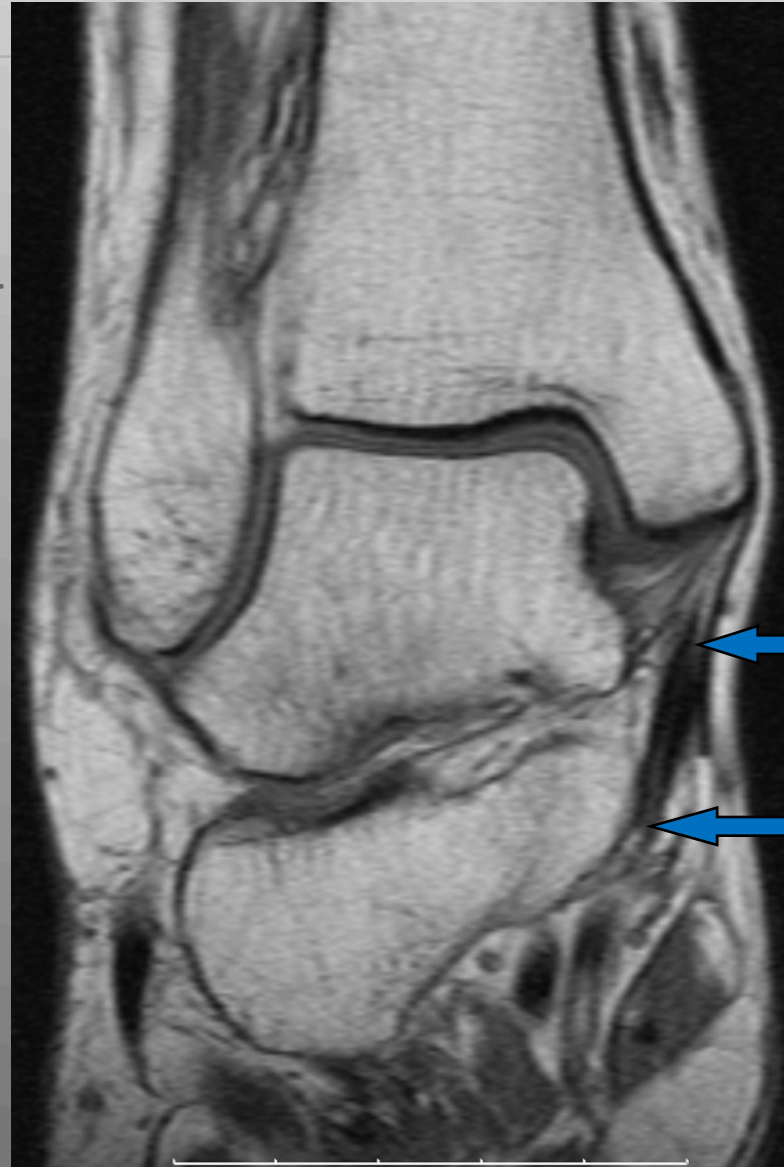
Deltoidligament
Deep fiberer (ant
tibiotalar lig)

Deltoidligament
Superficial fiberer

MRI-anatomi

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL



Tibiospring fibrer
Deltoidligament

Supermedial
CNL

MRI-anatomi

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL

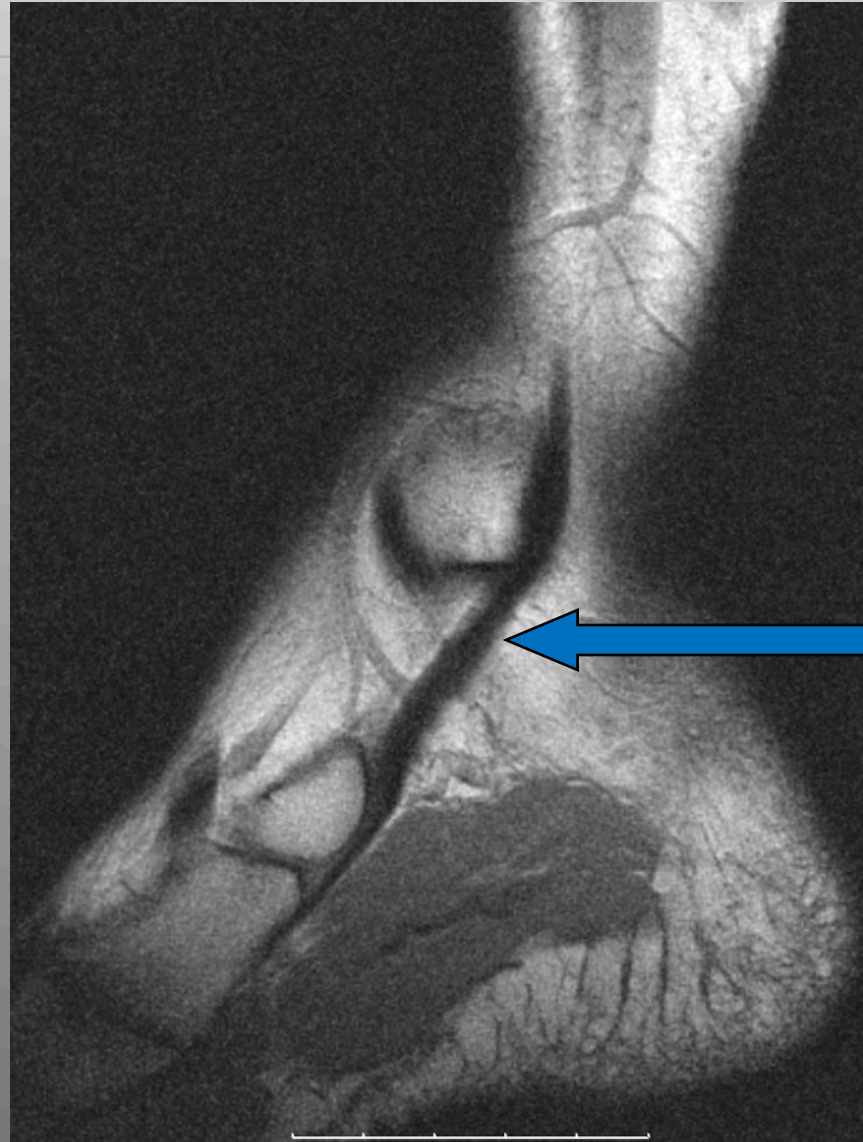


Inferoplantar
CNL

Supermedial
CNL

Medioplantar
oblique CNL
Normal
< 4 mm tjock

MRI-anatomi



PTT

MRI-anatomi



PTT

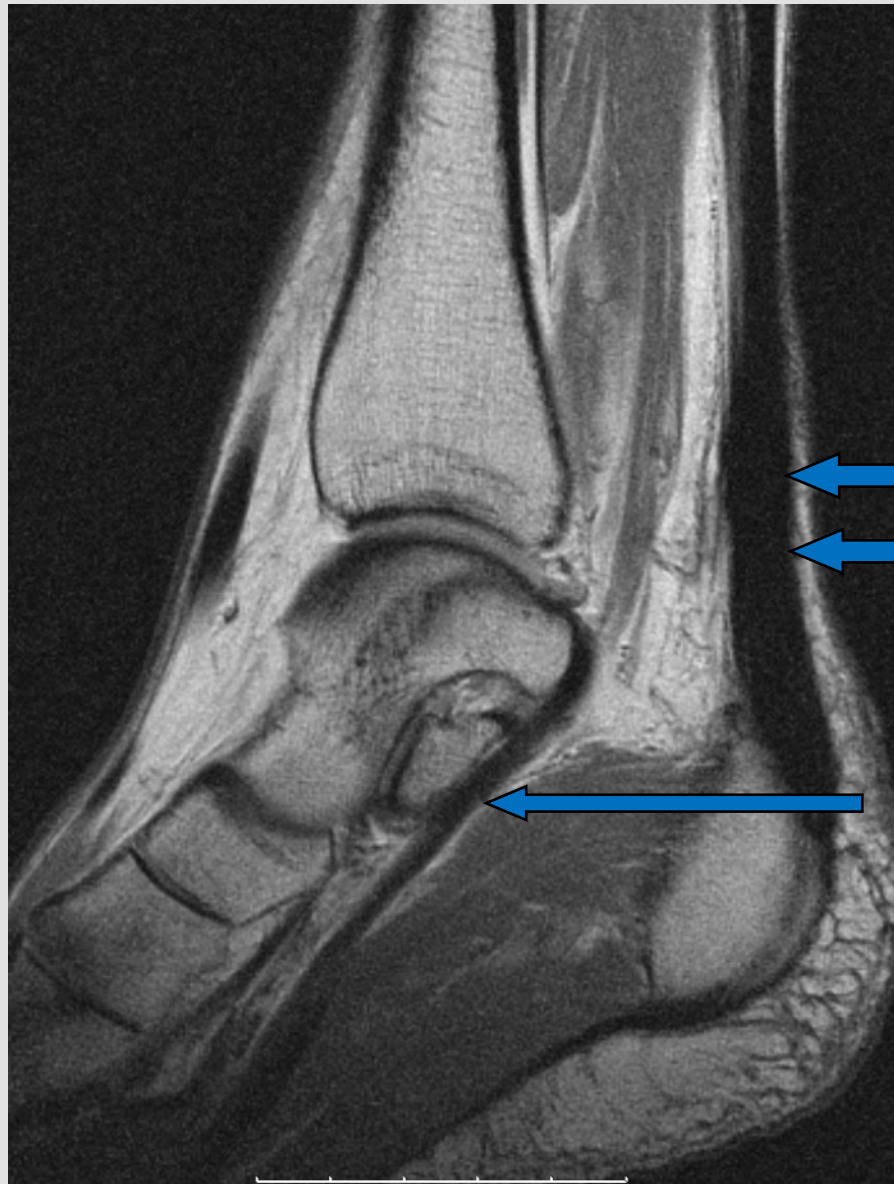
FDL

MRI-anatomi



FHL

MRI-anatomi



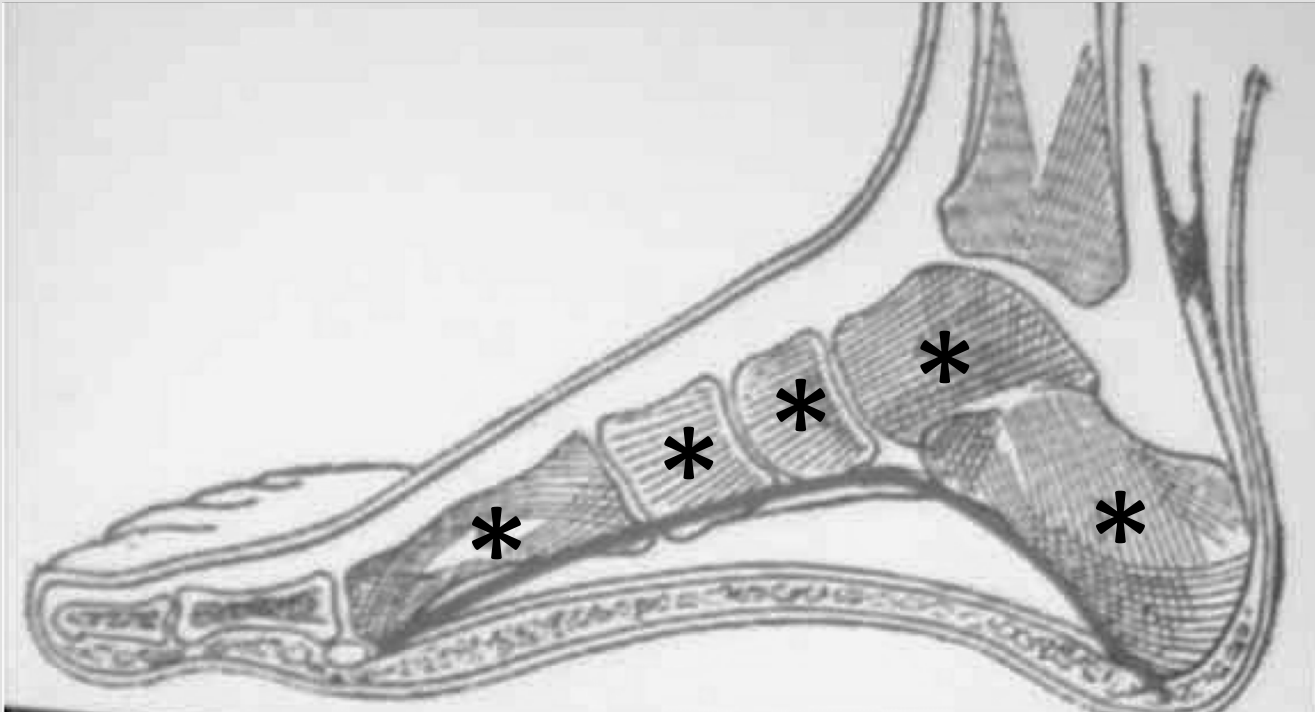
Hälsena

FHL

Disposition, del I

- *Mediala longitudinal pelare av foten;*
 - Springligament
 - Deltoidligament
 - Tibialis posteriorsenan

Mediala longitudinal pelare av foten



Calcaneus, talus, naviculare, cunifforme I-III, metatarsale 1,2 och 3
&
Statiska och dynamiska stabiliserare

Mediala longitudinal pelare av foten

□ Statiska stabiliserare

- Deltoidligament
- Springligament (calcaneonavicular ligament)
- Plantar fascia
- Short and long plantar ligaments
- Talocalcaneal interosseous ligament

□ Dynamiska stabiliserare

- Tibialis posterior senan
- Hälsena!!

Mediala longitudinal pelare av foten

❑ Statiska stabiliserare

- Deltoidligament
- Springligament (calcaneonavicular ligament)
- Plantar fascia
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- Talocalcaneal interosseous ligament

❑ Dynamiska stabiliserare

- Tibialis posterior senan
- Hälsena!!

Deltoidligament- Statiska stabiliserare

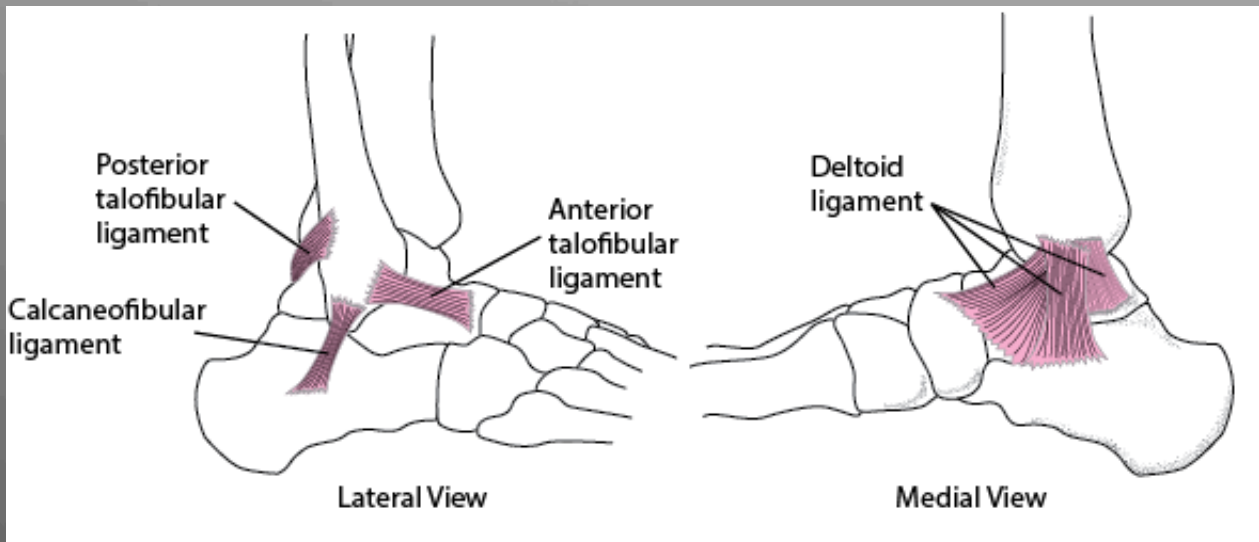
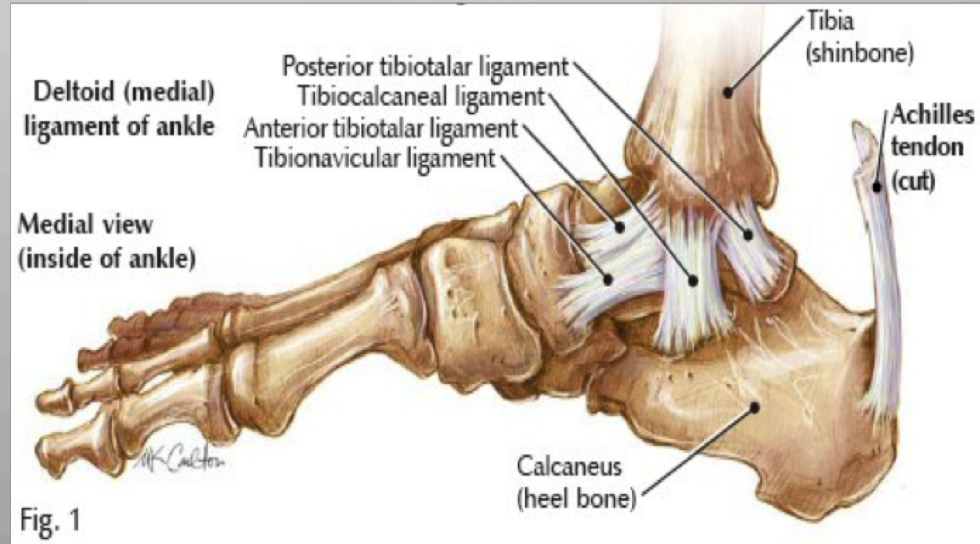
- ❑ Mediala ligament
- ❑ Djup del, rektangulär, består av anterior tibiotalar fibrer

- ❑ Ytlig del, triangulär, består av:
 - Posterior tibiotalar fibrer posteriort
 - Tibiocalcaneal fibrer medialt
 - Tibionavikular fibrer anteriort

Deltoidligament- Statiska stabiliserare

Deltoidligament:

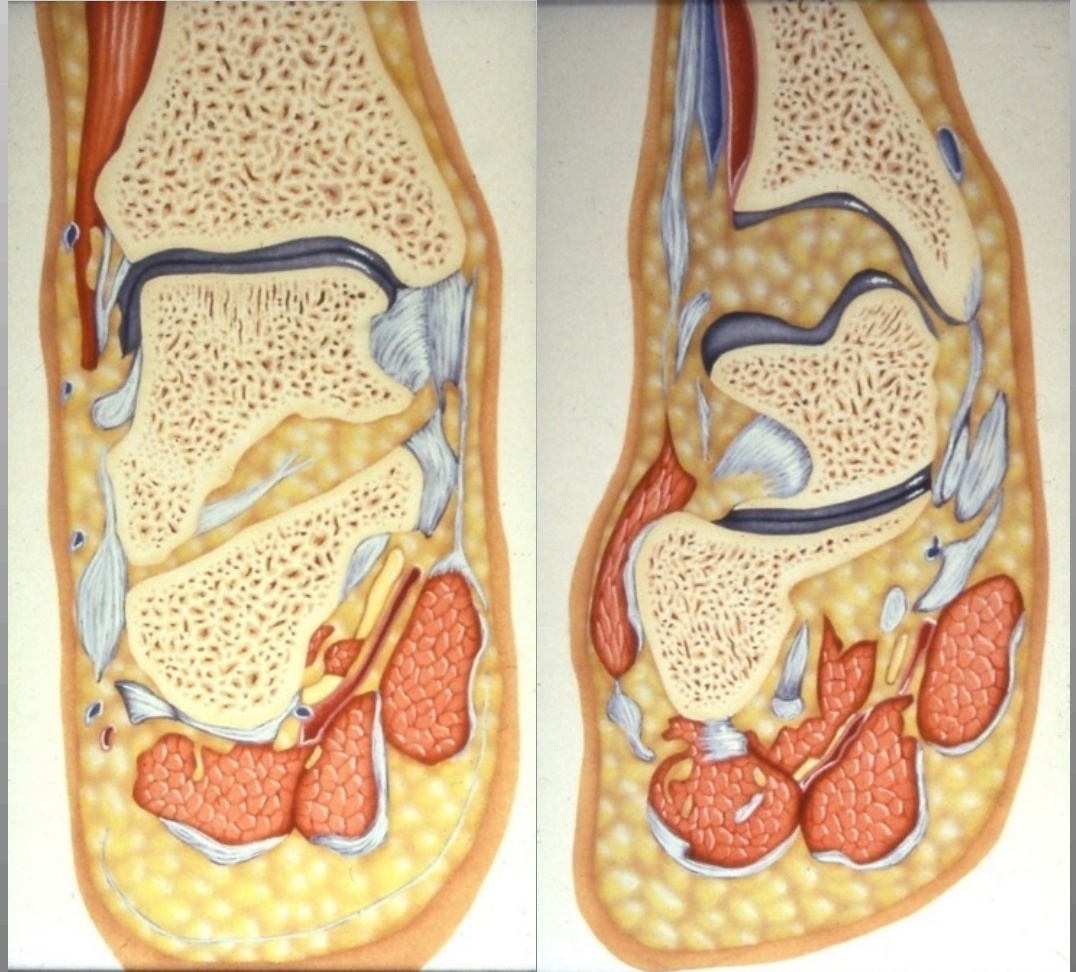
- ✓ Ant. tibiotalar lig.
- ✓ Tibiocalc. lig.
- ✓ Tibionavikular lig



Deltoidligament- Statiska stabiliserare

Deltoidligament:

- ✓ Ant. tibiotalar lig.
- ✓ Tibiocalc. lig.
- ✓ Tibionavikular lig





Normal deltoidligament



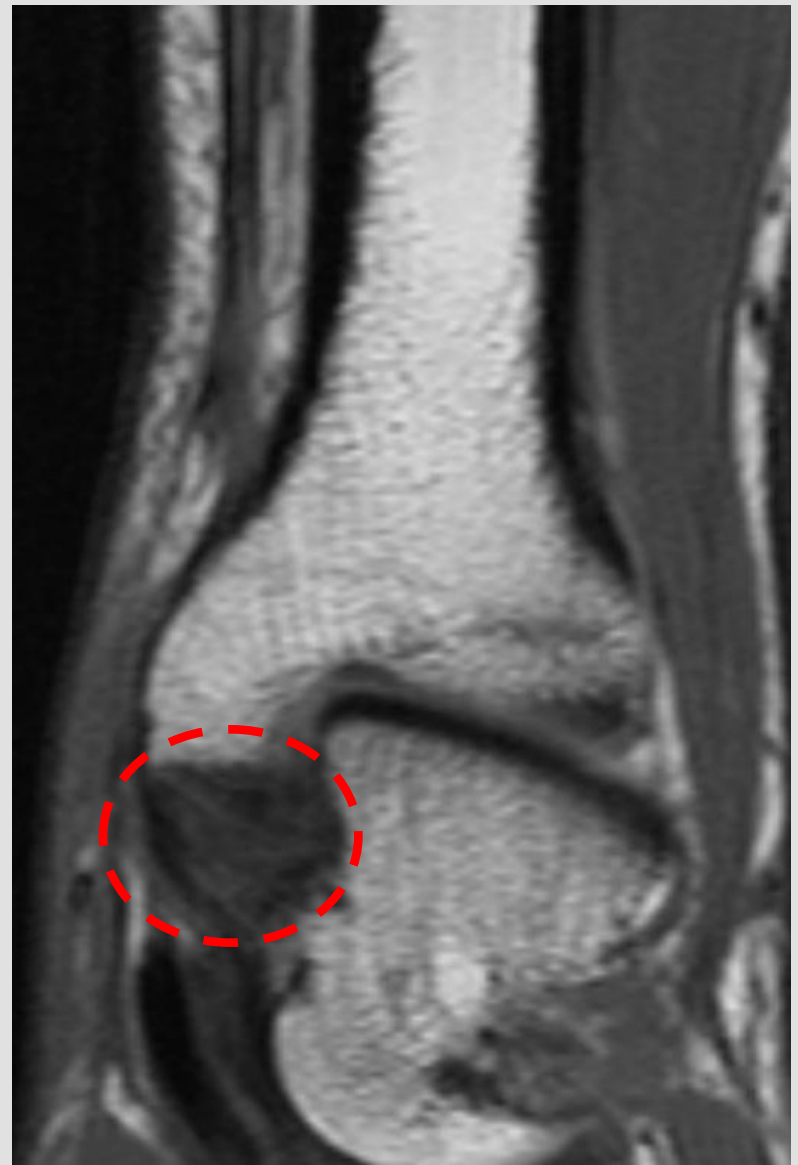
Normal deltoïdligament



Ruptur av deltoïdligament

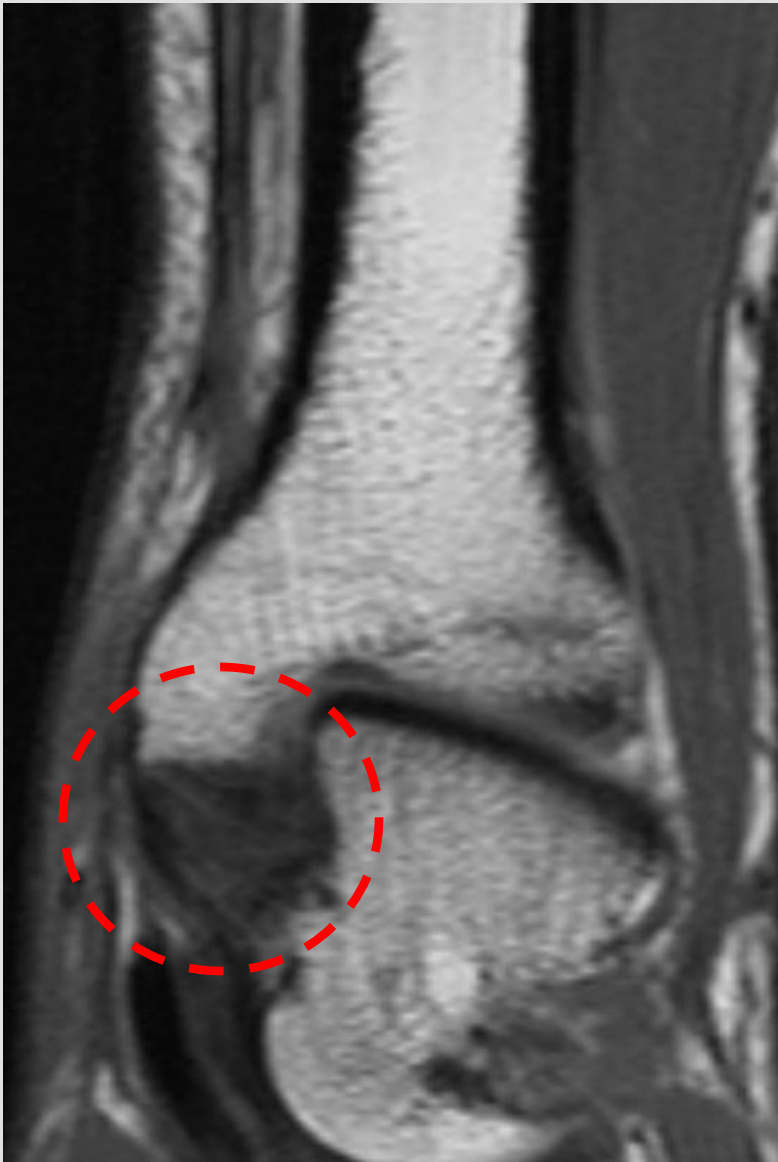


Normal deltoidligament

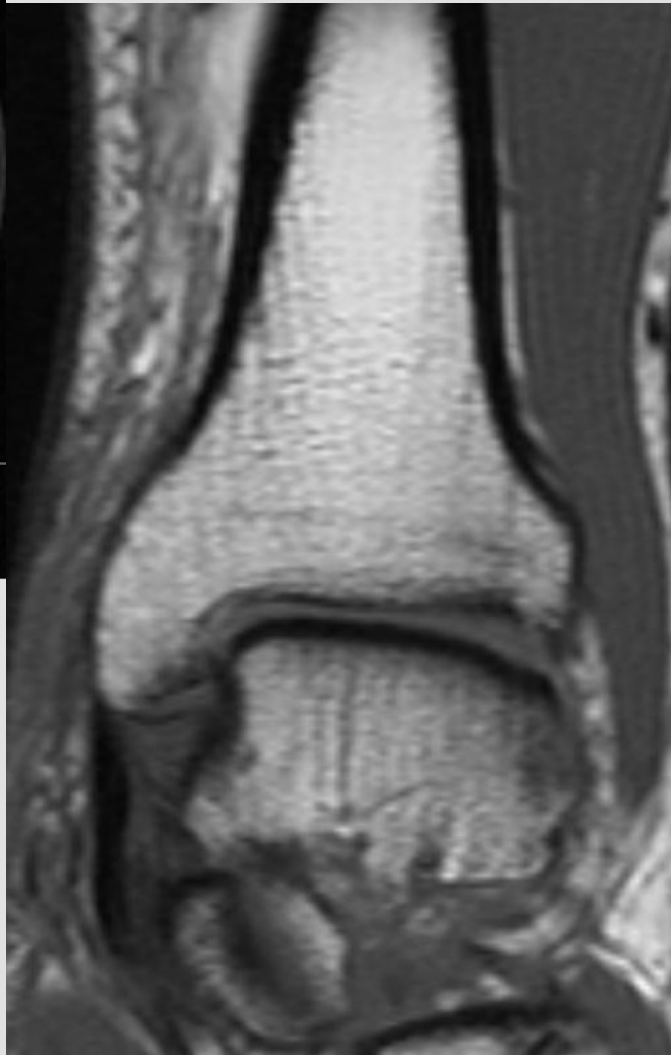
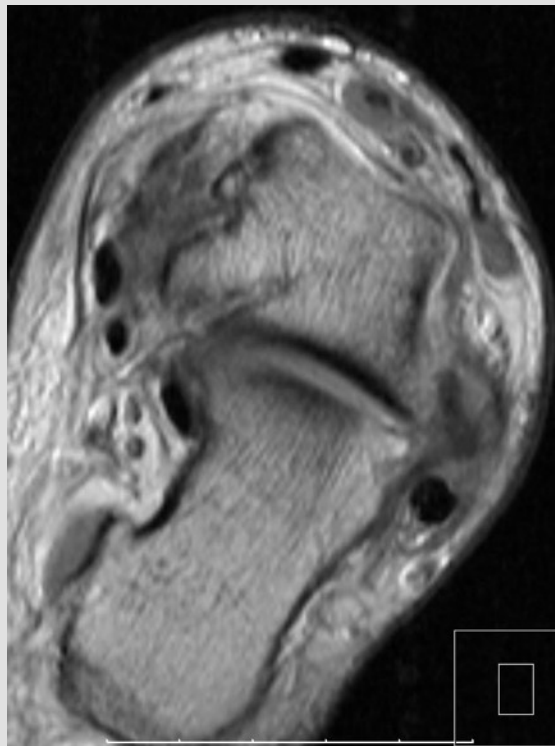


Ruptur av deltoidligament

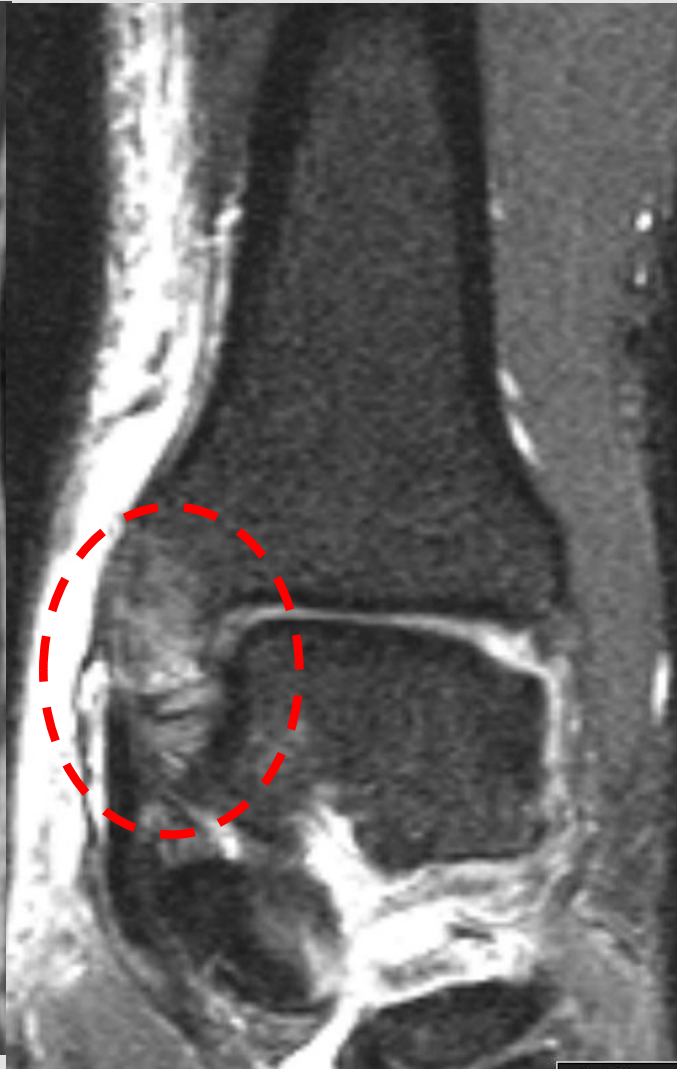
Partiell ruptur av deltooidligament



Total ruptur av deltooidligament



Total ruptur av deltoidligament



Mediala longitudinal pelare av foten

❑ Statiska stabiliserare

- Deltoidligament
- Springligament (calcaneonavicular ligament)
- Plantar fascia
- Short and long plantar ligaments
- Talocalcaneal interosseous ligament

❑ Dynamiska stabiliserare

- Tibialis posterior senan
- Hälsena!!

Springligament- Statiska stabiliserare

❑ Calcaneonavicular (CNL)

❑ Funktion

- Förhindra kollaps av mediala pelaren
- 3 Komponenter
 - ✓ Supermedial CNL
 - ✓ Medioplantar CNL
 - ✓ Inferoplantar CNL

Springligament- Statiska stabiliserare

Springligament:

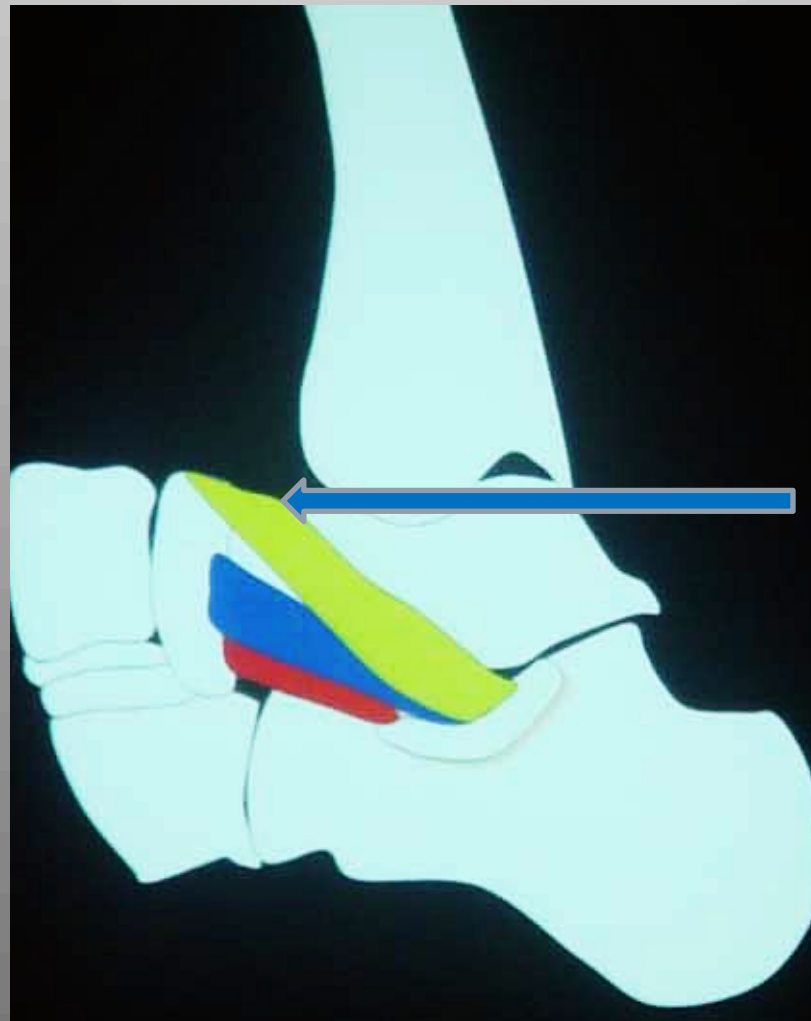
- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL



Springligament- Statiska stabiliserare

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL

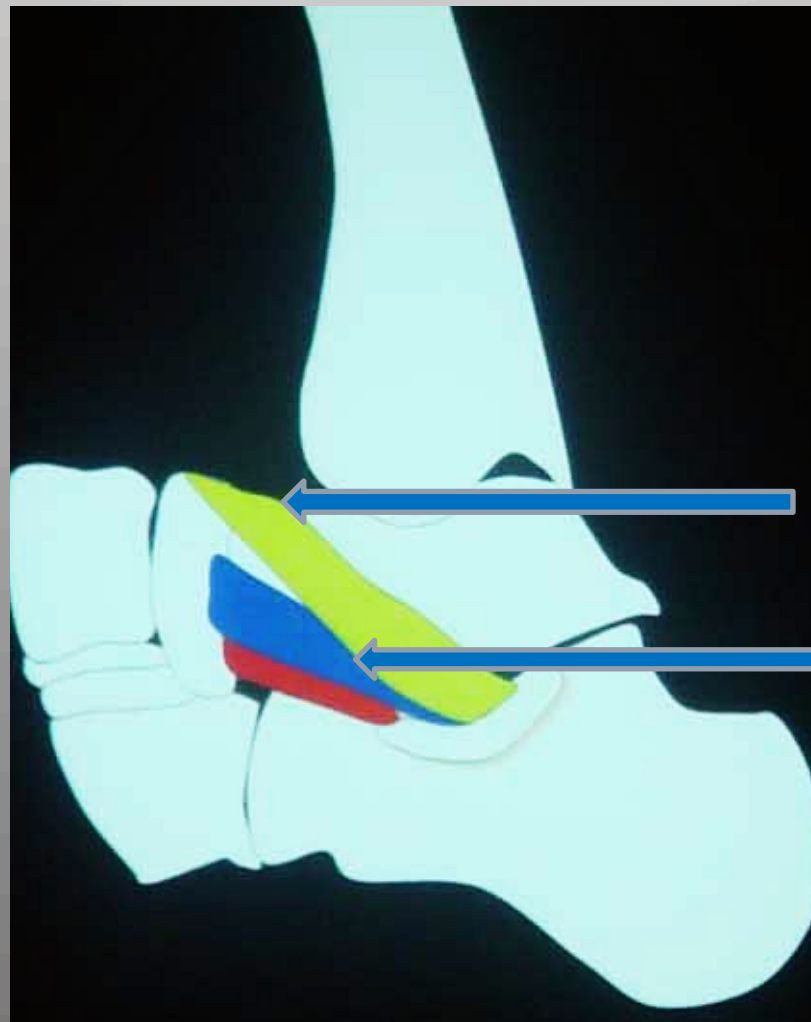


Supermedial CNL

Springligament- Statiska stabiliserare

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL



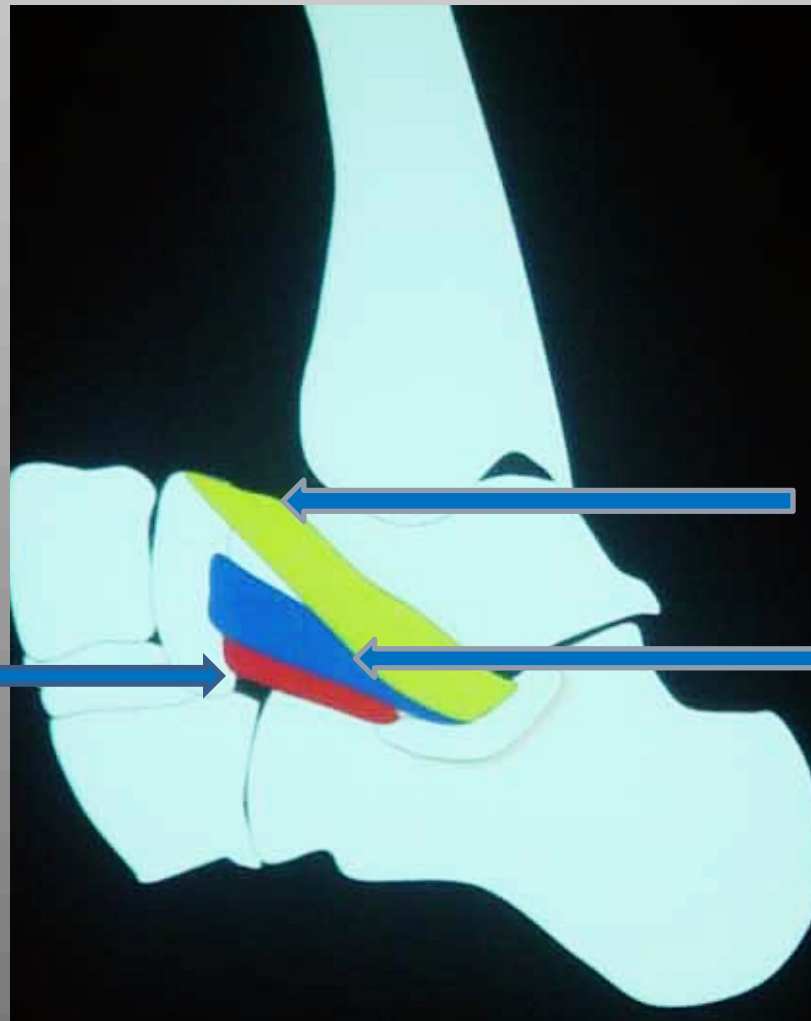
Supermedial CNL

Mediooblique CNL

Springligament- Statiska stabiliserare

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL



Supermedial CNL

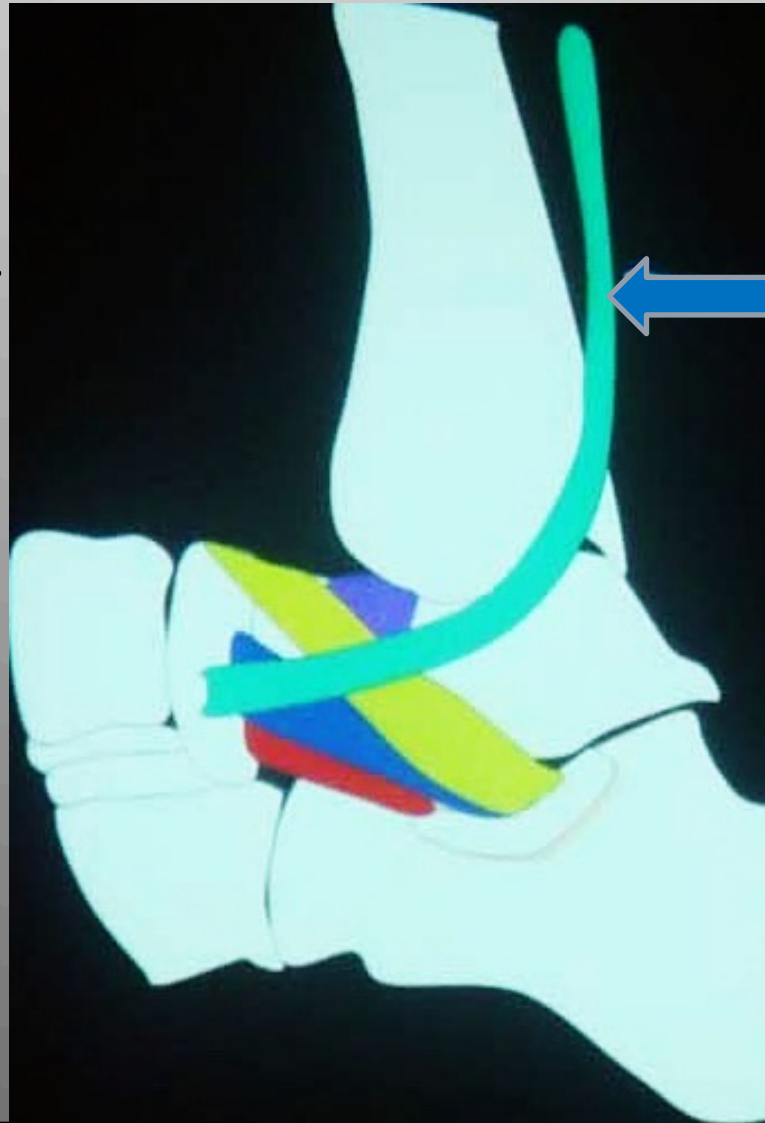
Mediooblique CNL

Inferoplantar CNL

Springligament- Statiska stabiliserare

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL



Tibialis
posterior
senan
(PTT)

Springligament- Statiska stabiliserare

Springligament:

- ✓ Supermedial CNL
- ✓ Medioplantar CNL
- ✓ Inferoplantar CNL

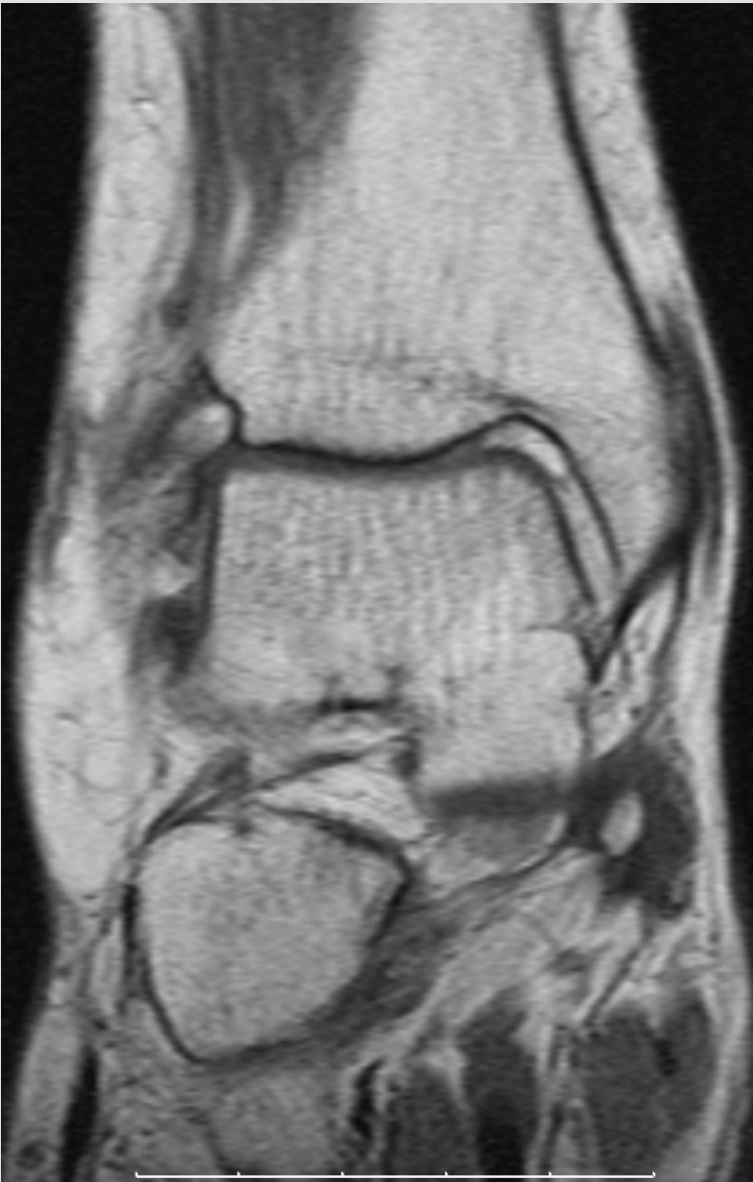
Inferoplantar
CNL



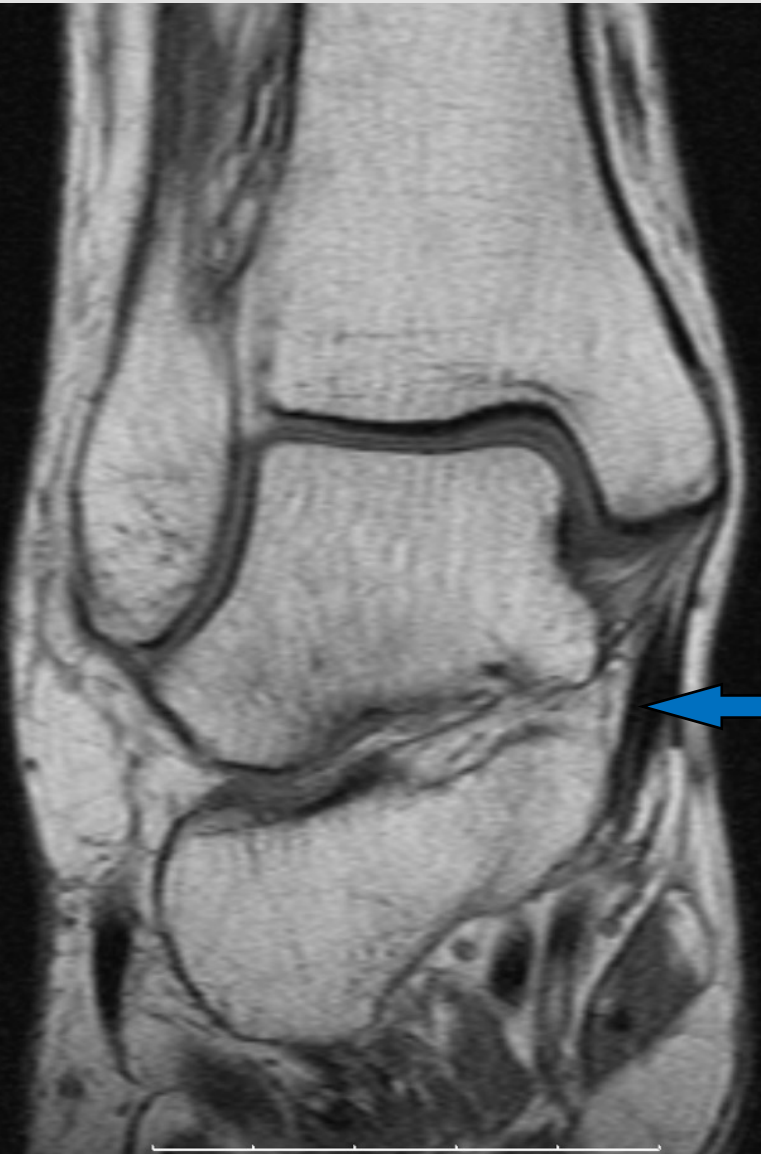
Supermedial
CNL

Mediooblique
CNL

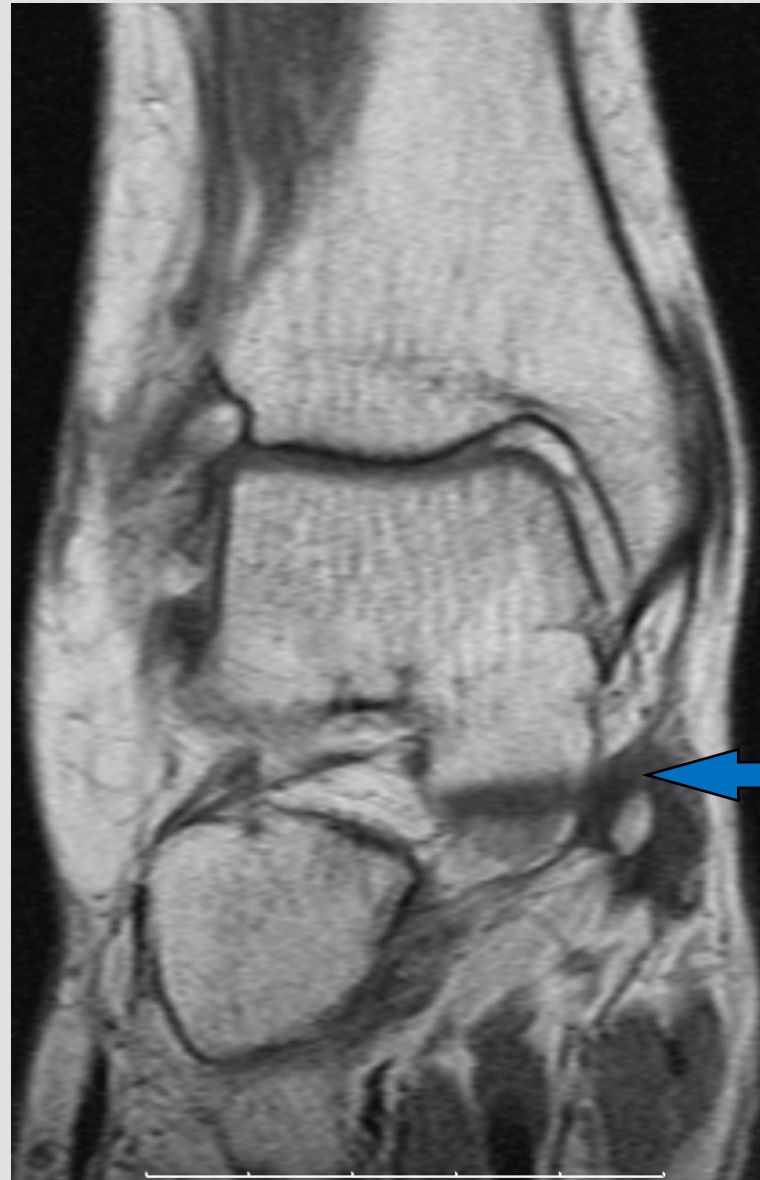
Normal springligament



Normal springligament

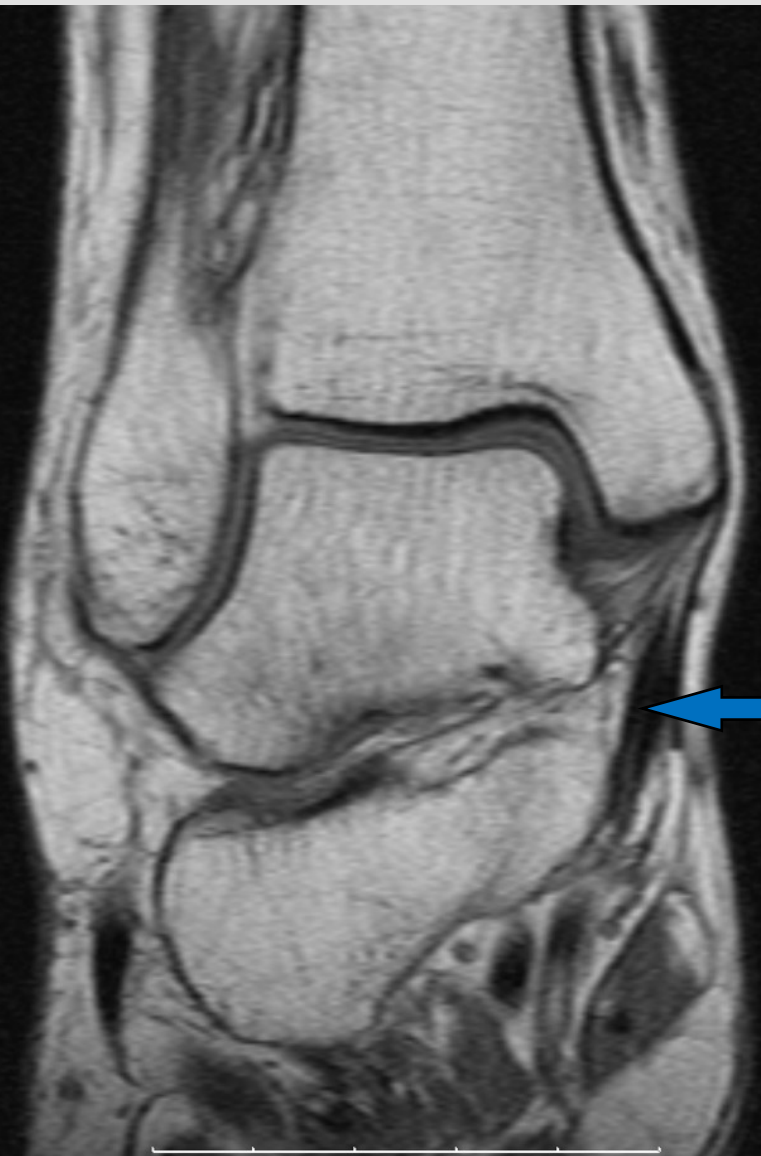


Super-
medial
CNL



Supermedial
CNL

Normal springligament



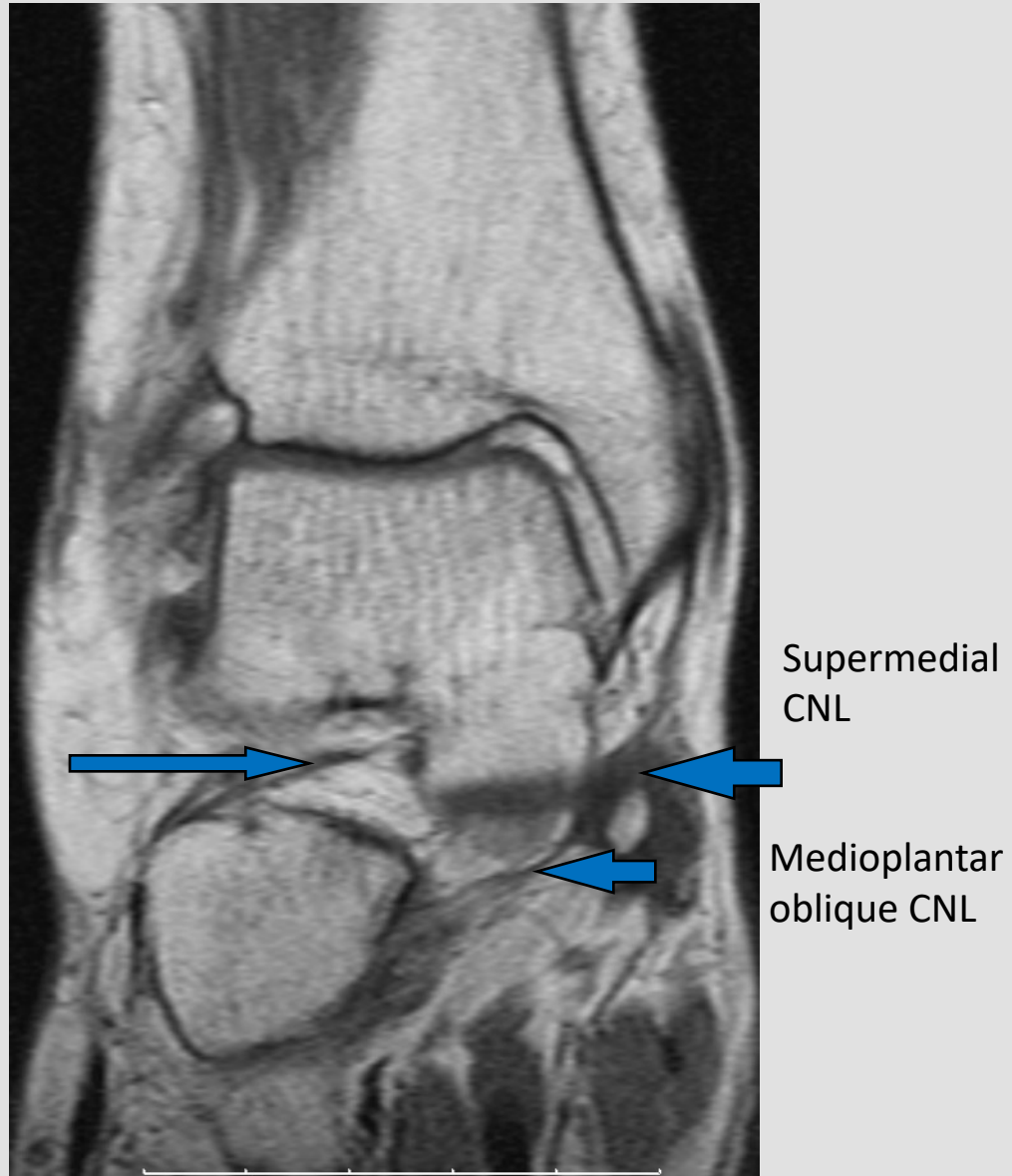
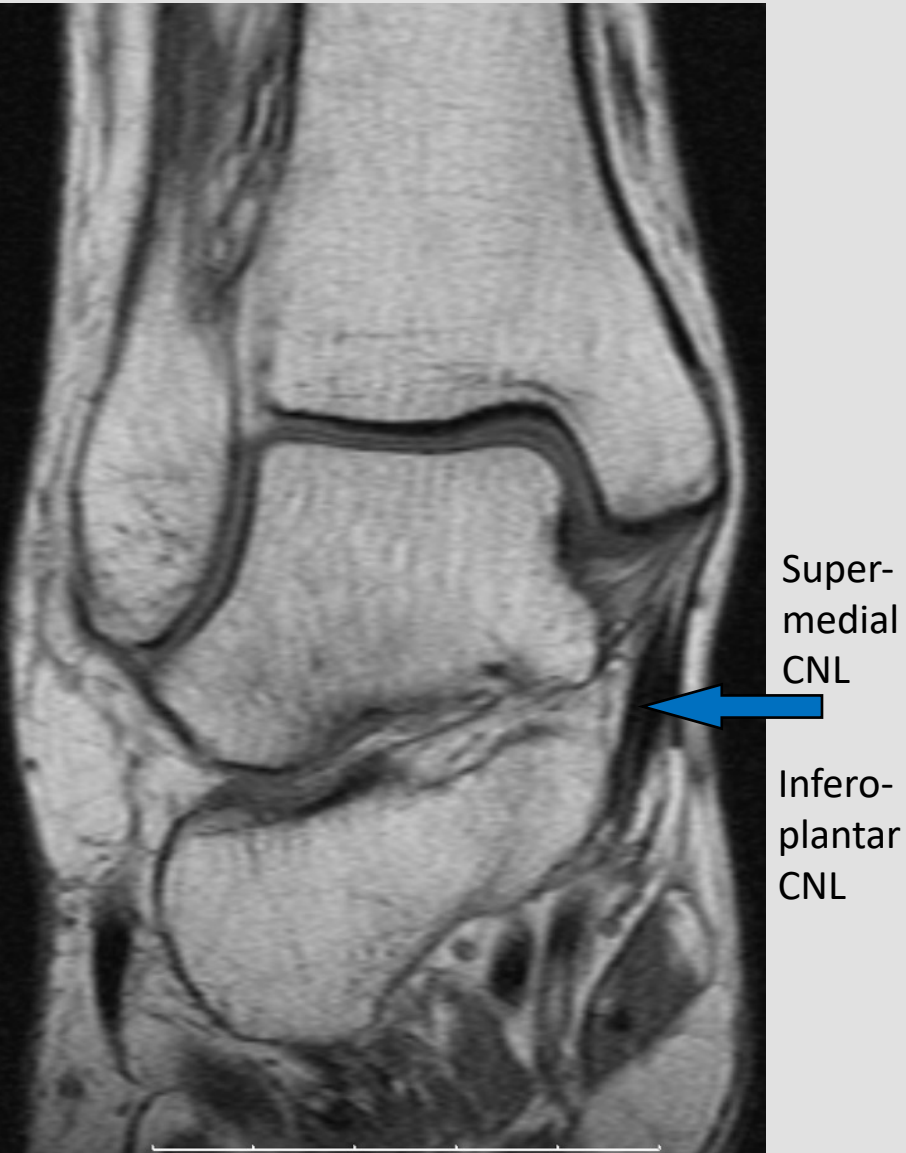
Super-medial
CNL



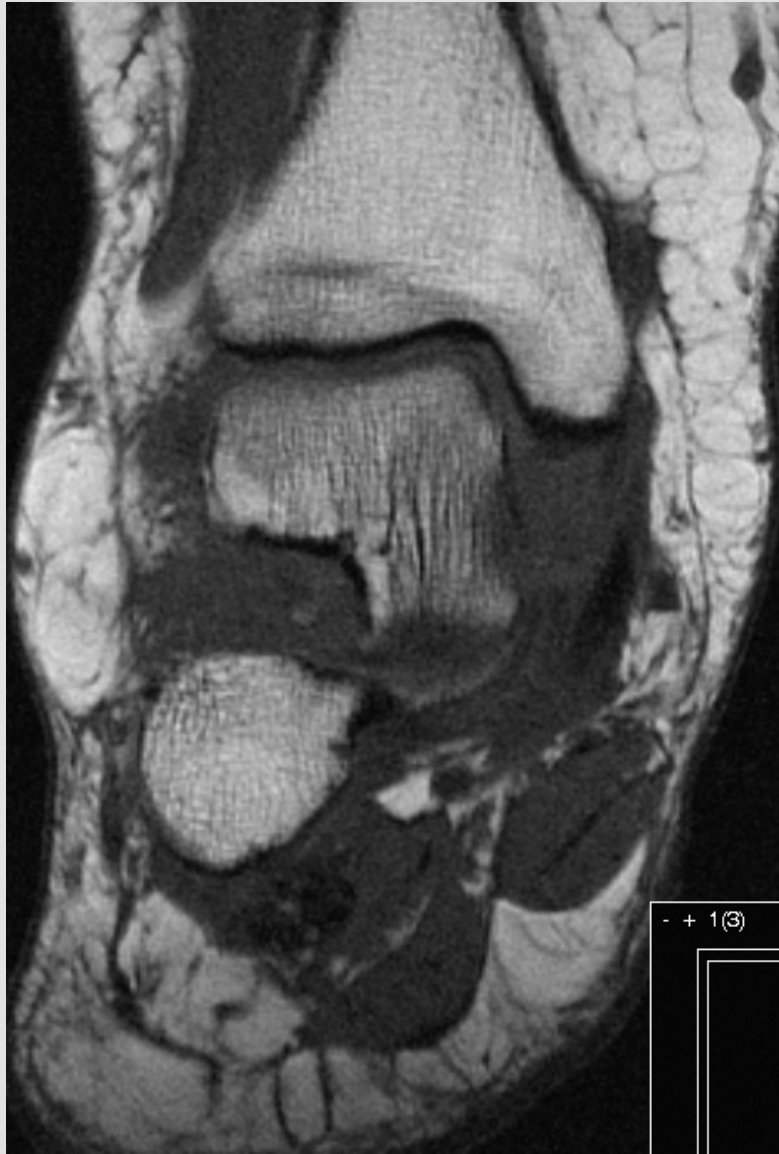
Supermedial
CNL

Medioplantar
oblique CNL

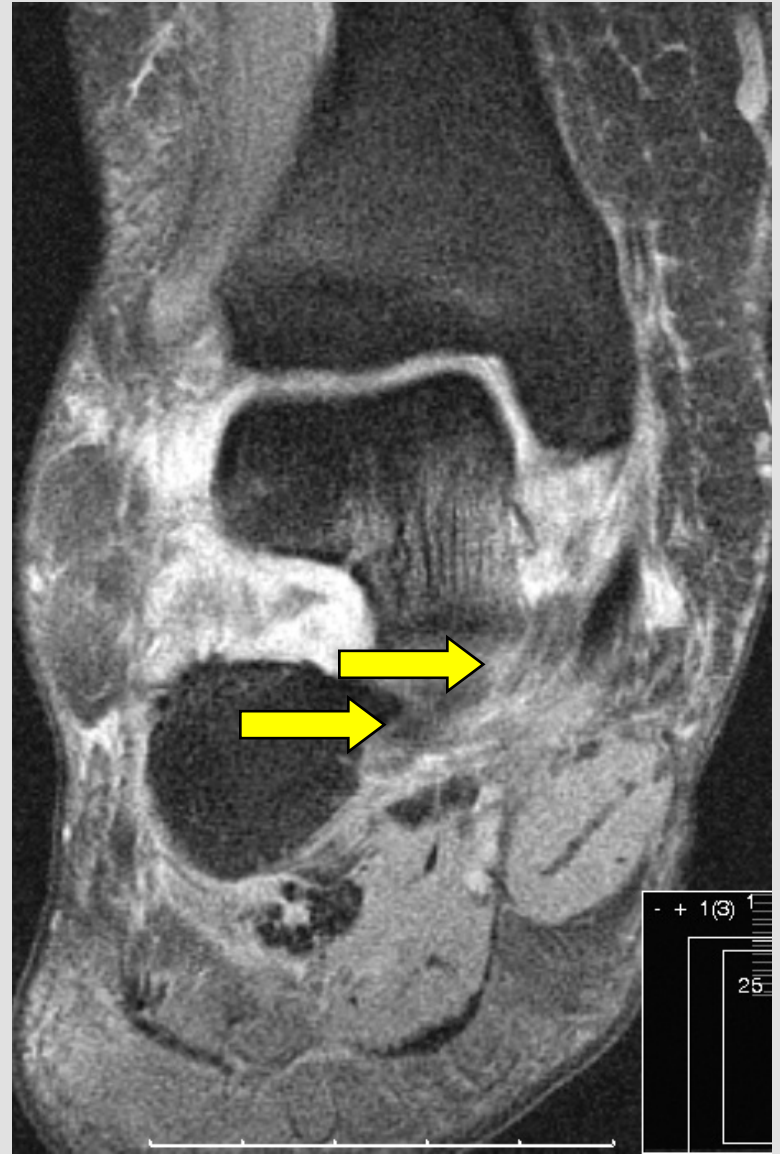
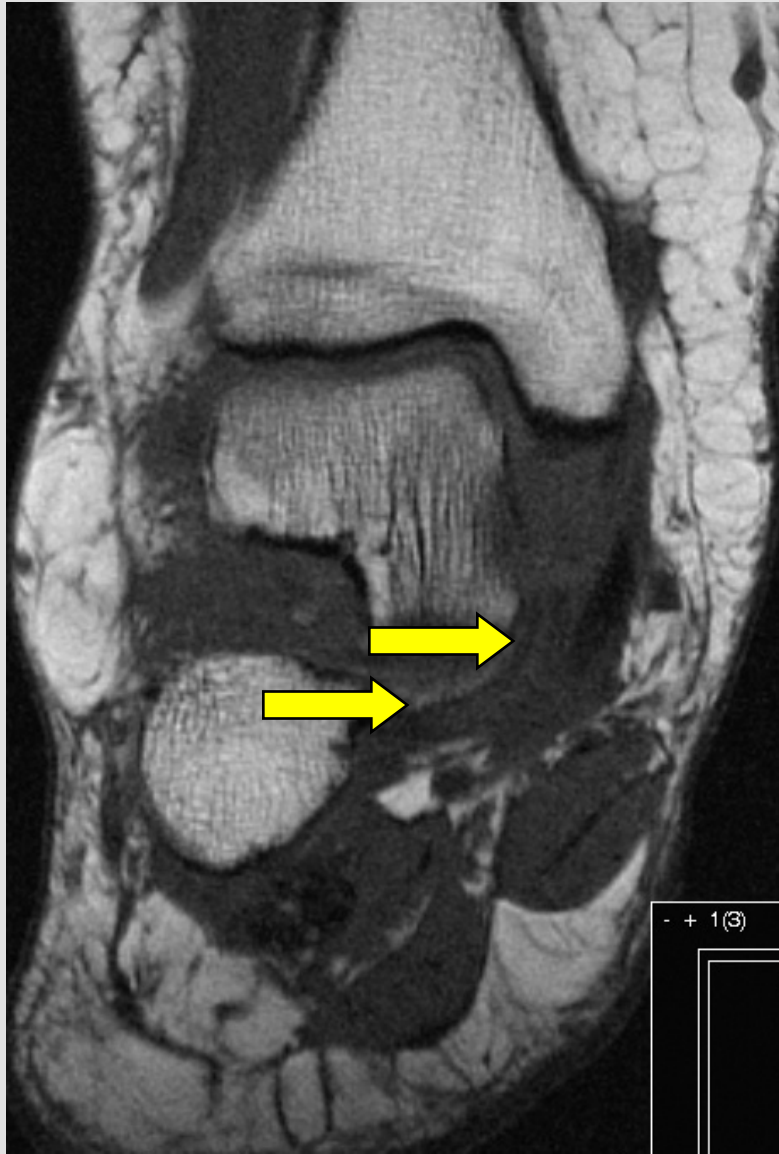
Normal springligament



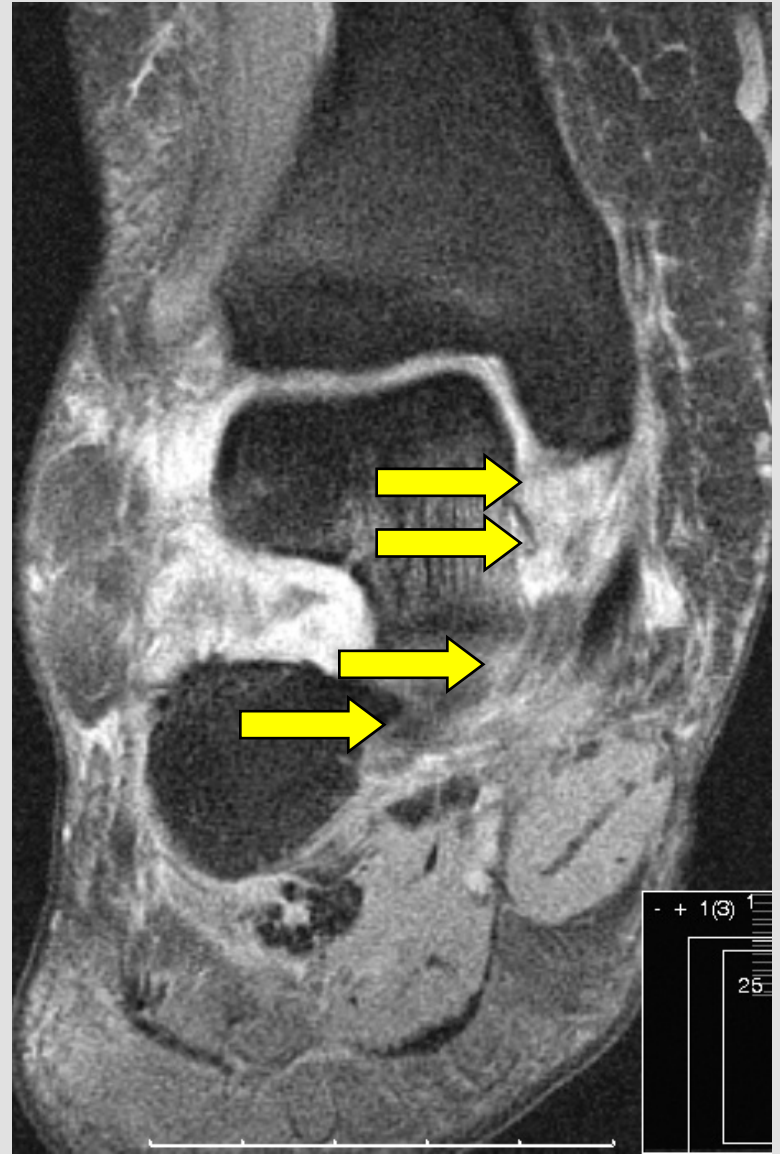
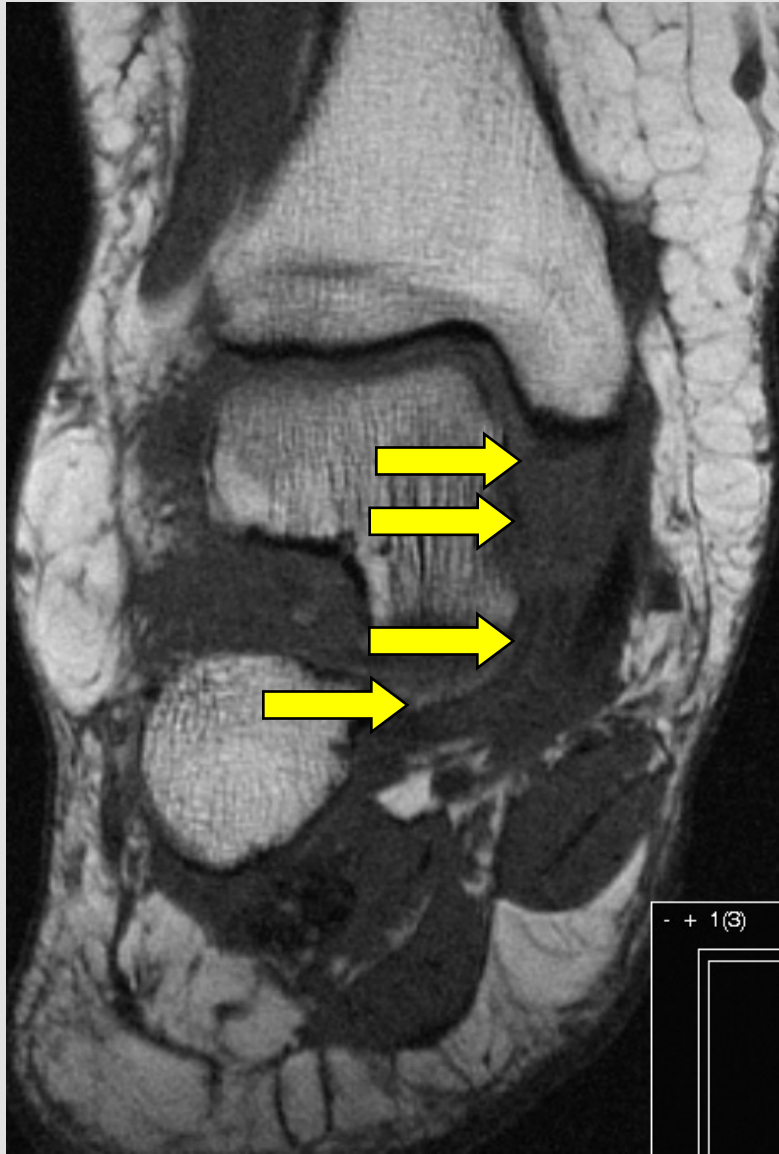
Ruptur SM och MPO springligament



Ruptur SM och MPO springligament



Ruptur SM och MPO springligament + deltoïdligament



Mediala longitudinal pelare av foten

□ Statiska stabiliserare

- Springligament (calcaneonavicular ligament)
- Deltoidligament
- Plantar fascia
- Short and long plantar ligaments
- Talocalcaneal interosseous ligament

□ Dynamiska stabiliserare

- Tibialis posterior senan
- Hälsena

Plantarfascit

- ❑ Plantarfascit eller plantaraponeurosen är vanligt hos idrottare men även hos inaktiva personer
- ❑ aktill från calcaneus främre-mediala delen
- ❑ Aponeurosens främre del övergår i de ledband som fäster i proximala tåfalangerna

Plantar fasciit Anatomi

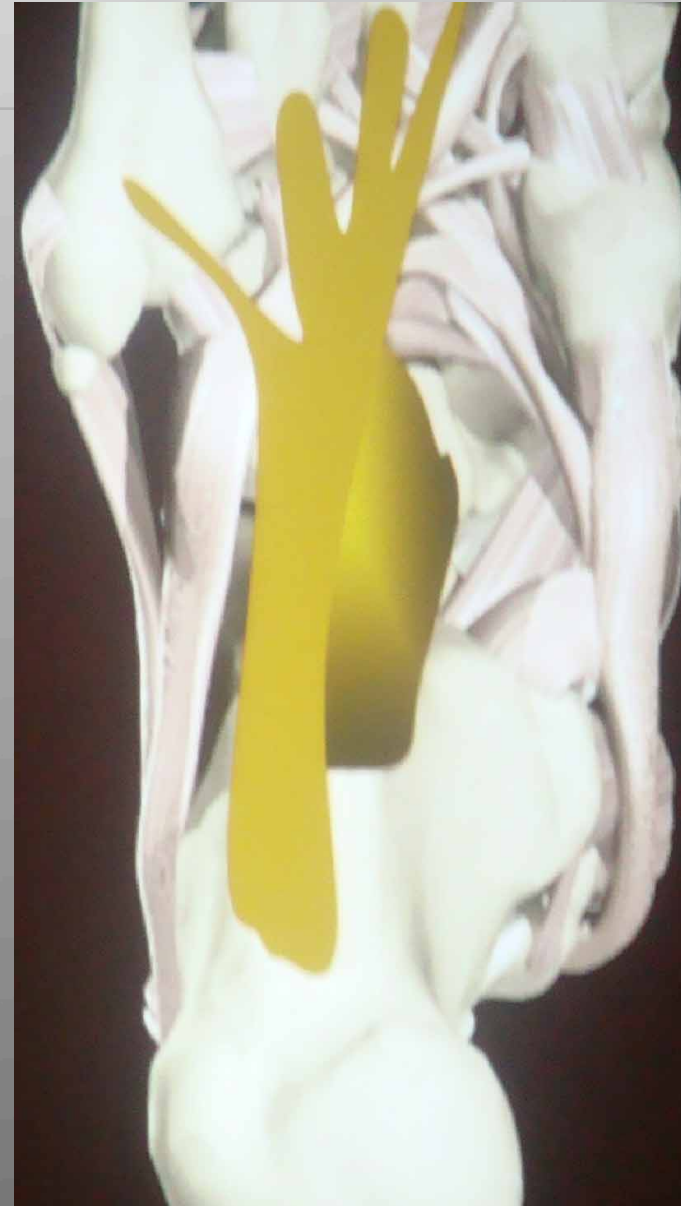


Plantarfascit Anatomi



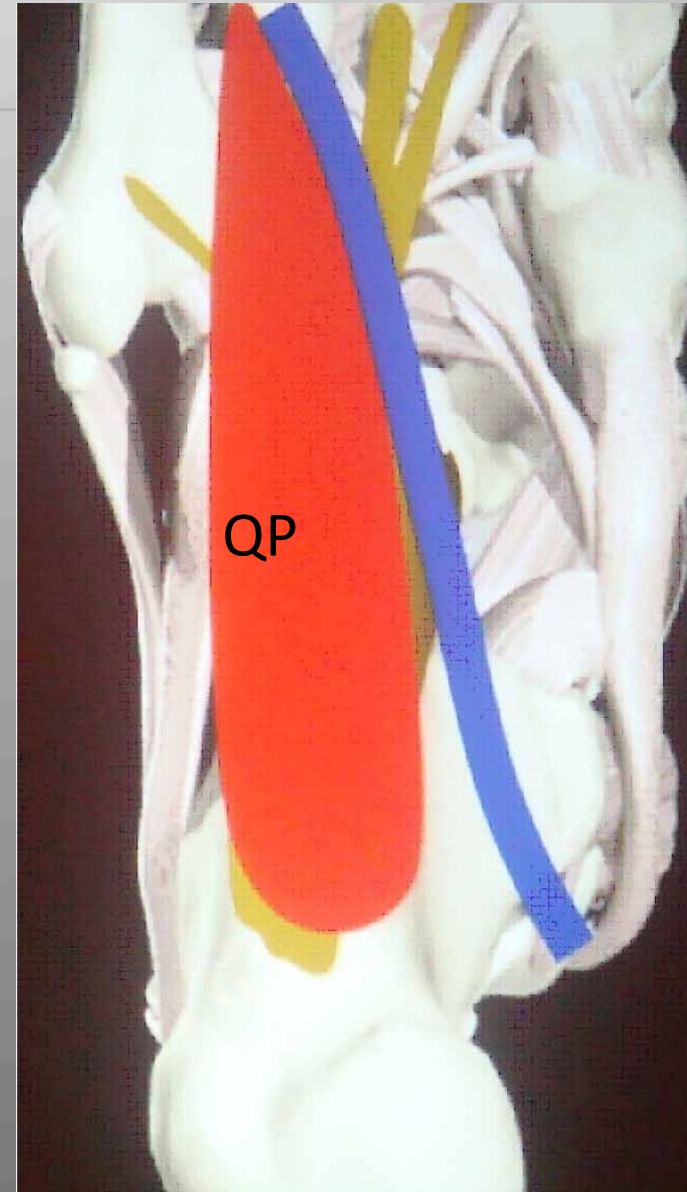
Plantarfascit Anatomi

Short plantar ligament
Long plantar ligament



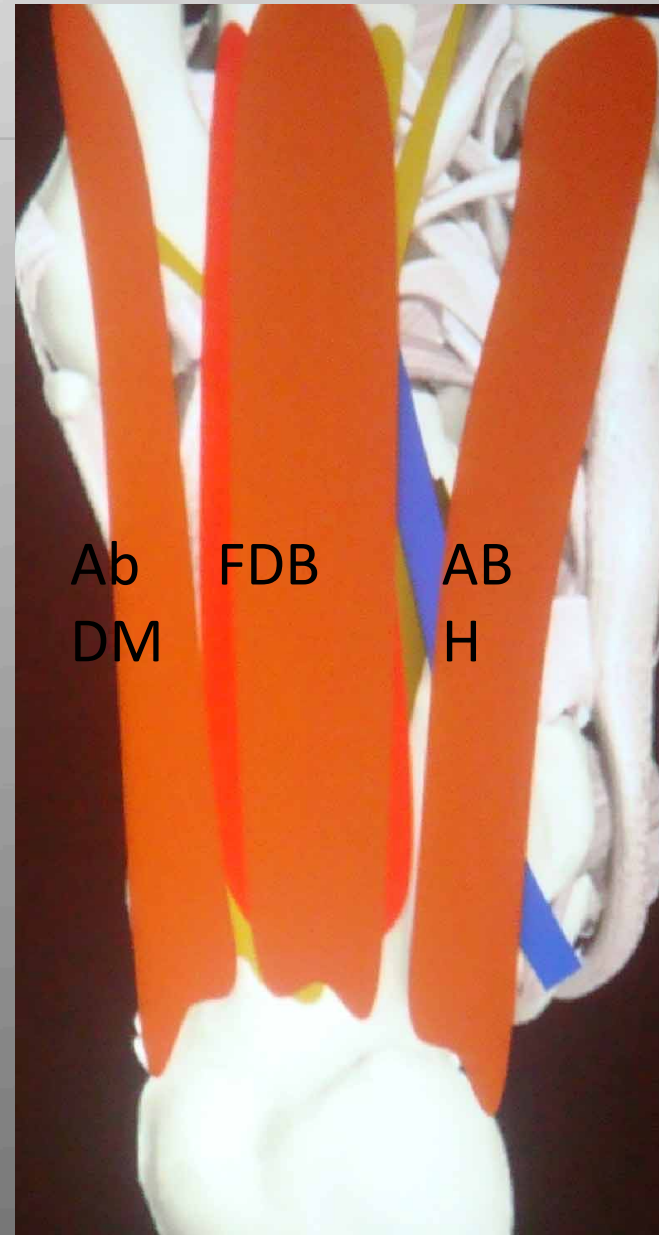
Plantarfascit Anatomi

Short plantar ligament
Long plantar ligament
Quadratus plantae



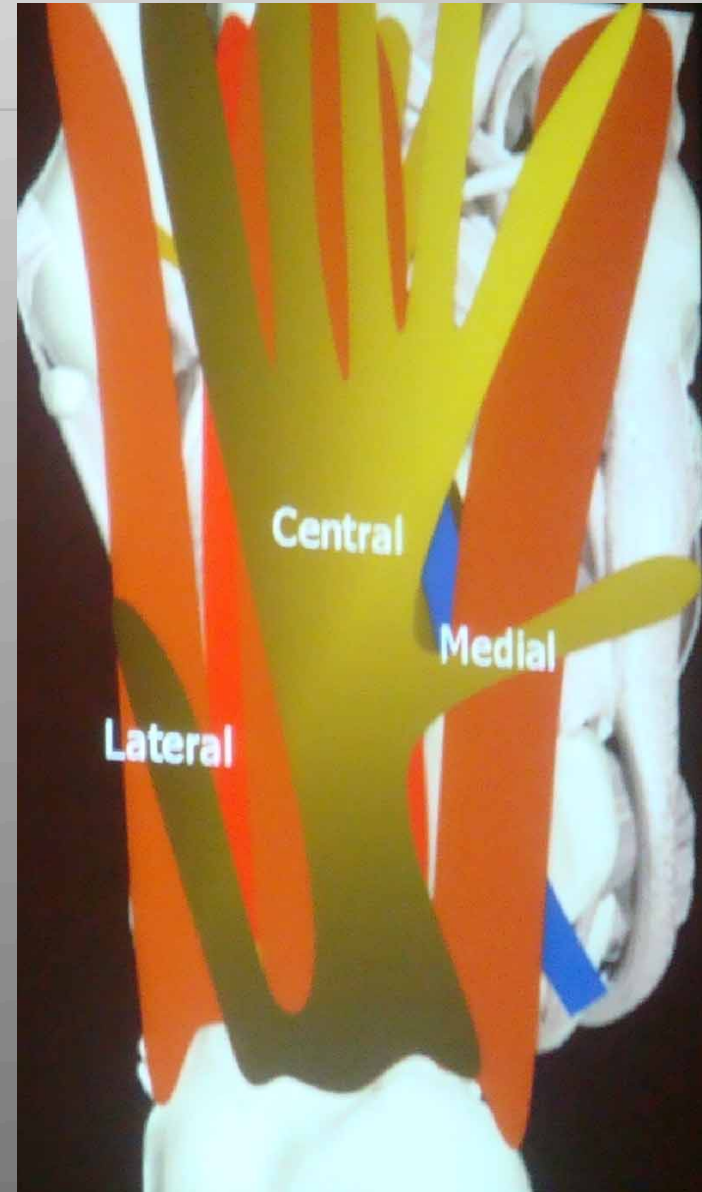
Plantarfascit Anatomi

Short plantar ligament
Long plantar ligament
Quadratus plantae (QP)
Ab DM, FDB, AB H



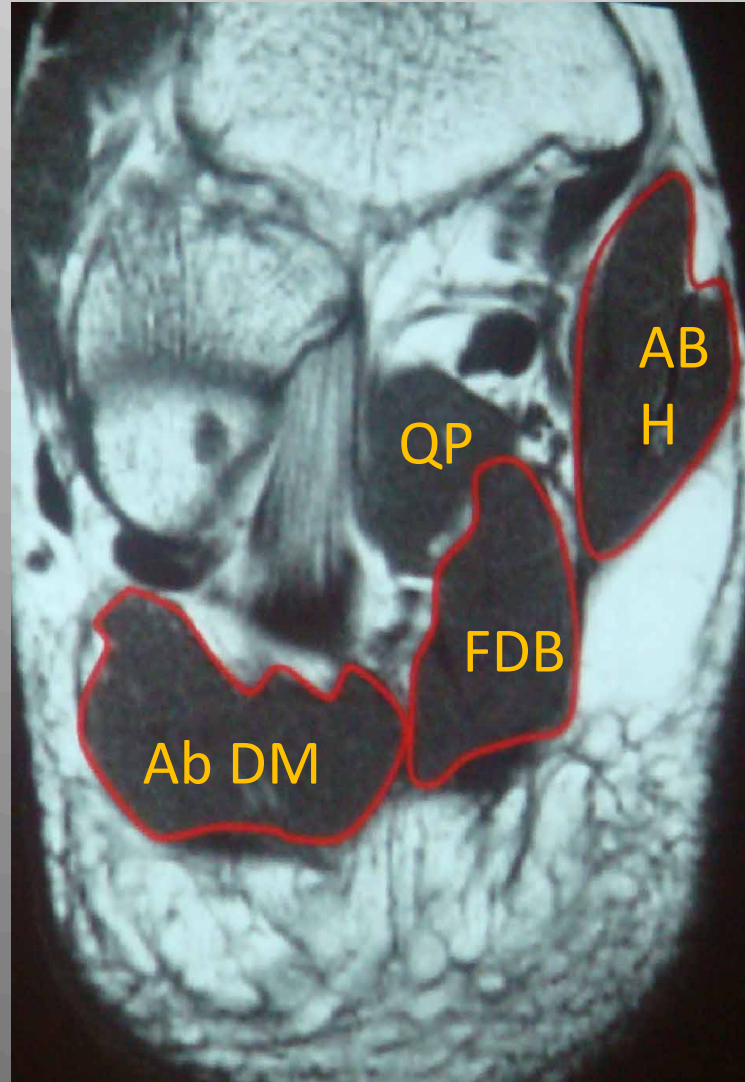
Plantarfascit Anatomi

Short plantar ligament
Long plantar ligament
Quadratus plantae
Ab DM, FDB, AB H
Plantar fascia



Plantarfascit Anatomi

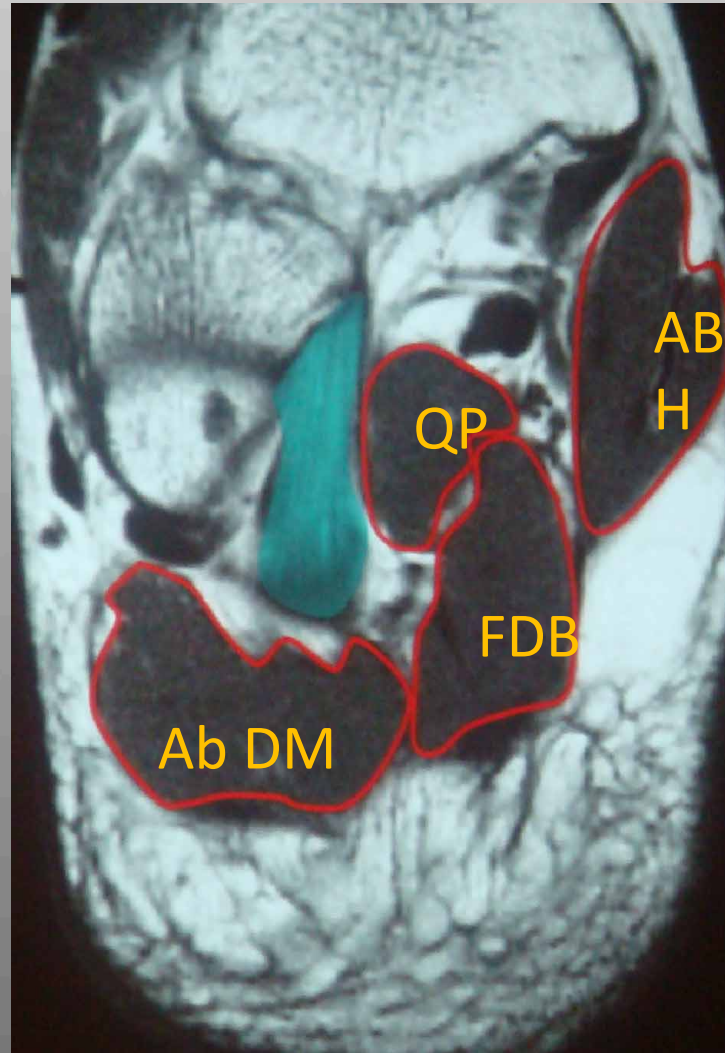
Quadratus plantae
Ab DM, FDB, AB H



Lat

Plantarfascit Anatomi

Plantar ligament



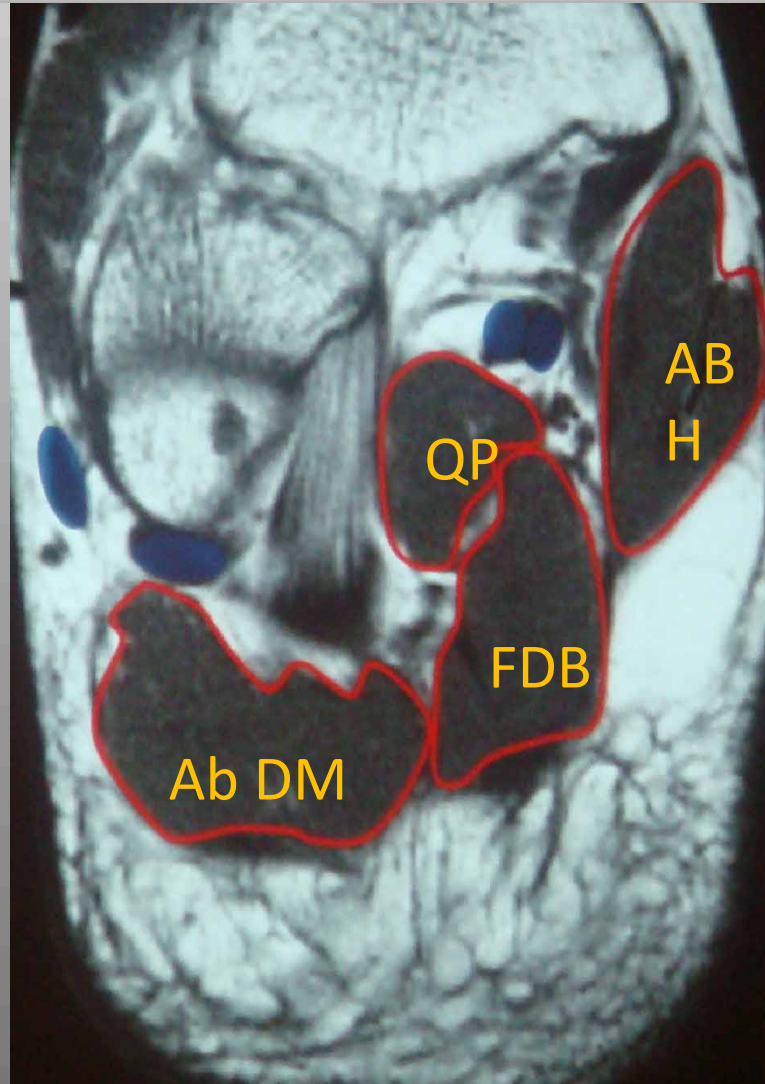
Lat

Plantarfascit Anatomi

PB

PL

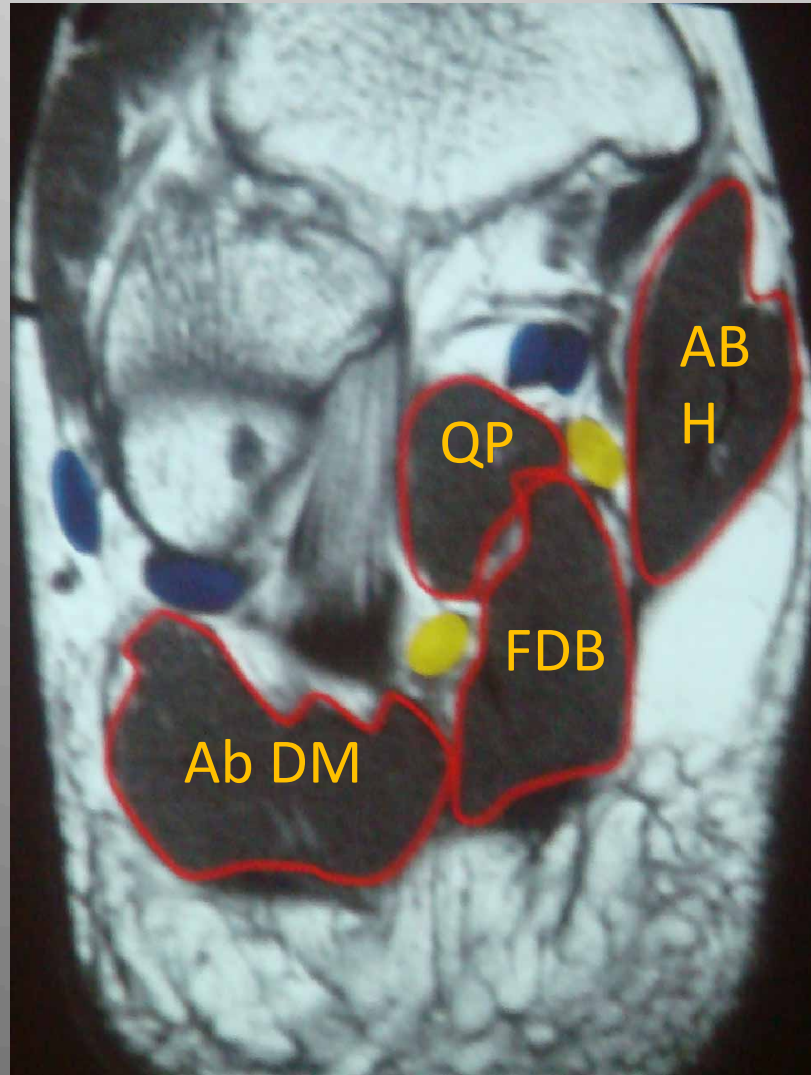
FHL



Lat

Plantarfascit Anatomi

Plantar AV



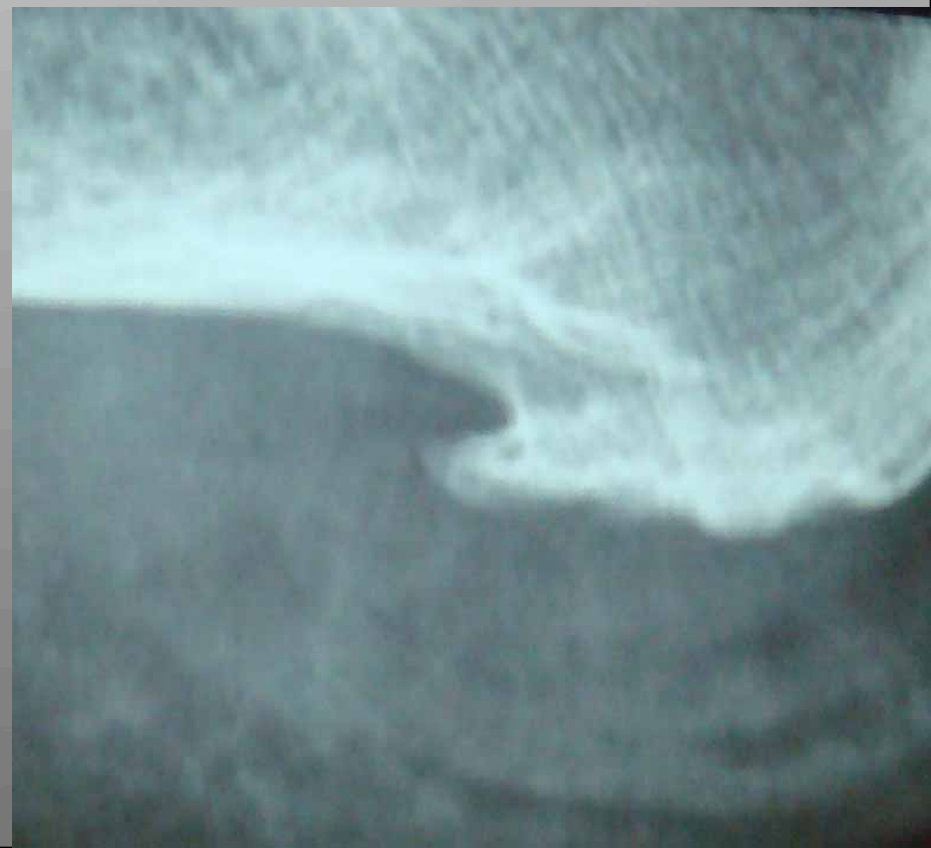
Lat

Plantarfascit

□ Diagnos:

- Klinisk: Tryckömhet vid calcaneus främre – mediala delen, ökad ömhet vid dorsalflexion av tårna
- Radiologisk: Hälsporre som kan vara en följd av inflammatoriska reaktionen men ospecifik
- MRI
- UL

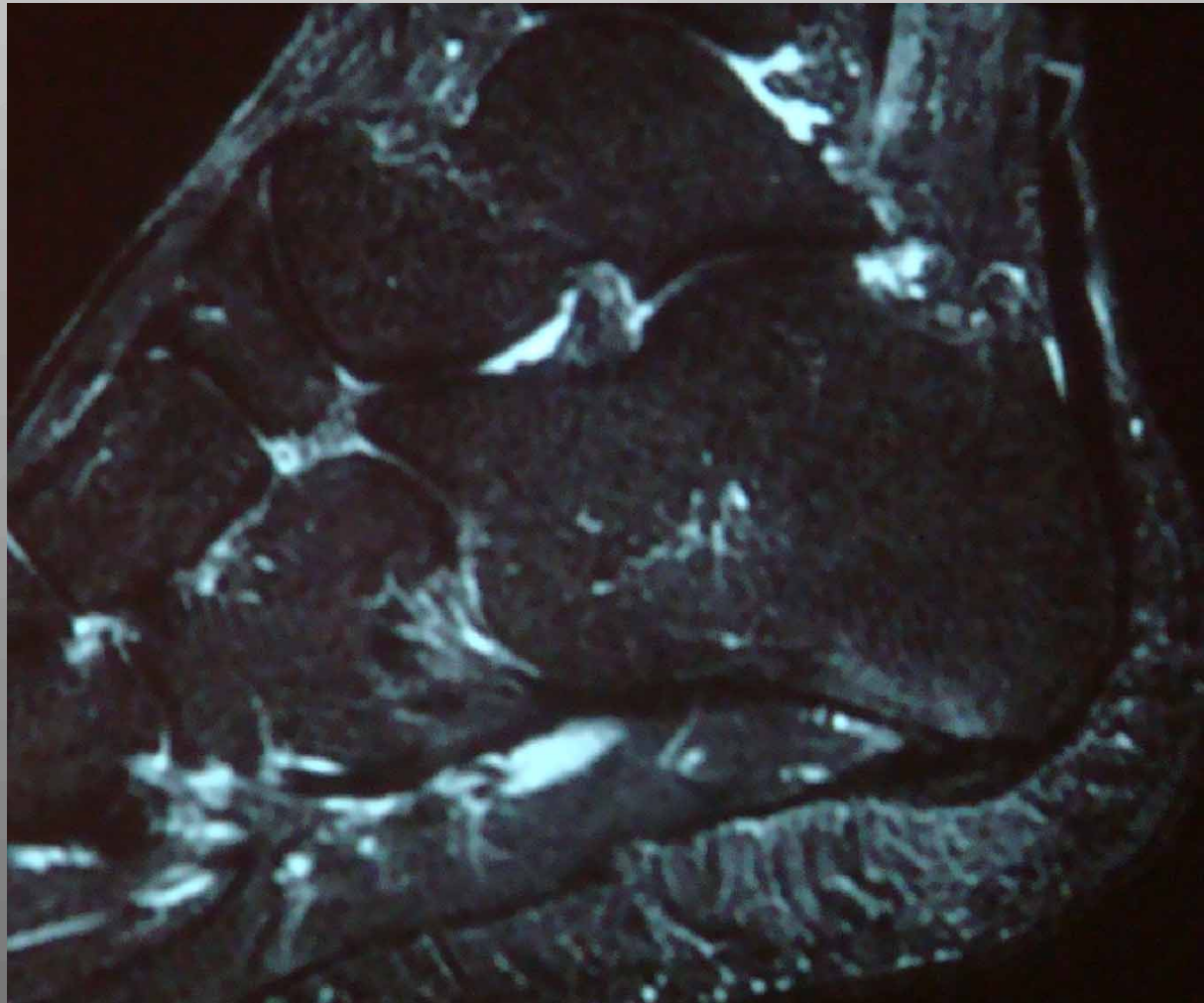
Plantarfascit



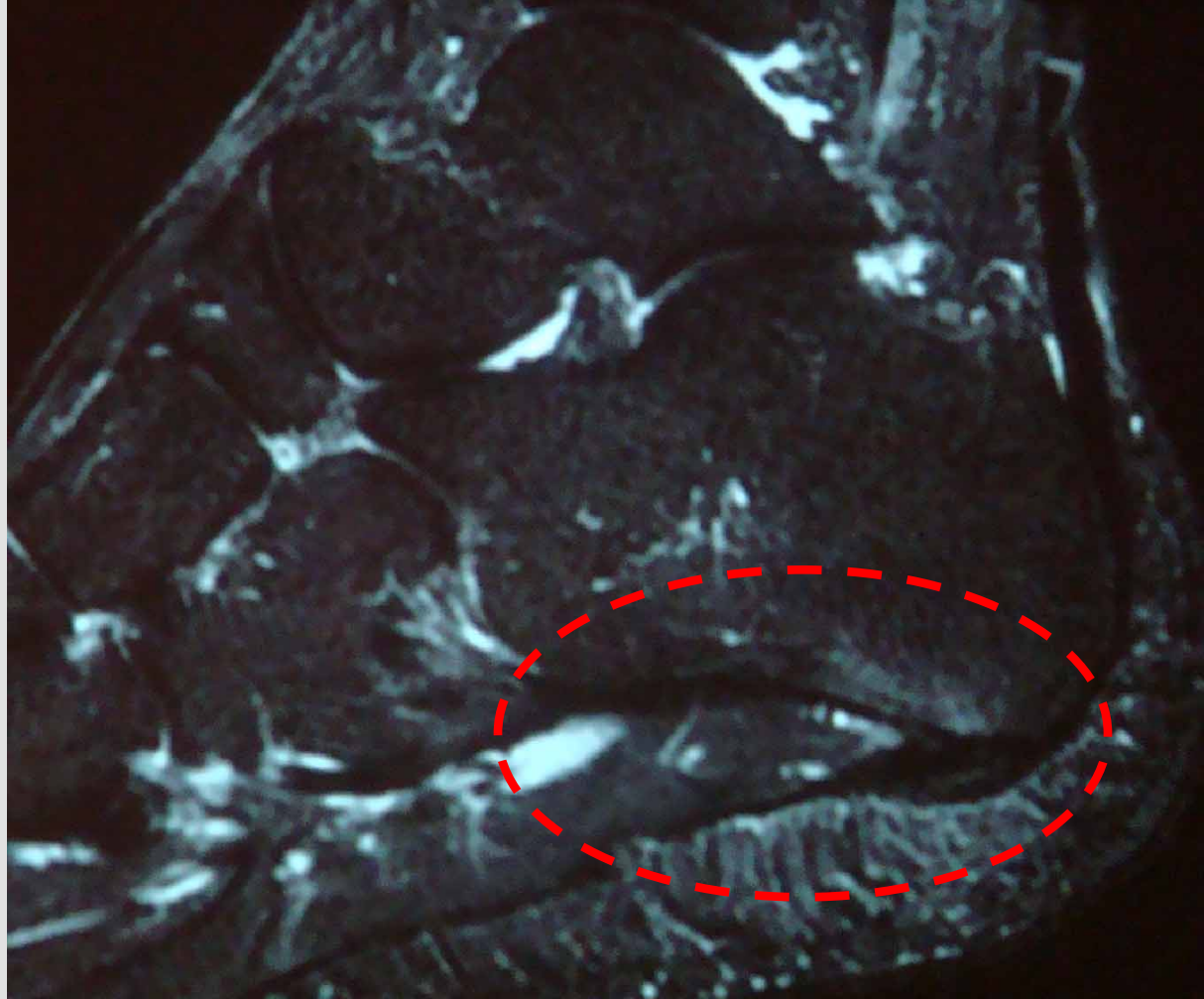
Plantarfascit



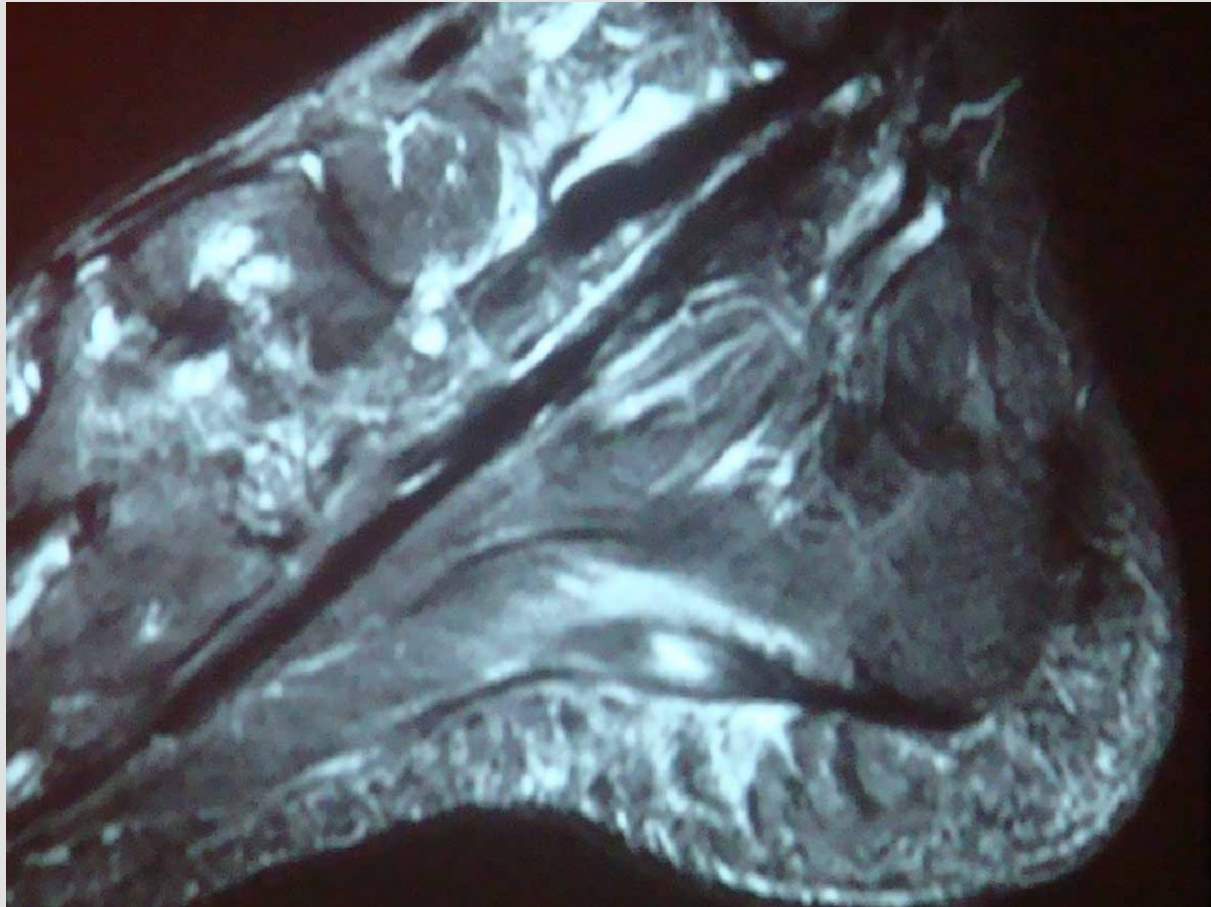
Plantarfascit



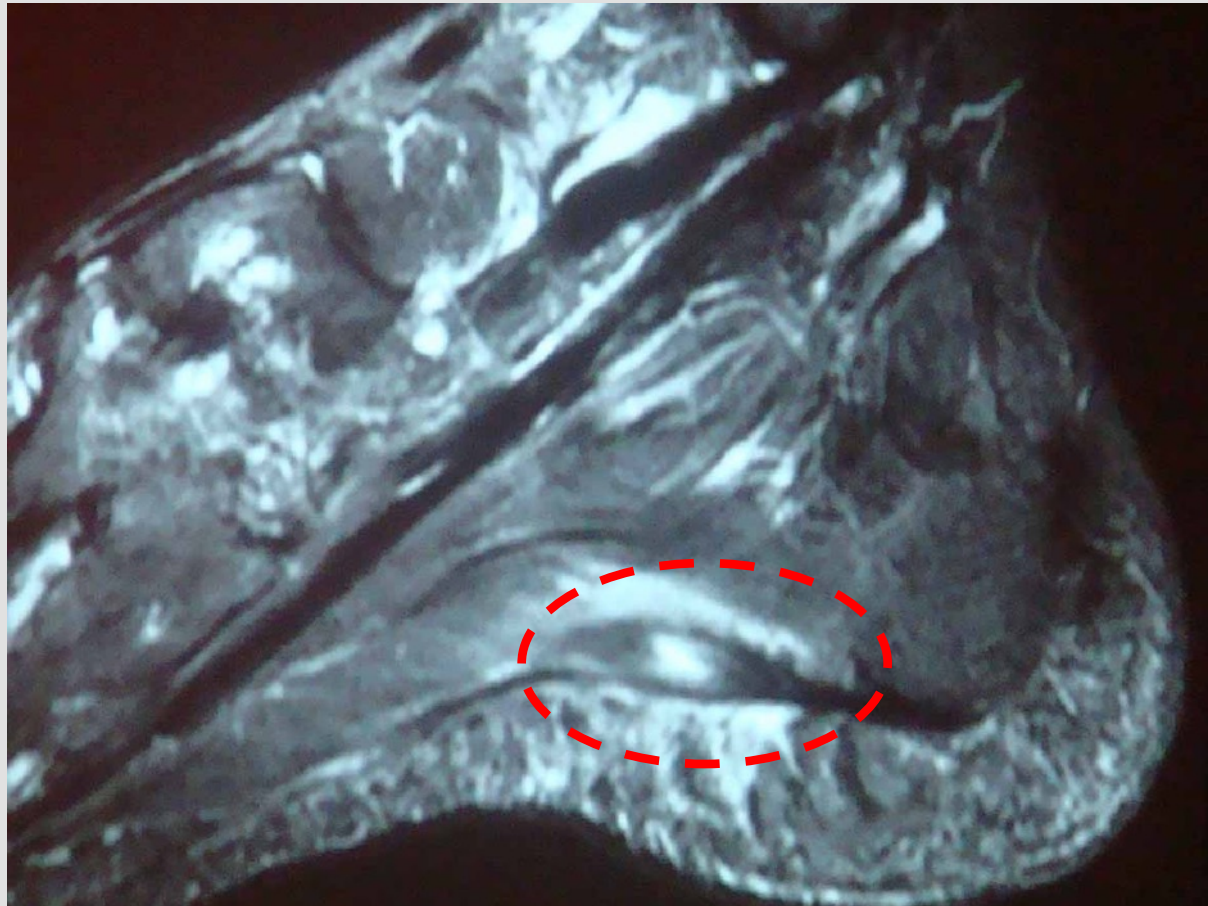
Plantar fasciit



Plantar fasciit



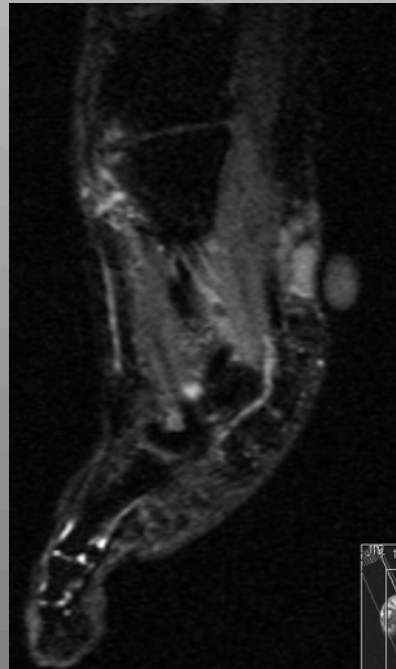
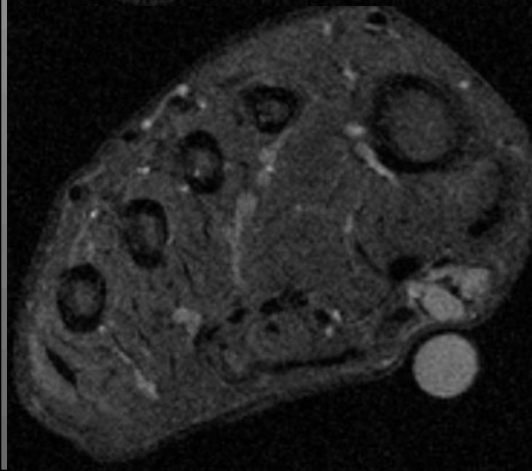
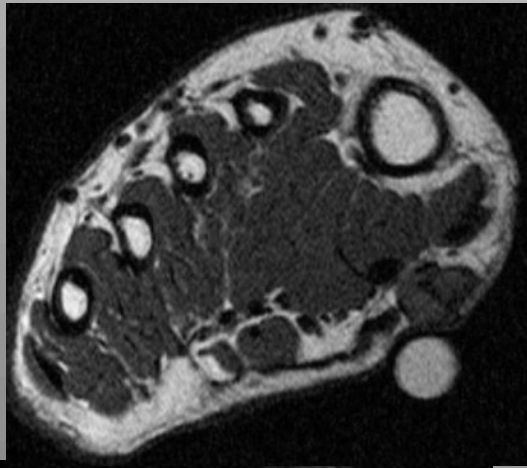
Plantar fasciit



Plantarfascit, DD

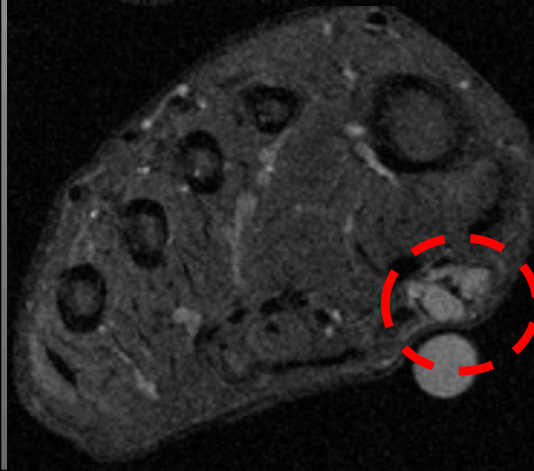
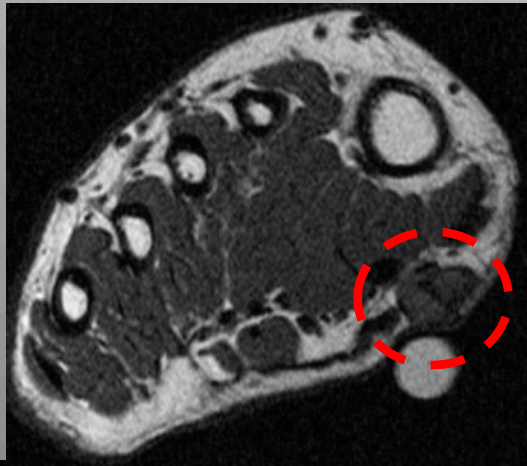
Plantarfascit, DD

26 årig kvinna, har sedan 6 mån tillbaka en resistens i fotsulan. O trauma



Plantarfascit, DD

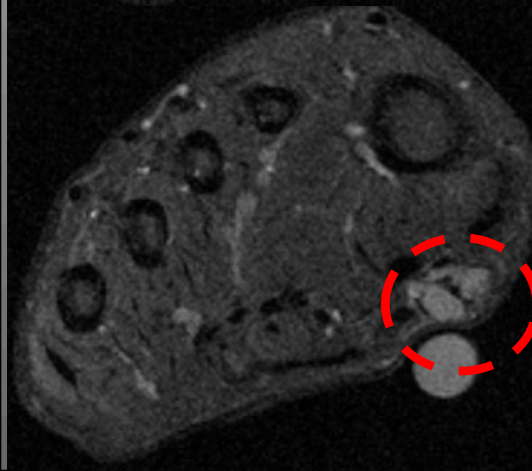
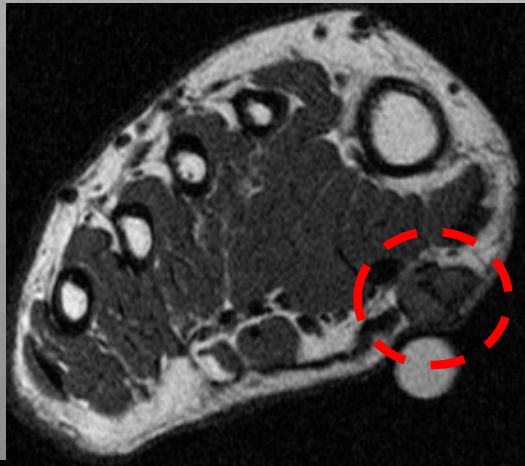
26 årig kvinna, har sedan 6 mån tillbaka en resistens i fotsulan. O trauma



Plantarfascit, DD

26 årig kvinna, har sedan 6 mån tillbaka en resistens i fotsulan. O trauma

Plantar fibromatos



Mediala longitudinal pelare av foten

□ Statiska stabiliserare

- Springligament (calcaneonavicular ligament)
- Deltoidligament
- Plantar fascia
- Short and long plantar ligaments
- Talocalcaneal interosseous ligament

□ Dynamiska stabiliserare

- Tibialis posterior senan
- Hälsena

Tibialis posteriorosenan dysfunktion / insufficiens (PTTI)

- Åldersgruppen över 40 år
- Kvinnor
- Obesitas
- Hypertoni
- Systemsjukdomar - DM, RA, gikt, steroider

Tibialis posteriorsenan dysfunktion / insufficiens (PTTI)

- Stödjande funktion av mediala pelaren, inversion av foten och plantar flexion av hälen
- Planovalgus kan vara etiologi till dysfunktionen
- Springligament ruptur
- Iatrogen – steroidinjektioner, medial fotkirurgi
- Accessory naviculare

Tibialis posteriorosenan dysfunktion / insufficiens (PTTI)

Symtom

- Belastningssmärta och svullnad nedom mediala malleolan
- Vid uttalad valgusställning kan det dessutom uppstå inklämningssmärta lateralt när lat malleolens spets går emot calcaneus
- Plattfothet, utvecklas inom loppet av 1/2 till 1 år

Tibialis posterior senan dysfunktion / insufficiens (PTTI)



Tibialis posteriorosenan dysfunktion / insufficiens (PTTI)

"Too many toes sign "

Valgusställningen och
abduktionen av framfoten
gör att fler än normalt av
tårna ses lateralt när man
ser på fötterna bakifrån

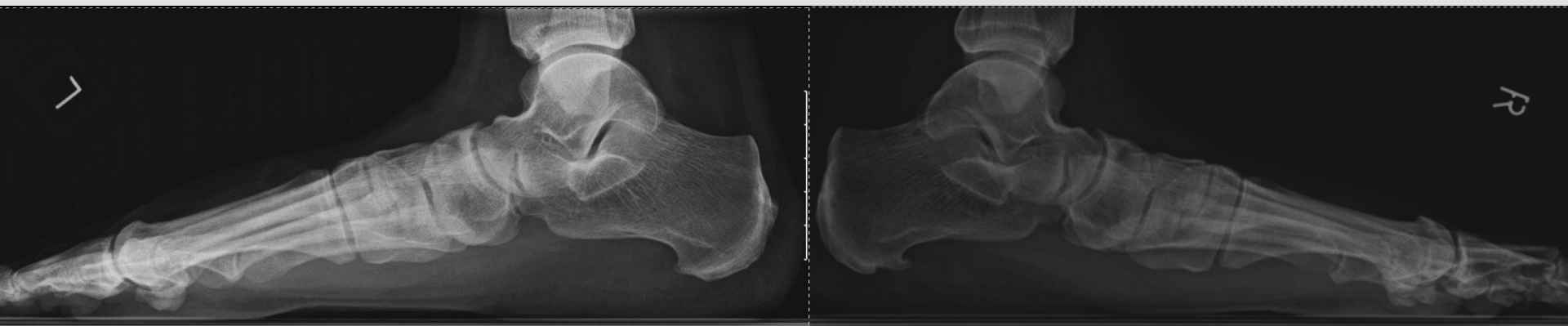


Tibialis posteriorosenan dysfunktion / insufficiens (PTTI)

Radiologi

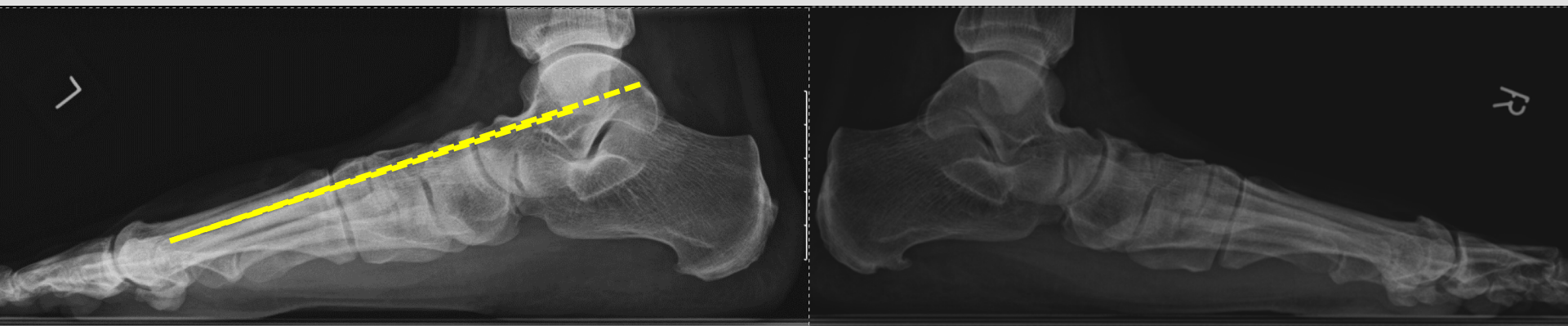
- Förutom slätröntgen, behövs inte...
- Ibland kan diagnosen ändå vara osäker och då ger MR det säkraste resultatet
- Ultraljud? Sentendinos- eller ruptur

Imaging



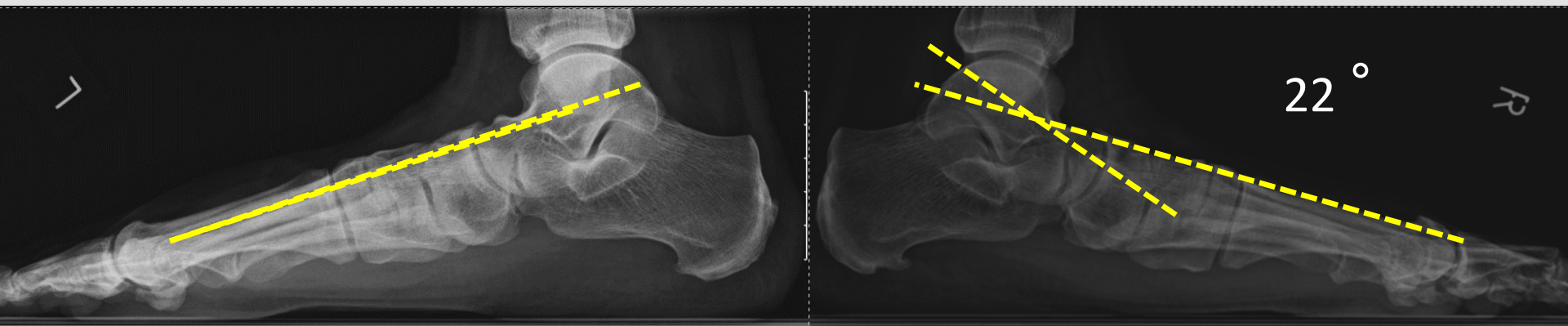
Talus – 1 st MT angle (Meary' s angle) – normal = 0

Imaging



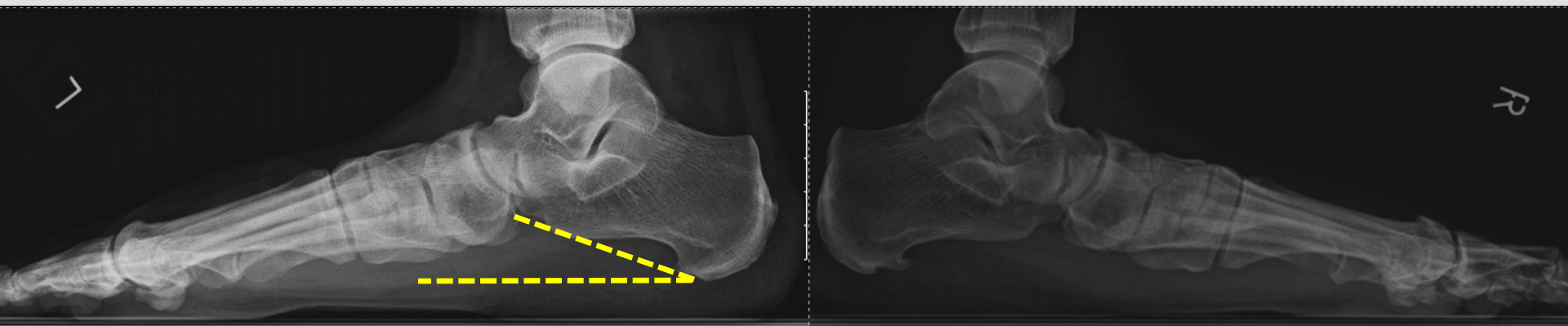
Talus – 1 st MT angle (Meary' s angle) – normal = 0

Imaging



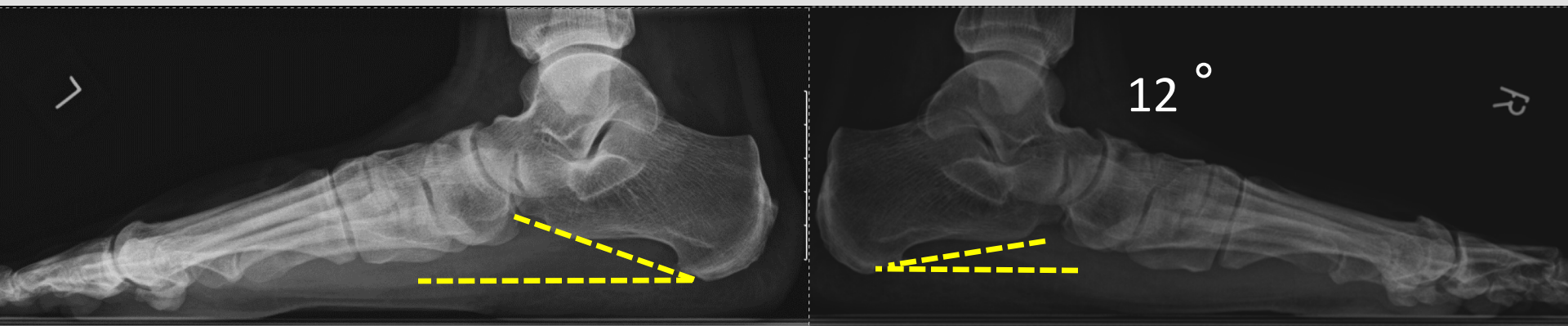
Talus – 1 st MT angle (Meary' s angle) – normal = 0

Imaging



Calcaneal pitch – normal = 20-25°

Imaging



Calcaneal pitch – normal = 20-25°

Imaging



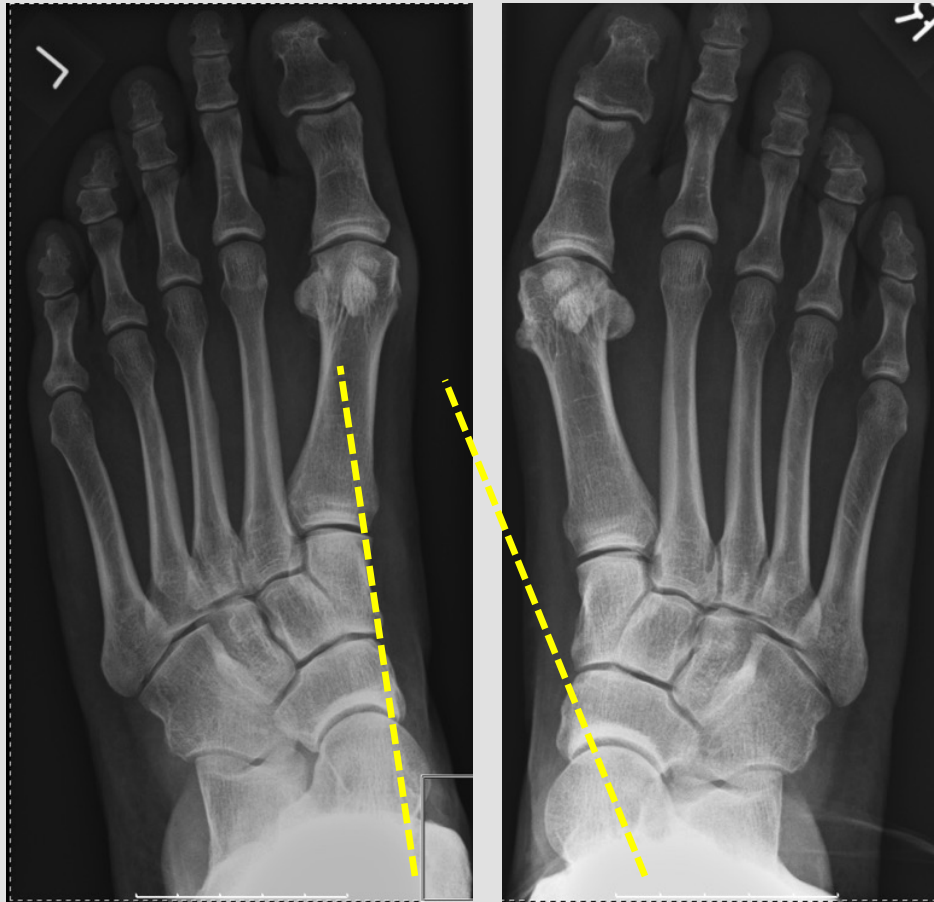
Talus längsaxel

Imaging



Talus längsaxel

Imaging



Talus längsaxel

PTT och springligament patologi

- MR fynd

- ❑ Accessory / cornuate navicular =
os tibialis externum

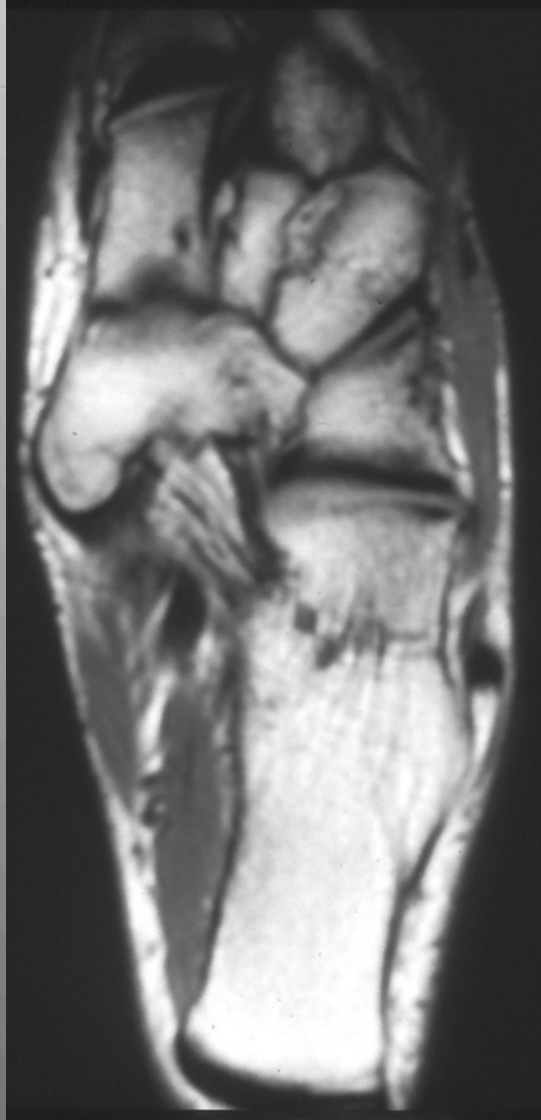
Accessory/cornuate, navicular



Accessory/cornuate, navicular

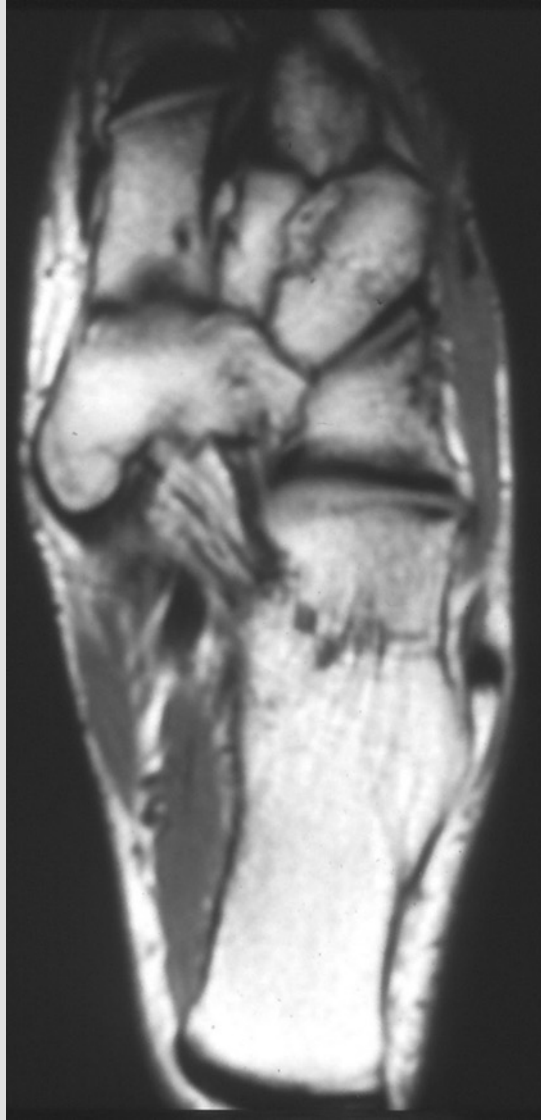


Accessory/cornuate, navicular



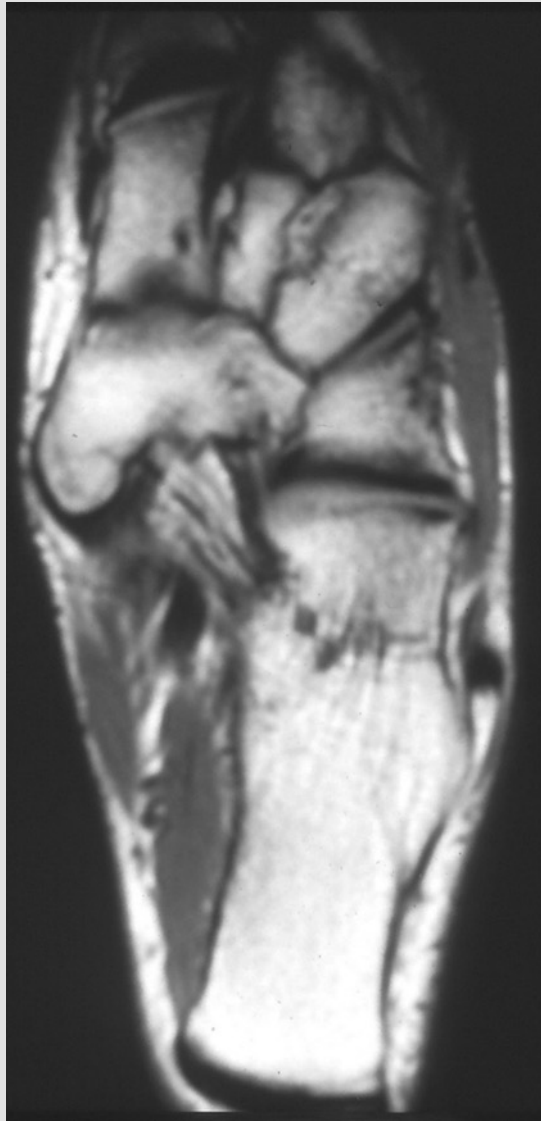
Ingen ruptur + cornute os navicular

Accessory/cornuate, navicular



Ingen ruptur + cornute os navicular

Accessory/cornuate, navicular

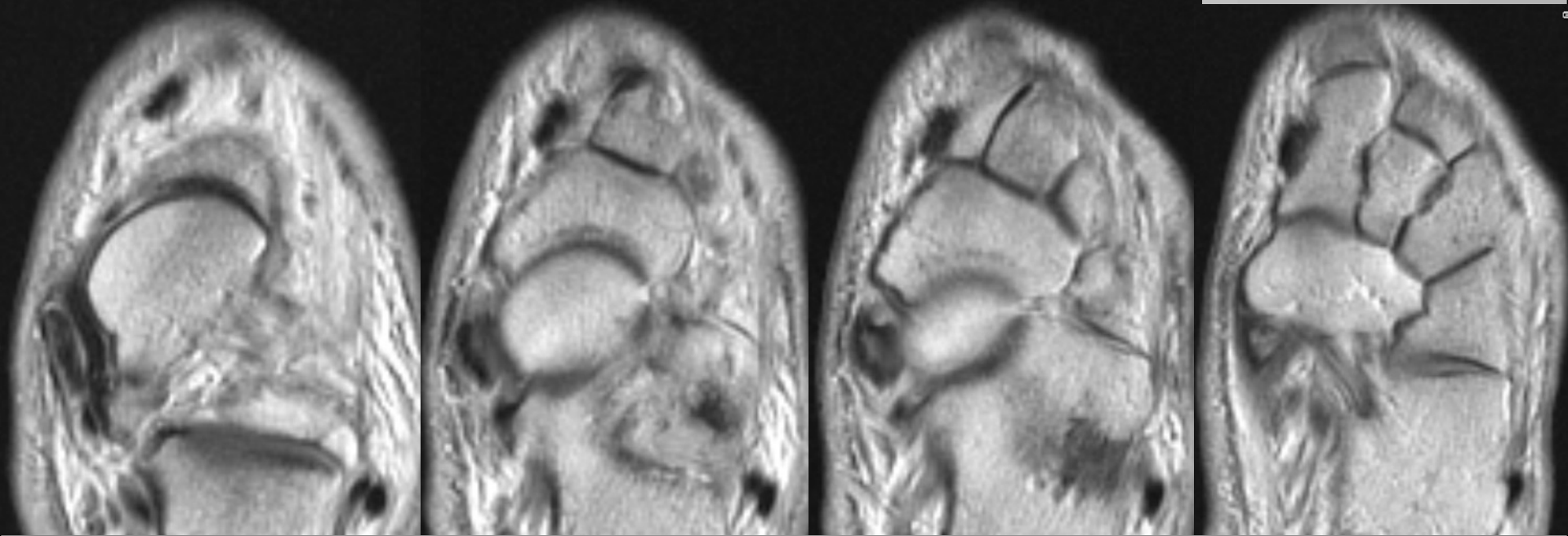


Ingen ruptur + cornute os navicular

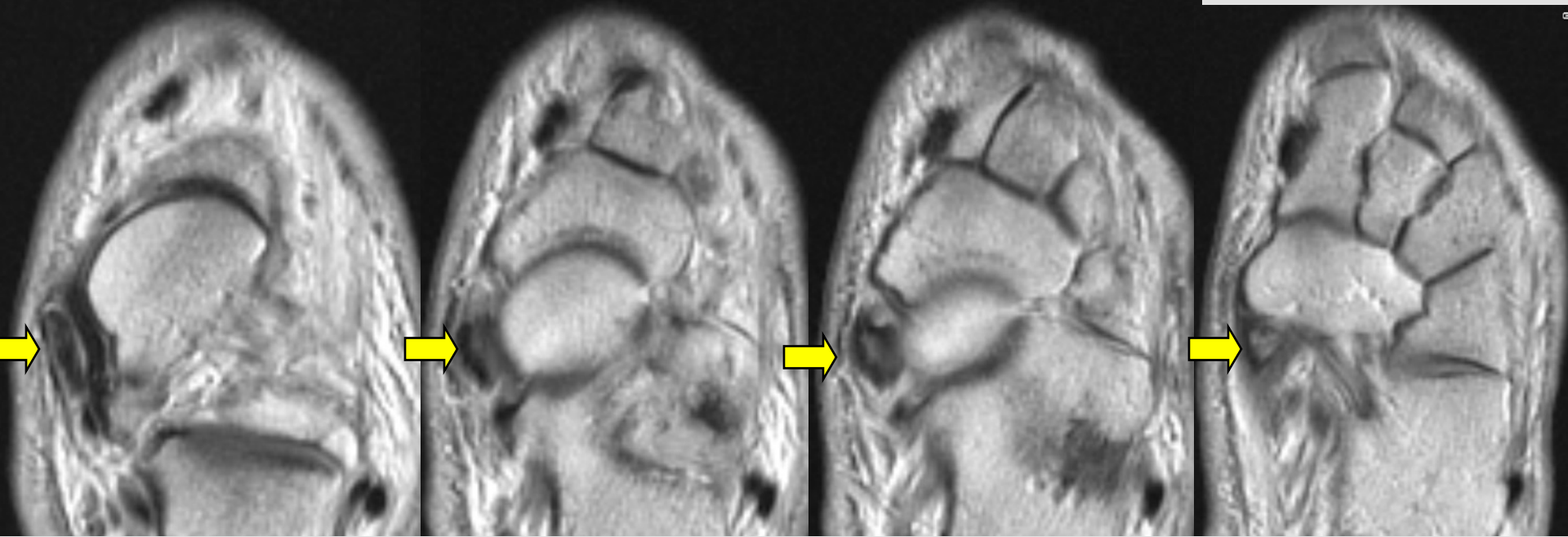


Ruptur + cornute os navicular

Accessory/cornuate, navicular



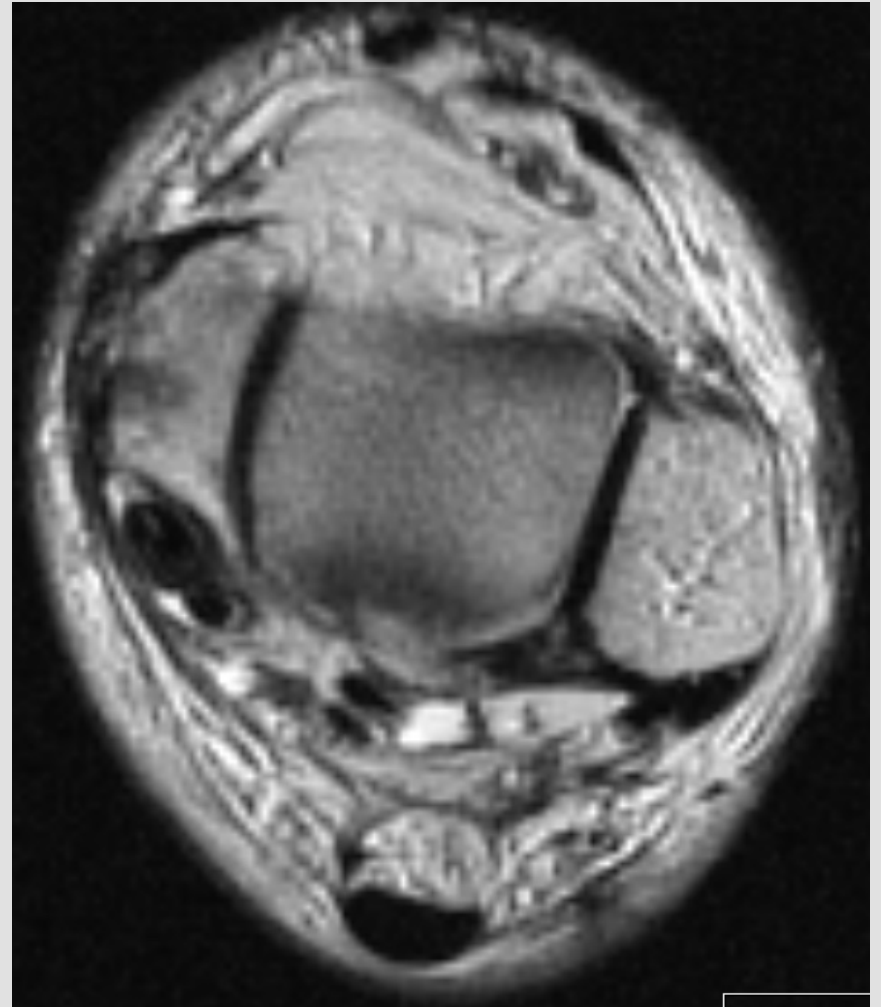
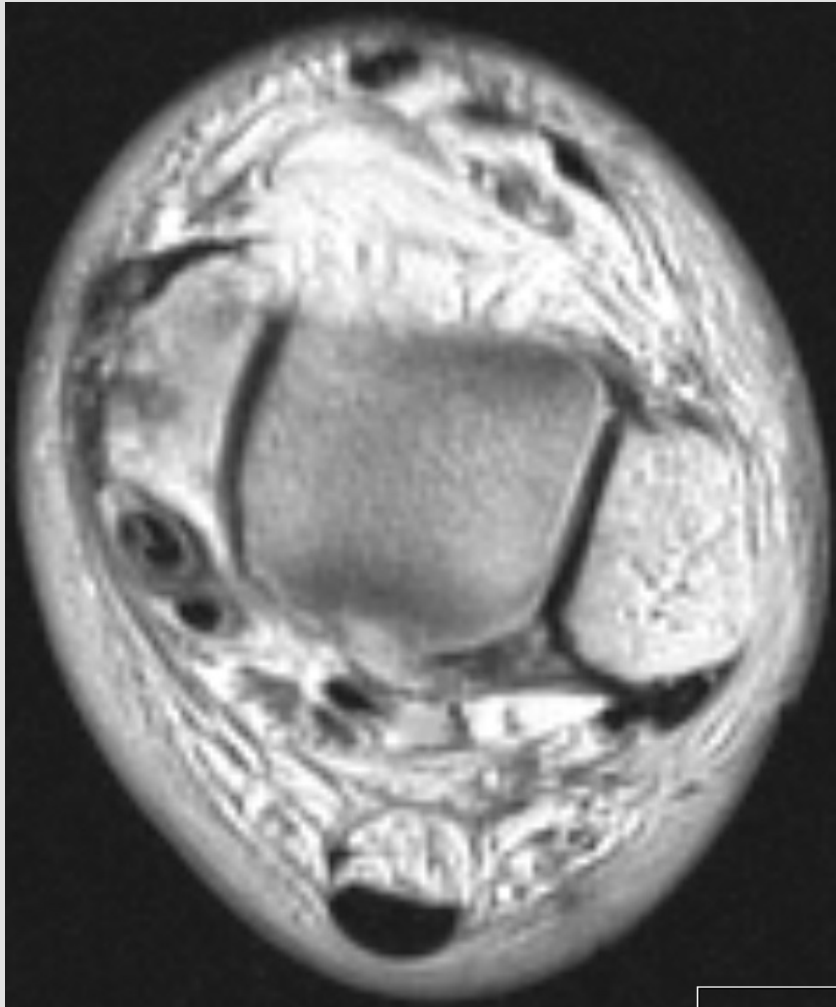
Accessory/cornuate, navicular



Partiell ruptur av PTT + cornute os navicular

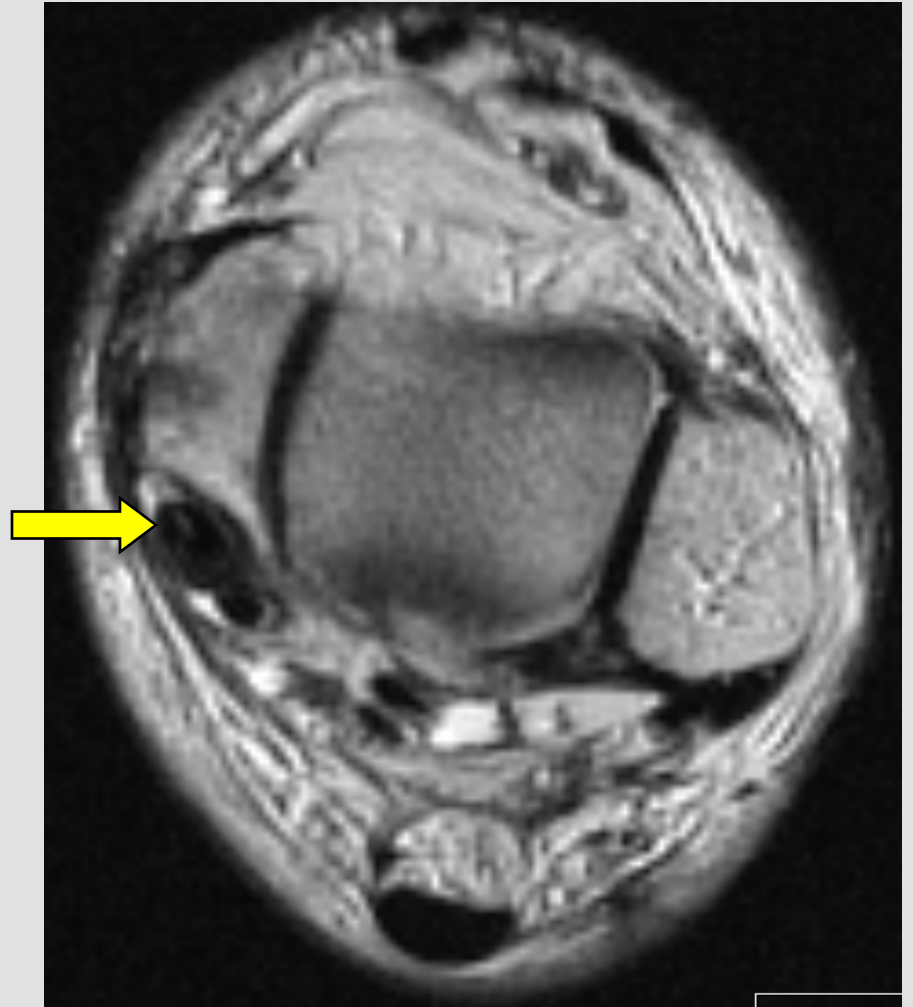
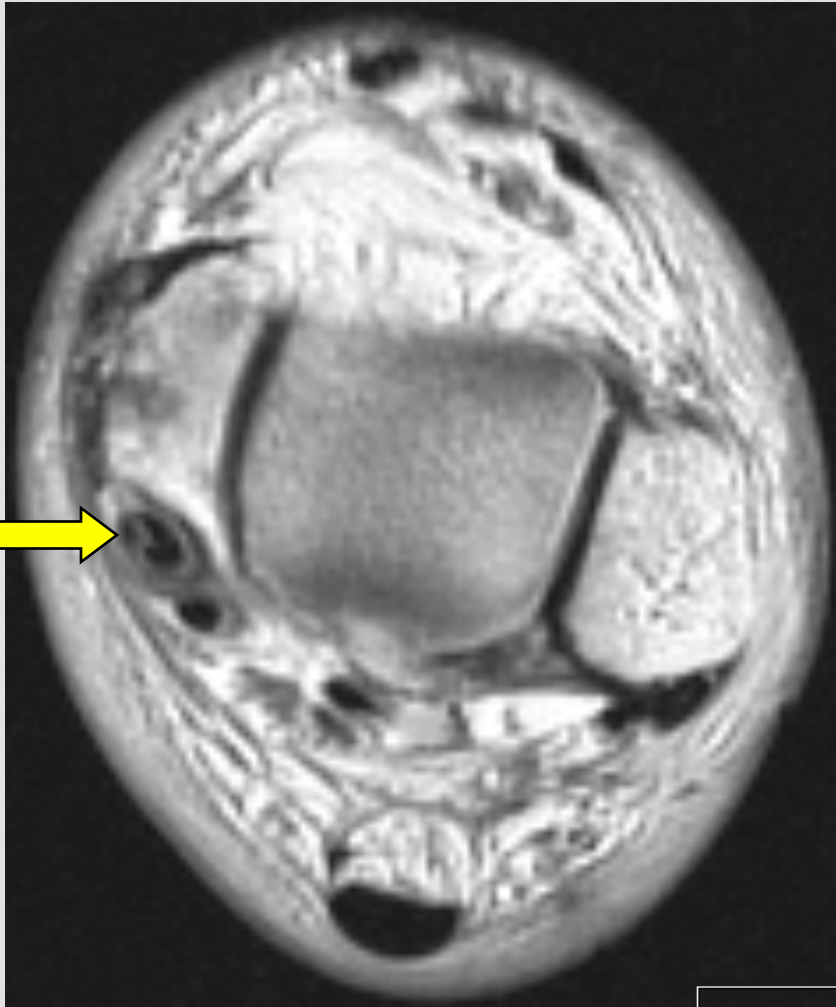
Partiell ruptur av PTT 1

Diabetiker med ett par månaders anamnes på oförmåga att stå på tå med nedsjunket fotvalv, misstänkt tib post insufficiens.



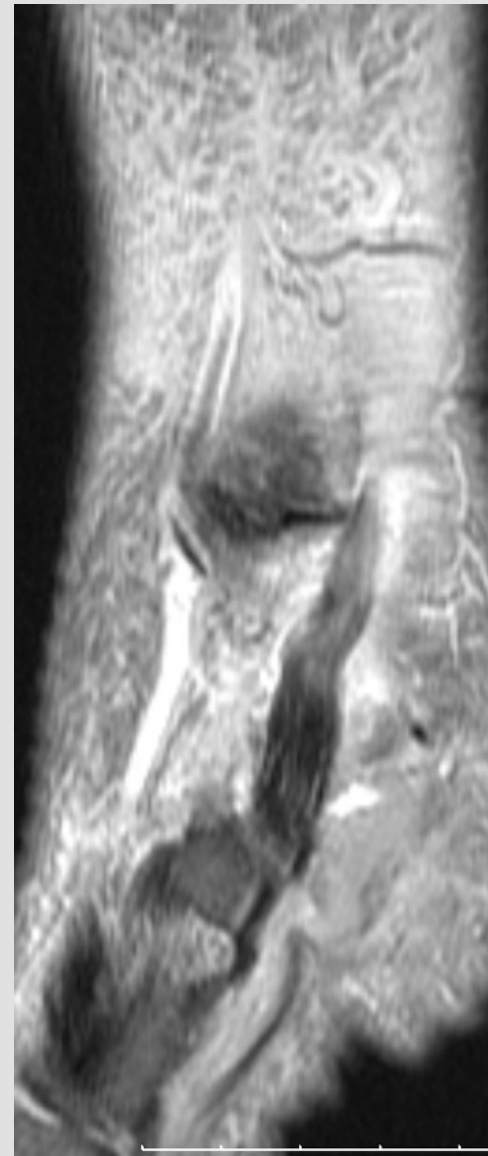
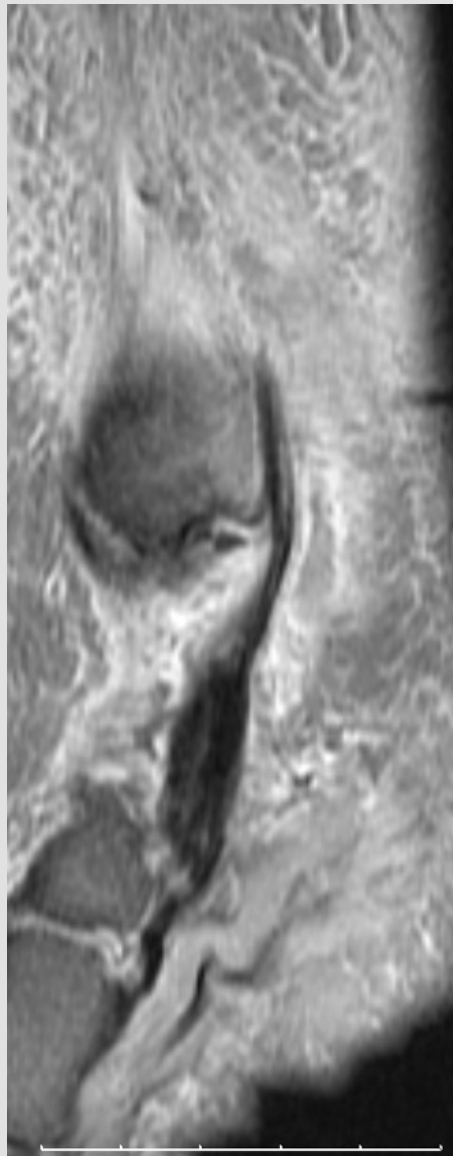
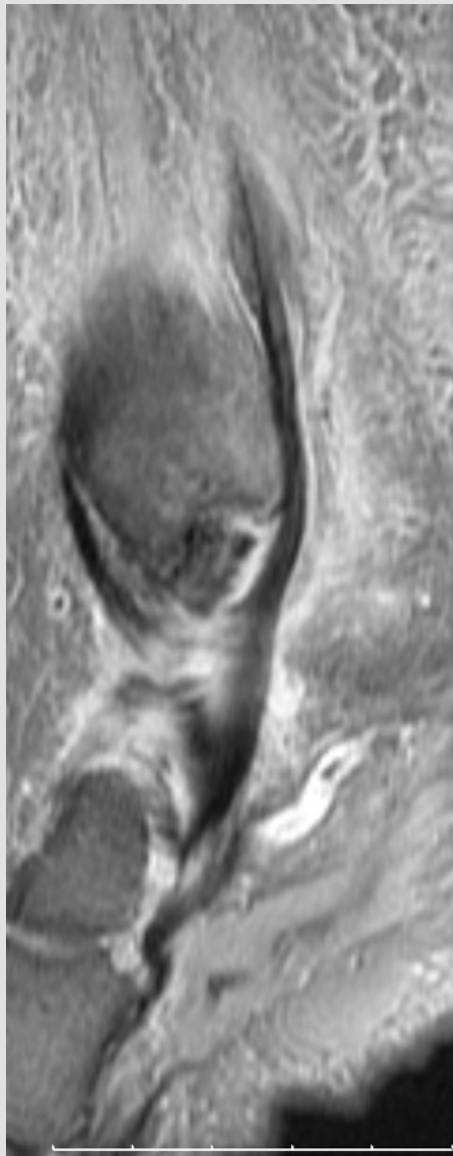
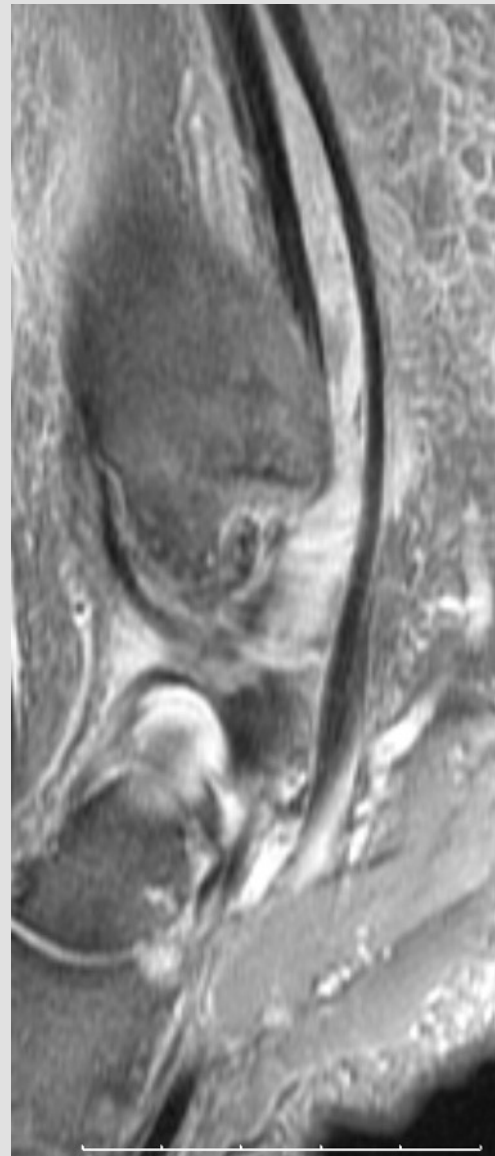
Partiell ruptur av PTT 1

Diabetiker med ett par månaders anamnes på oförmåga att stå på tå med nedsjunket fotvalv, misstänkt tib post insufficiens.



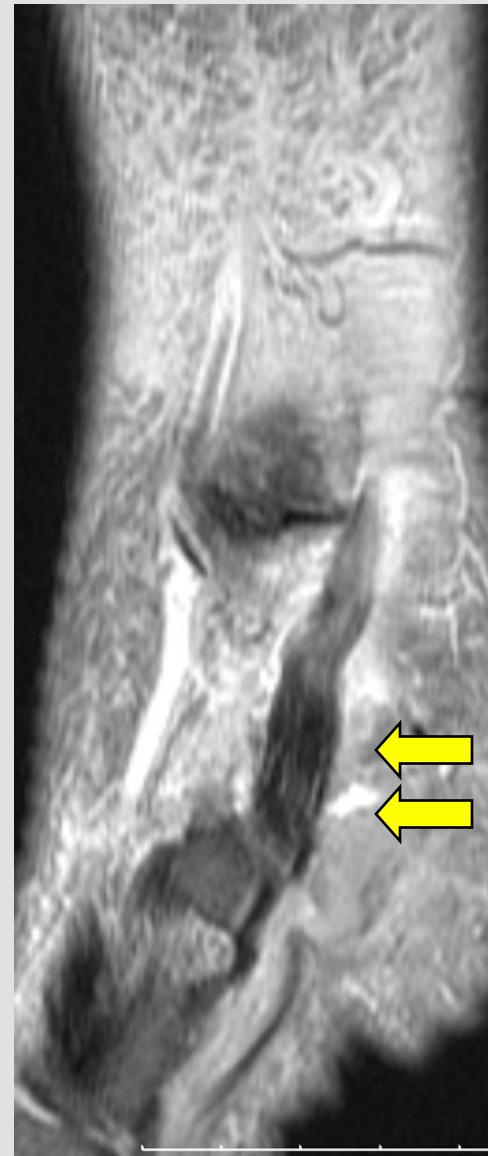
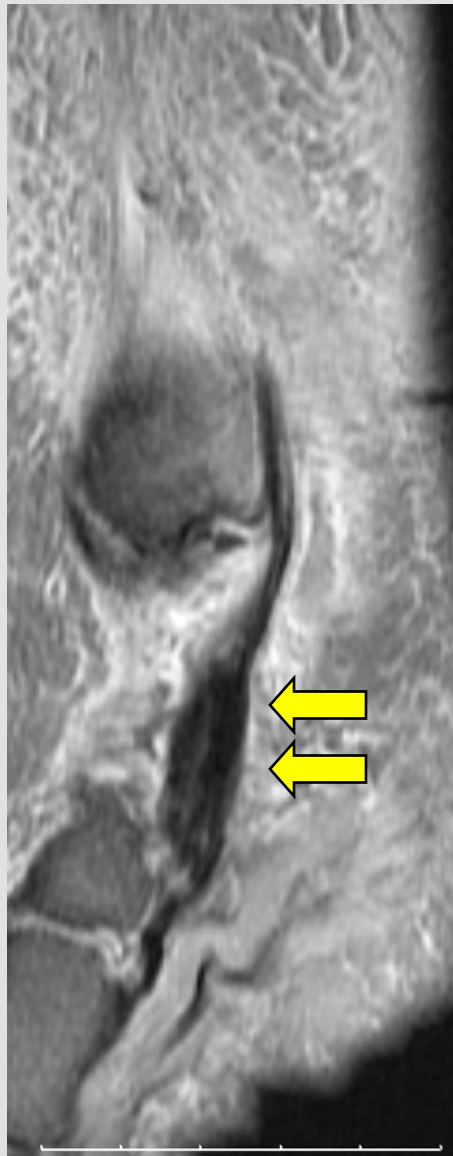
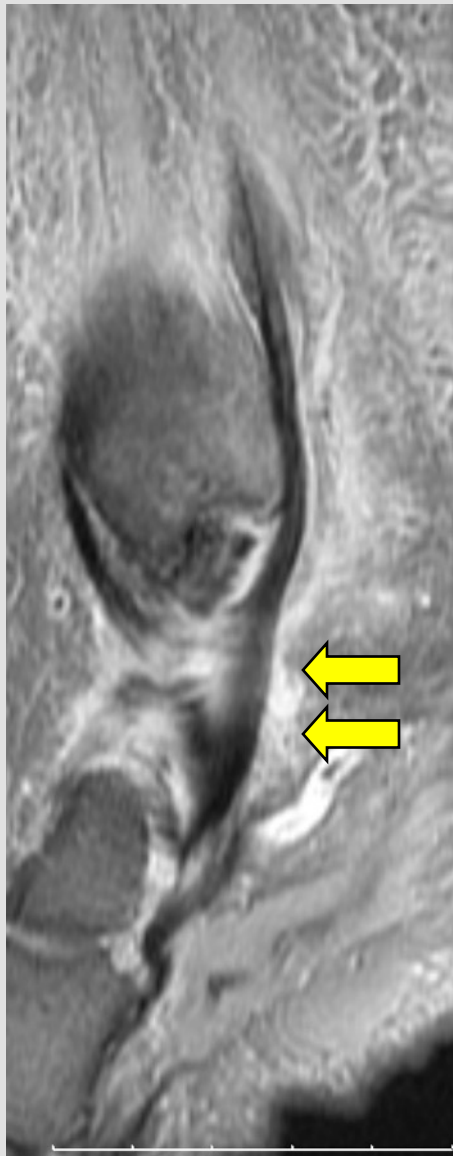
Partiell ruptur av PTT 2

Trauma med nyttillkommen smärtsam plattfothet



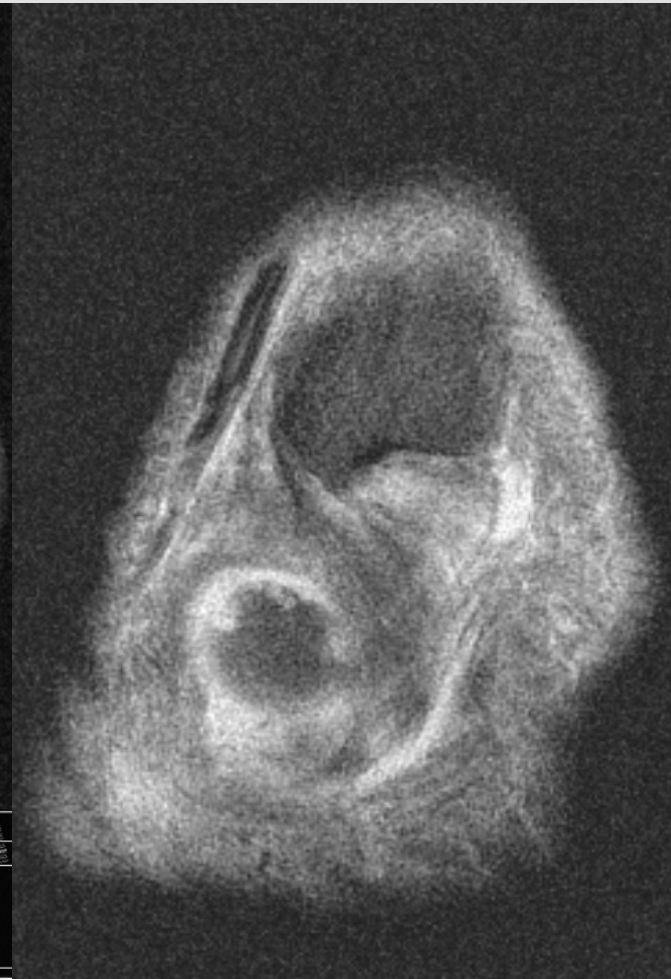
Partiell ruptur av PTT 2

Trauma med nyttillkommen smärtsam plattfothet



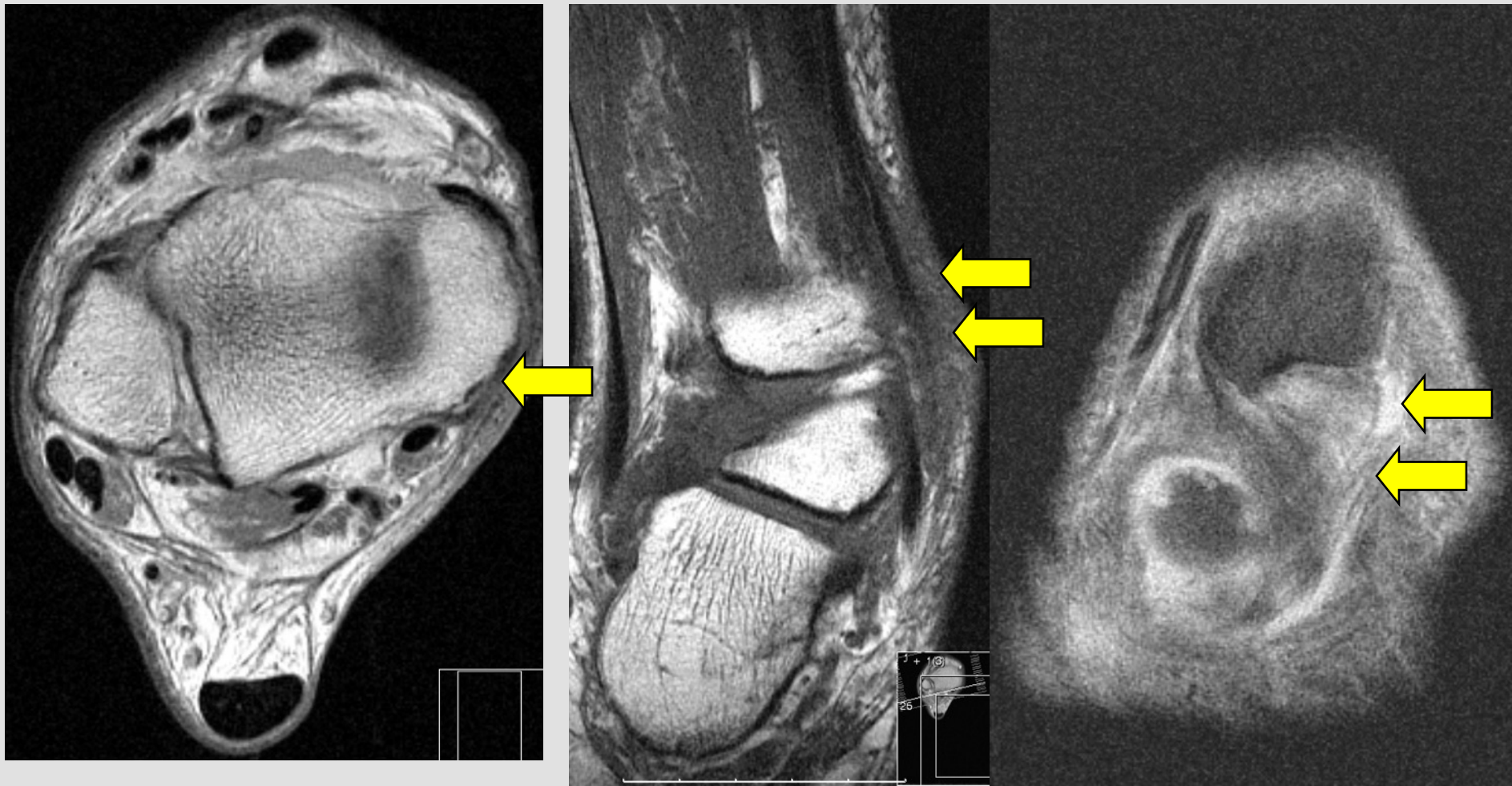
Total ruptur av PTT

Pat med grav valgus-pronation i bägge fötterna,
kliniskt som vid insuffi i tibialis posterior.



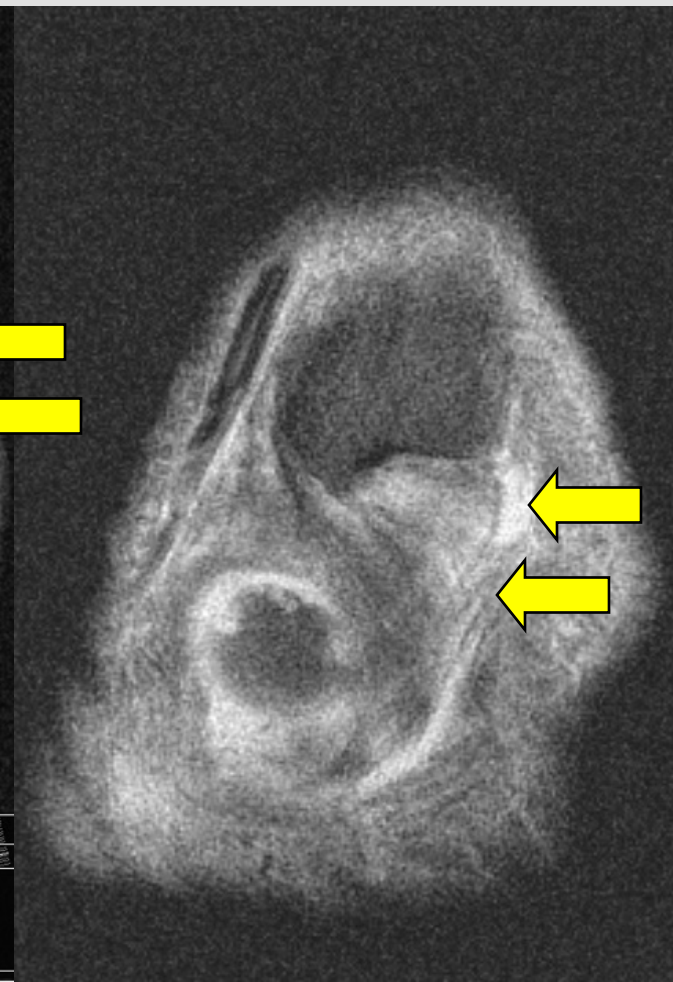
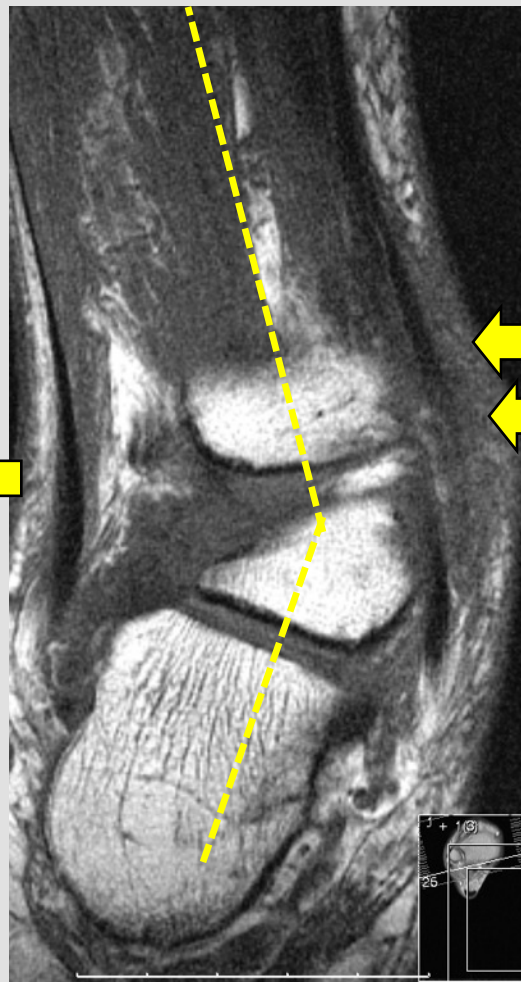
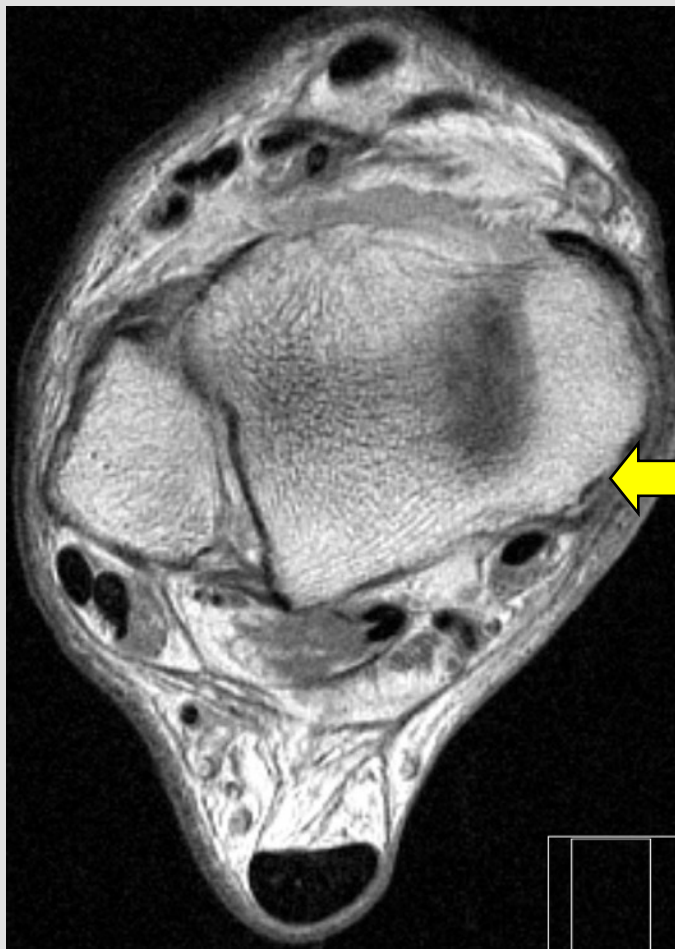
Total ruptur av PTT

Pat med grav valgus-pronation i bägge fötterna,
kliniskt som vid insuff i tibialis posterior.



Total ruptur av PTT

Pat med grav valgus-pronation i bägge fötterna,
kliniskt som vid insuffi i tibialis posterior.



Tibialis posteriorensan dysfunktion /insufficiens (PTTI)

Behandling

- ❑ Konservativ behandling, om PTT intakt
 - Ortos
 - NSAID' S
 - Sjukgymnastik

Tibialis posterior senan dysfunktion /insufficiens (PTTI)

Kirurgi

Calcaneusosteomi +
FDL sentransferering
mot navikulare



Tibialis posterior senan dysfunktion /insufficiens (PTTI)

Calcaneusosteomi +
FDL sentransferering
mot navikulare



Tibialis posterior senan dysfunktion /insufficiens (PTTI)

Calcaneusosteomi +
FDL sentransferering
mot navikulare



Tibialis posterior senan dysfunktion / insufficiens (PTTI)

Calcaneusosteomi + FDL sentransferering mot navikulare



Preop



Postop