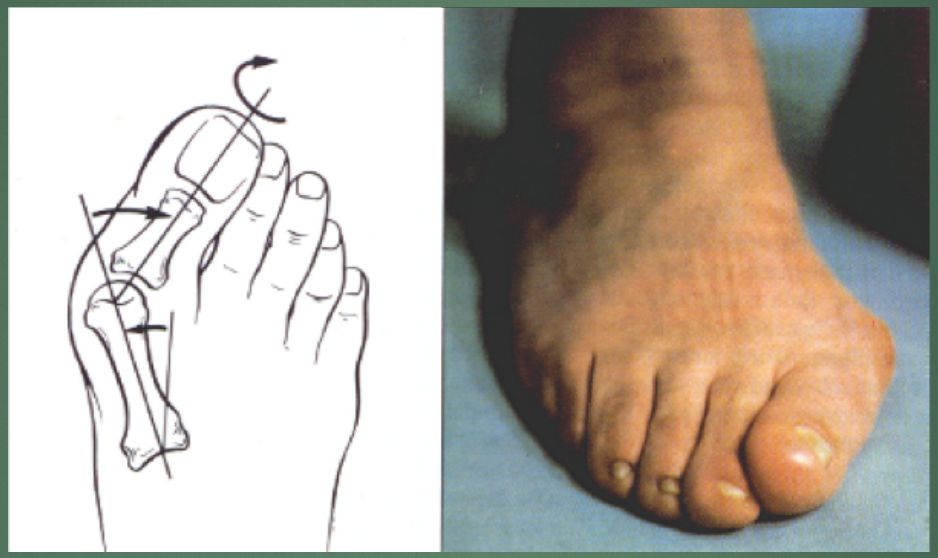
Hallux valgus



Overlæge Jens Kurt Johansen

Fod-ankelsektionen

Hvidovre Hospital

Hallux valgus ætiologi

- Køn: F/M 3-4:1

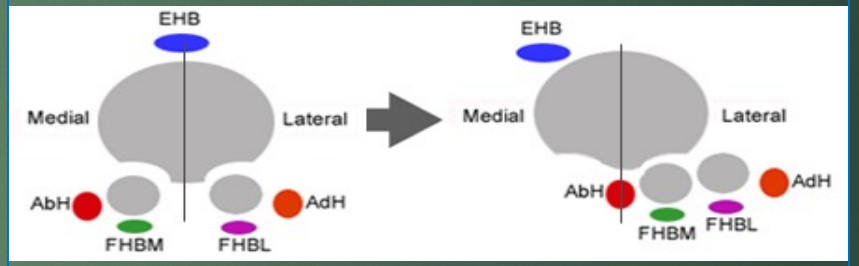
  (3% 15-30 årige, 9% 31-60 årige, 16% over 60 år)
- Familiær ophobning
- Fodtøj
- Pes planovalgus
- Hypermobilitet

Associerede fodabnormiteter

- Stram achillessene (Gastrocnemius)
- Pes planovalgus
- Forfodsvarus
- Dorsalflekteret 1. stråle (metatarsus primus elevatus)
- Hypermobilitet 1. stråle (1. TMT-led)
- Kort 1. metatars

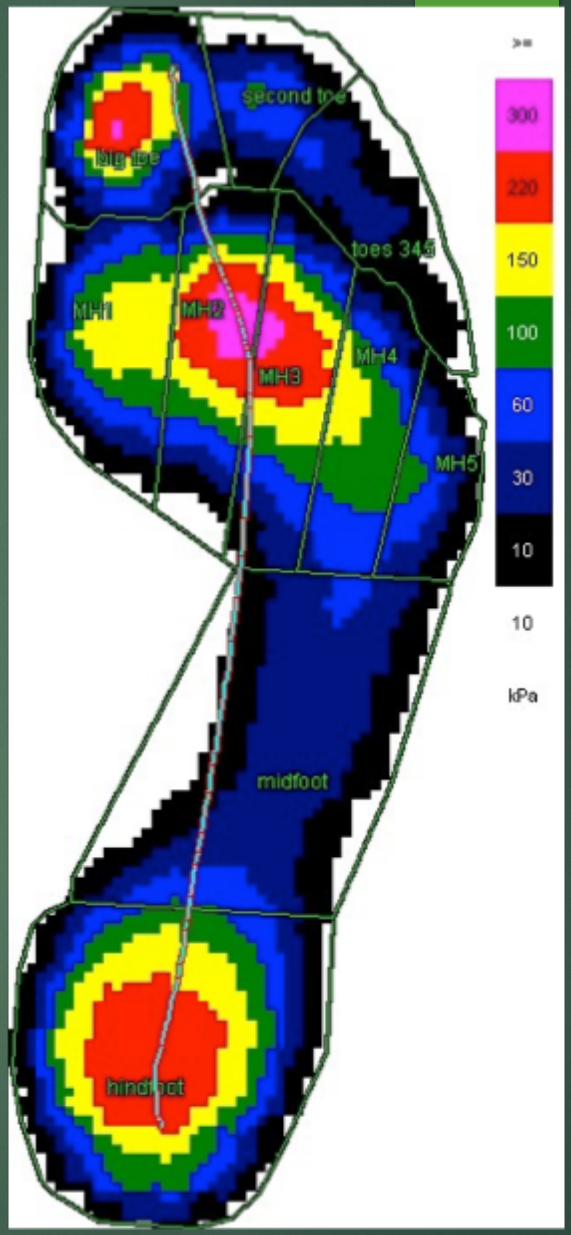
Patogenese

- 1st TMT ⇔ eller ⇳ ustabil
- MT -caput ➔ medialt
  - sesamknogler, FHL, adductor forbliver lateralt
- Add. hallucis & (tryk fra sko) ➔ Phalanx valgus
- Mediale kapsel strækkes; laterale kapsel kontraheres
- Lateral deviation af EHL ↑deformitet
- Lat. sesamknogle i 1-2 interspace; tåen pronerer
- ↓windlass mechanism
- ↓ funktion 1. tå ➔ transfer metatarsalgi



Symptomer:

- Smerter ved mediale eminens
- Nedsat funktion
- Smerter under caput af 2. metatars
- Nedsat funktionsniveau
- Besvær med at finde fodtøj



Diagnostik

- Altid stående røntgen i 2 planer
- Klinisk undersøgelse af hele foden

Vurdering AP røntgen

- IM-vinkel
- HV-Vinkel
- DMAA=PASA
- Sesamknogle displacering
- ”Resten” af foden

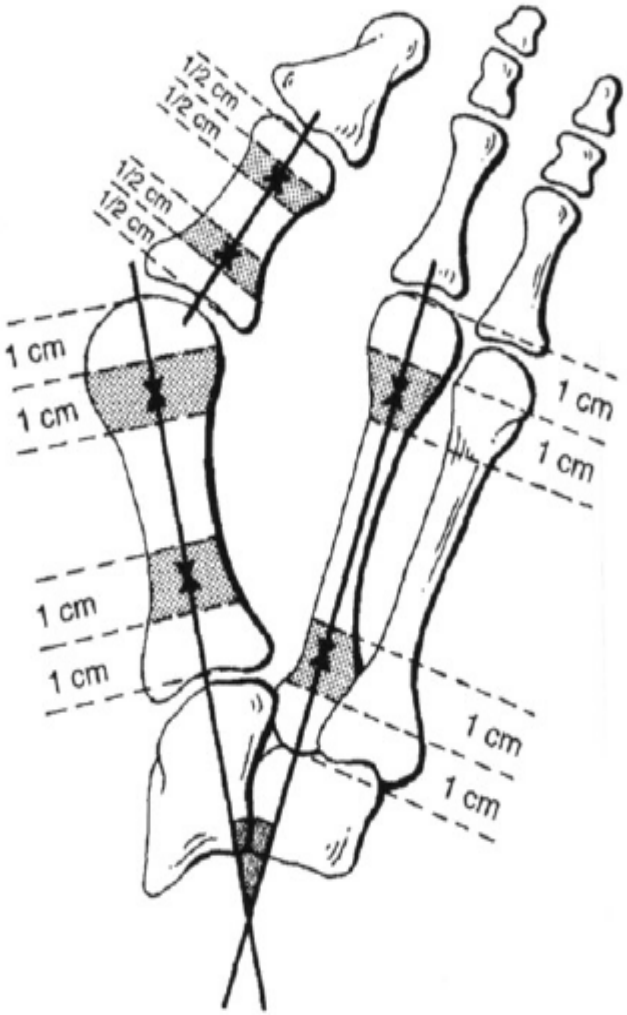


Fig. 3: The location of the reference points for the first and second metatarsals are between 1 and 2 cm from the distal articular surface and the proximal articular surface of each metatarsal. Because of the shorter length of the hallux, reference points are placed between 1/2 and 1 cm from the proximal and distal articular surface of the proximal phalanx.

DMAA/PASA

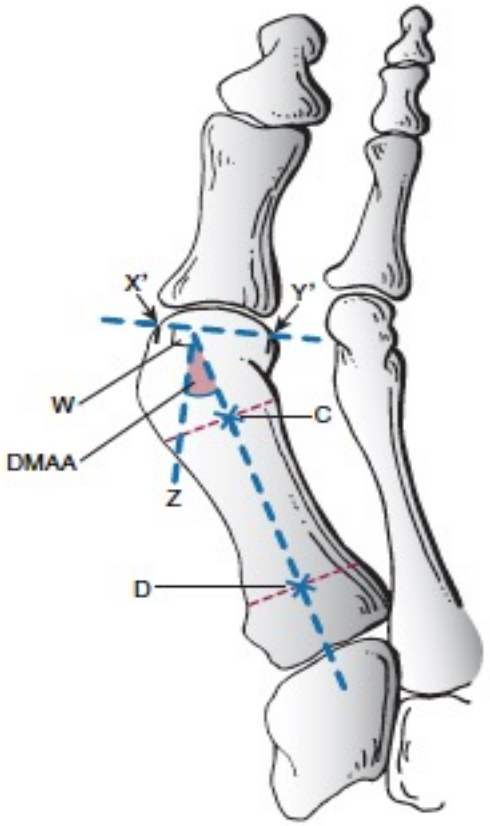


Figure 6–43 Distal metatarsal articular angle (DMAA). The DMAA defines the relationship of the articular surface of the distal first metatarsal with the longitudinal axis of the first metatarsal. Points are placed on the most medial and lateral extent of the distal metatarsal articular surface (X′, Y′). A line drawn to connect these two points defines the "slope laterally of the articular surface." Another line through points (W, Z) is drawn perpendicular to the first line X′-Y′. A third line through points (C, D) defines the longitudinal axis of the first metatarsal. The angle subtended by the perpendicular line (W, Z) and the longitudinal axis of the first metatarsal (C, D) defines the DMAA.

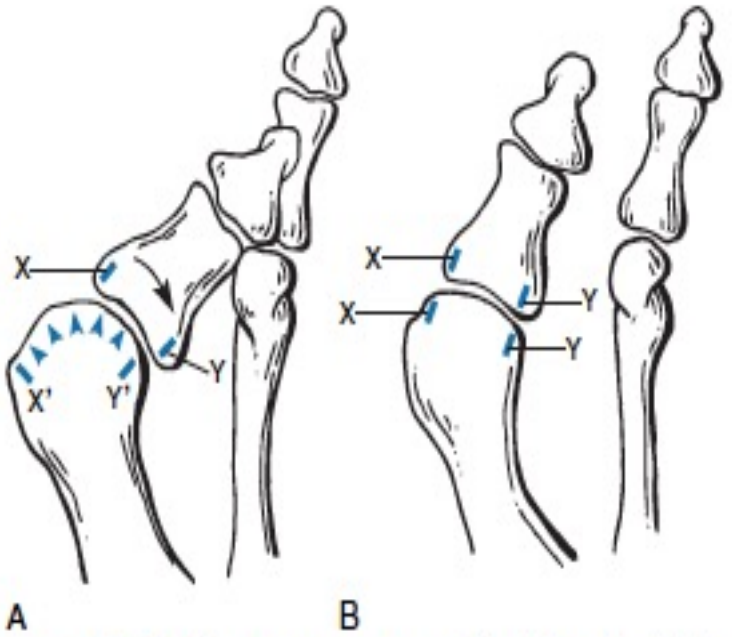


Figure 6–44 Congruency versus subluxation. **A,** Hallux valgus deformity with subluxation (noncongruent joint) is characterized by lateral deviation of the articular surface of the proximal phalanx in relation to the articular surface of the distal first metatarsal. **B,** Hallux valgus deformity with a nonsubluxated (congruent) metatarsophalangeal joint is caused most often by lateral inclination of the distal metatarsal articular surface. Points X and Y determine the medial and lateral extent of the articular surface of the proximal phalanx; points X′ and Y′ determine the medial and lateral extent of the metatarsal articular surface. Note the lateral slope of the distal metatarsal articular surface.

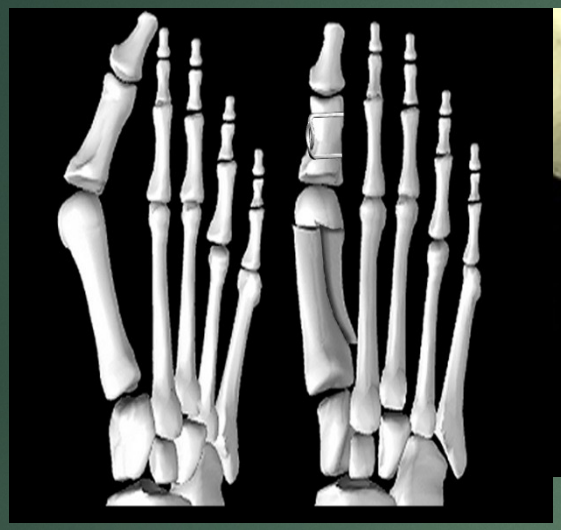
Konservativ behandling

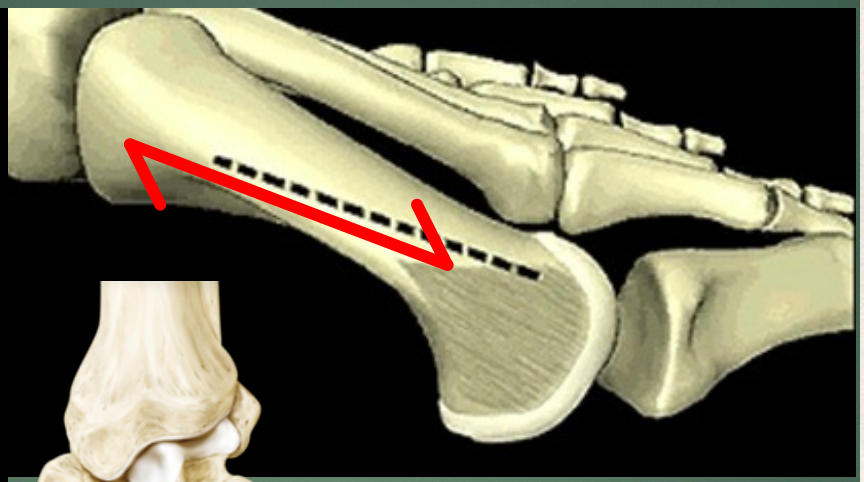
- Modificering af fodtøj/ortopædisk fodtøj
- Tapening, indlæg, diverse skinner
- NSAID
- Ændring af aktivitetsniveau
- Kosmetiske overvejelser

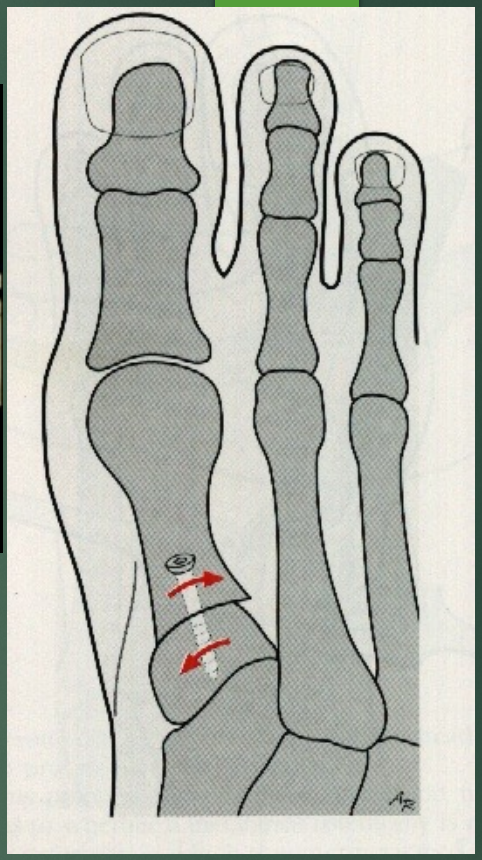
Operativ behandling

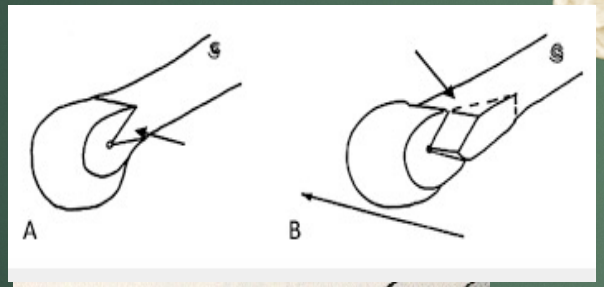
- Ved smerter – omkring bunion/under forfoden
- Tåkonflikt
- Funktionsindskrænkning
- Mere end 120 operative metoder
- Hyppigste:
  - Chevron
  - Scarf
  - Open wedge
  - Lapidus
  - Artrodese

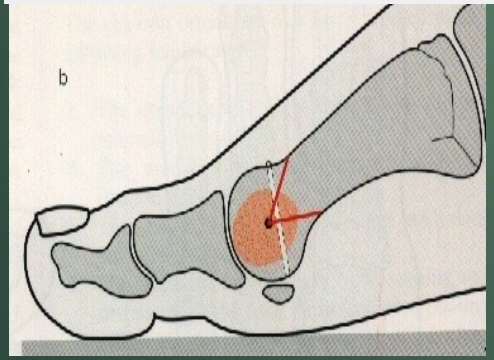
Operativ behandling

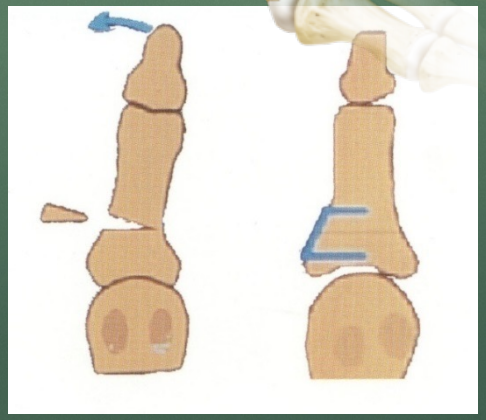












Valg af operationsteknik

IM<15 gr. HV<30 gr.	**IM>15 gr. eller HV>30gr. - hypermobil**	**hypermobil**
Chevron osteotomi **Akin osteotomi**	**Proksimal osteotomi** **Akin osteotomi**	**TMT-dese** **Akin osteotomi**

I kombination med relevante bløddelsprocedurer

Komplikationer:

Hyppigste komplikation:
MTP-I- stivhed - mindskes med tiden

Bløddele:

- Sårhelingsproblemer
- Nerveskade eller irritation
- Infektion
- Instabilitet MTP-I
- Arthrofibrosis
- Recidiv af Hallux valgus
- Overskæring FHL
- CRPS

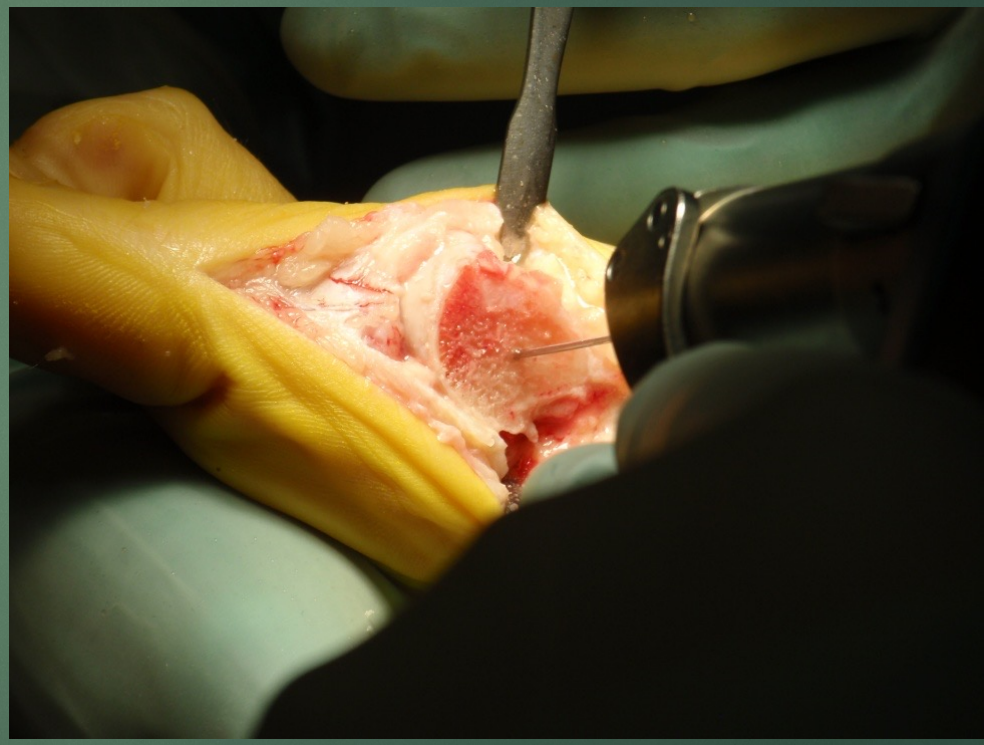
Knogle/hardware

- Malunion- pseudo-artrose
- Hardware failure
- Overkorrektion- hallux varus
- Underkorrektion- recidiv
- Caputnekrose
- Forkortning af 1. stråle

Chevron Osteotomi

Midtlinjeincision

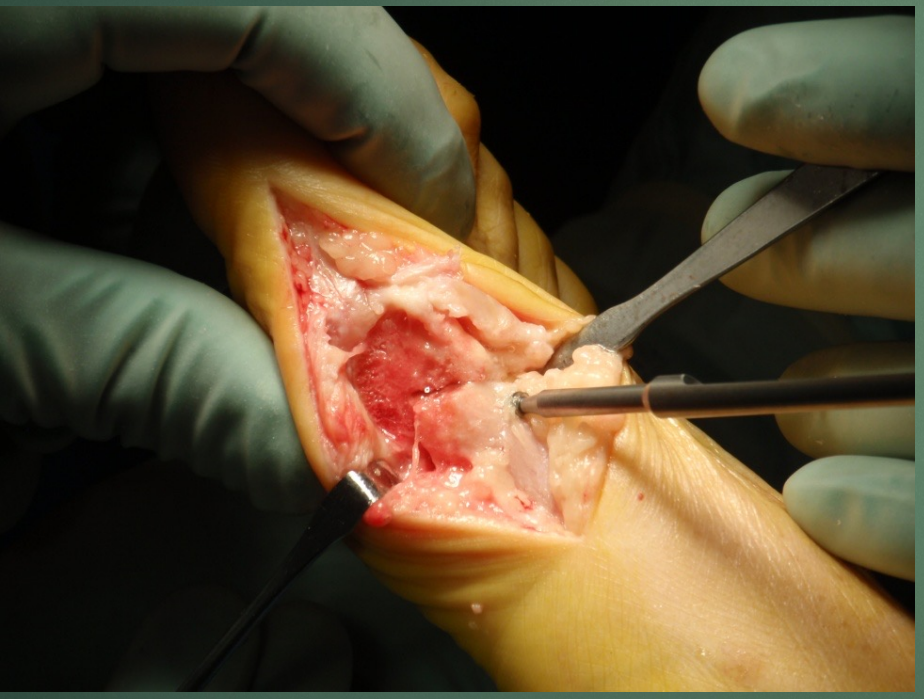
Markering af centrum



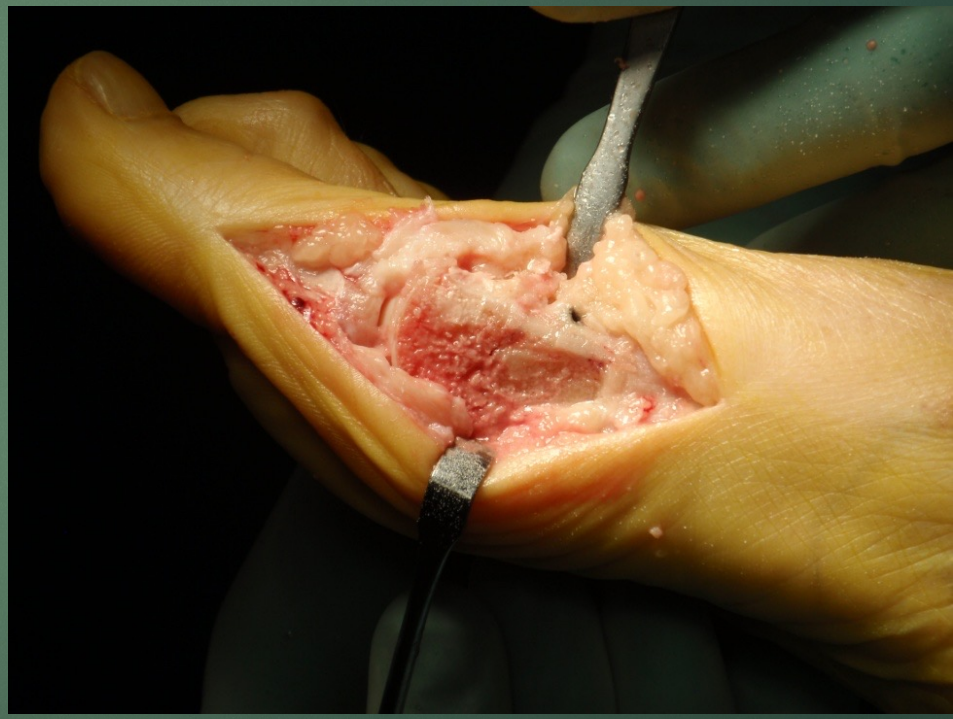
Chevron Osteotomi

Chevron Osteotomi

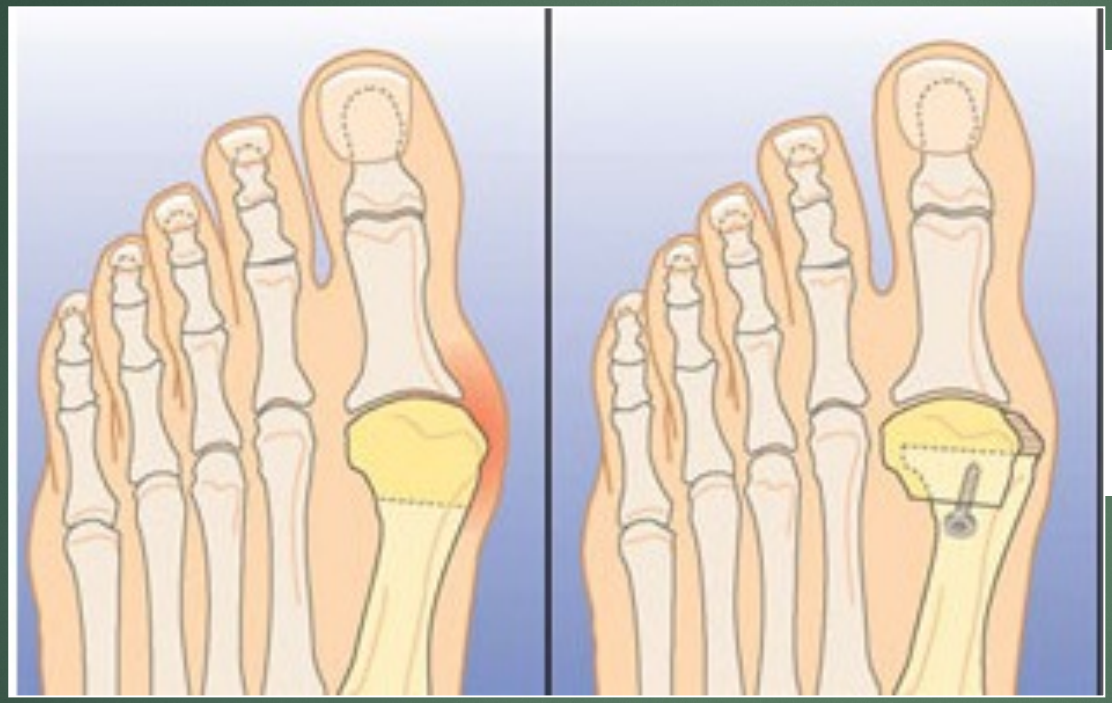
Lateralisering og kompression



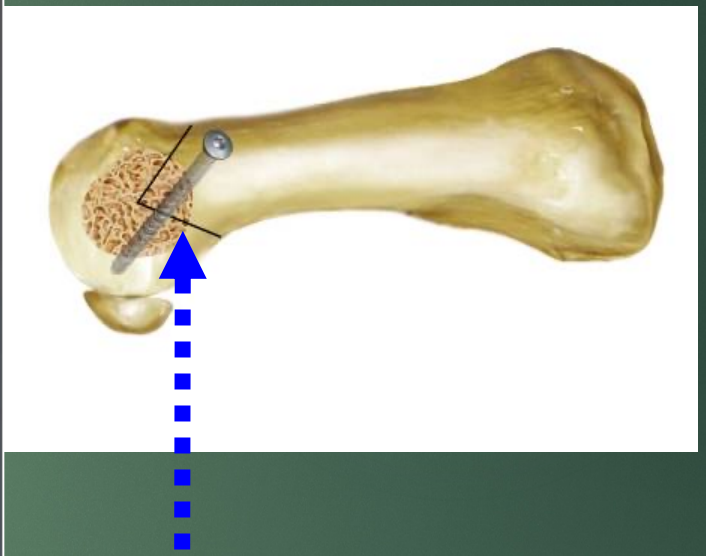
Efter afsavning af ”tagskæg”



Distal Osteotomi (Chevron/Austin)



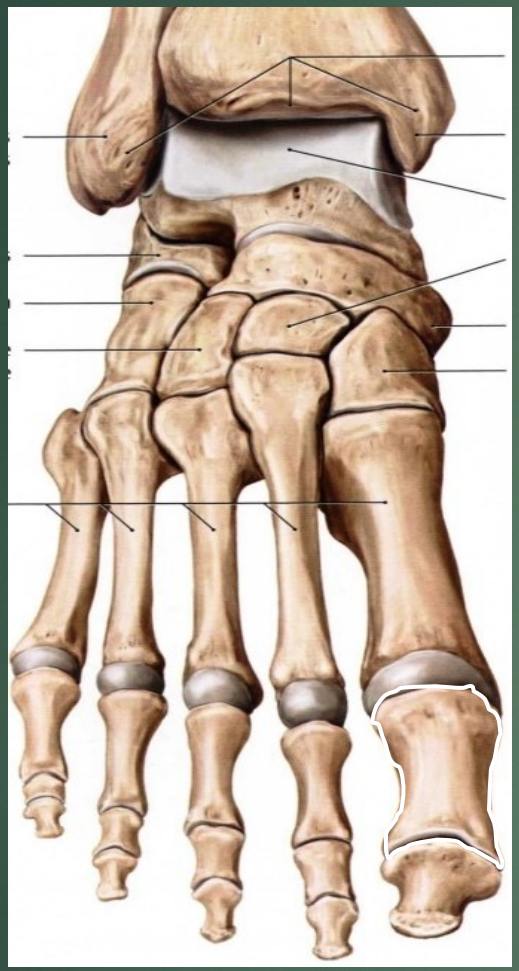
Chevron Osteotomy

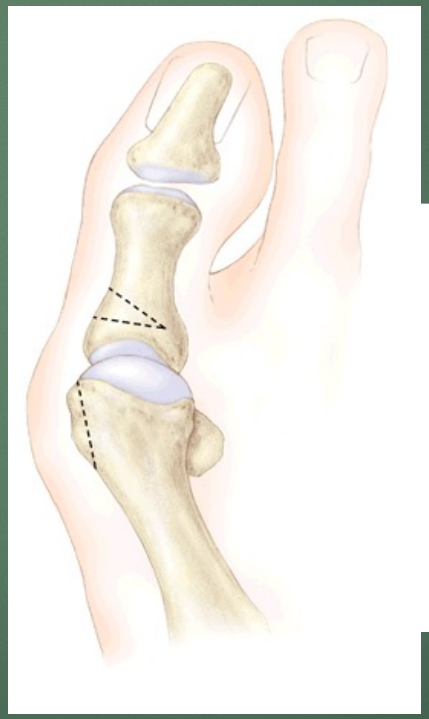


V-Cut

Akin Osteotomi

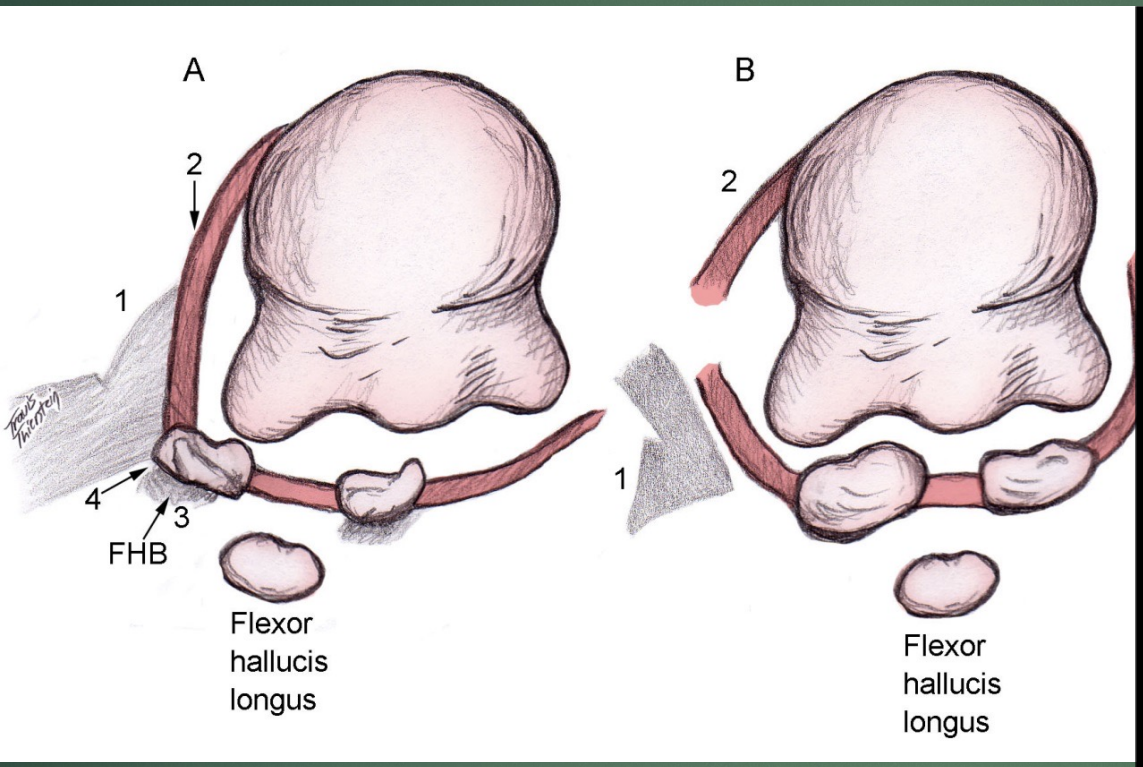
Supplement til Chevron

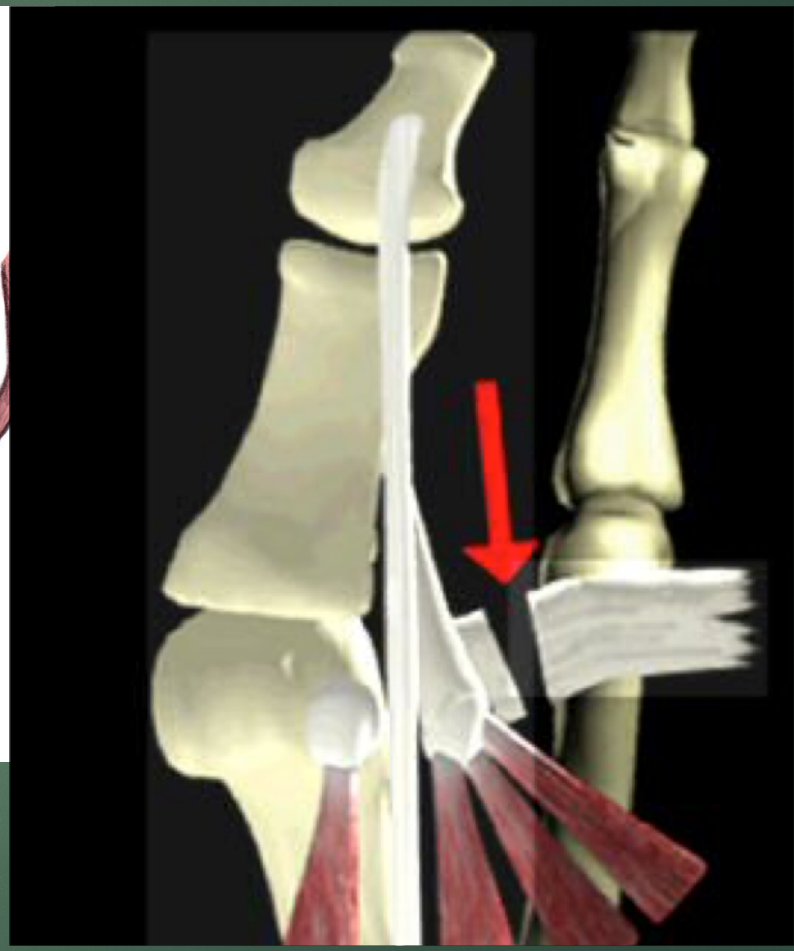




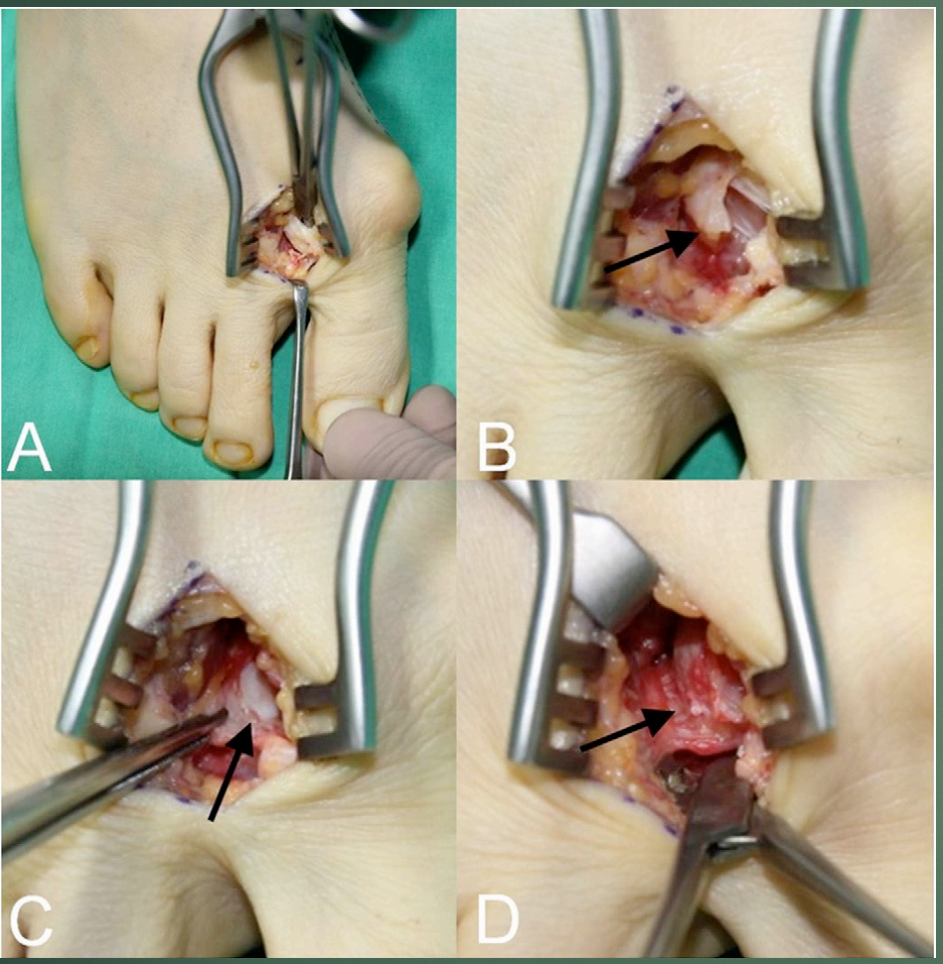
Akin Osteotomi

Lateral release





Lateral release



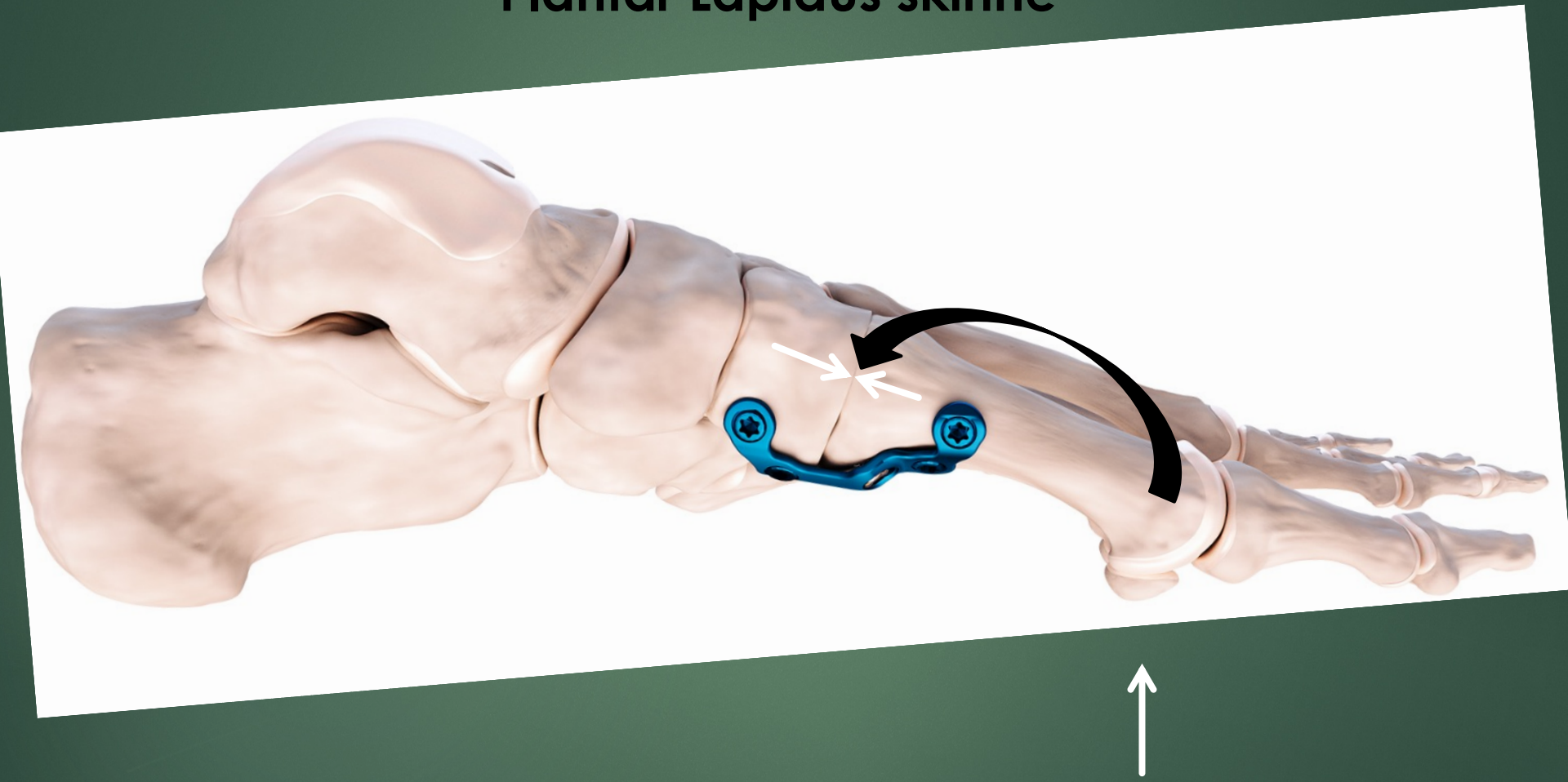
Anatomical structures to be released through the dorsal first web-space approach.
Fig. 2-A **The adductor hallucis tendon** is identified with use of a mosquito forceps.
Fig. 2-B The adductor hallucis tendon (arrow) has been released from its insertion at the base of proximal phalanx of the great toe.
Fig. 2-C After releasing **the fibular sesamoid-metatarsal ligament**, the fibular sesamoid (arrow) can be observed.
Fig. 2-D **The transverse metatarsal ligament** (arrow) has been identified and transected.

Transartikulær lateral release

Lapidus skinne (plantar)

- Indikation: Hallux Valgus med instabilitet i TMT-1
- Kompressionsskrue +
- Plantar skinne med kompression og tensionband-effekt

Plantar Lapidus skinne



CASES Hallux Valgus

Kristina

- Bilat. hallux valgusgener. Mest udtalt på ve. side.
- Objektivt:
- Bilat. hallux valgus fejlstilling, moderat.
- Der er let rødme over knysten.
- God bevægelighed i 1. MTP-led. Således 70/20° flektion. Bilat. er stabilitet i TMT-led.
- Patienten har normale neurovaskulære forhold på foden.

  Rtg. viser på ve. side en HV-vinkel på knap 22°. Normal IM-vinkel.
- På hø. side ses 28 graders HV-vinkel. Normal IM-vinkel.

Kristina

Behandlingsforslag

Kristina post op

Patienten tilbydes distal osteotomi med chevron osteotomi og evt. akin osteotomi, samt lateral release.

Benny

- Mangeårig hø. fodproblematik.
- Opereret på Korsbæk Sygehus i 2003 og 2004, hvor patienten fik lavet PIP-leds dese 2. tå hø. Side. Har aldrig været rigtig godt.

Nu generet af 2. tåen overlejrer 1. tåen. Har svært ved at finde fodtøj.

- Objektivt:
- Hø. fod: instabilt 1. TMT-led.
- Forfod med 2. tåen der overlejrer 1. tåen.

Bunionndannelse og hallux valgus konfiguration. I øvrigt en del kallositeter i fodsålen. Saggitalt instabilt 2. MTP-led.

- Rtg. viser IM-vinkel på ca. 16 grader.
- Pæn længde på 2. metatars.

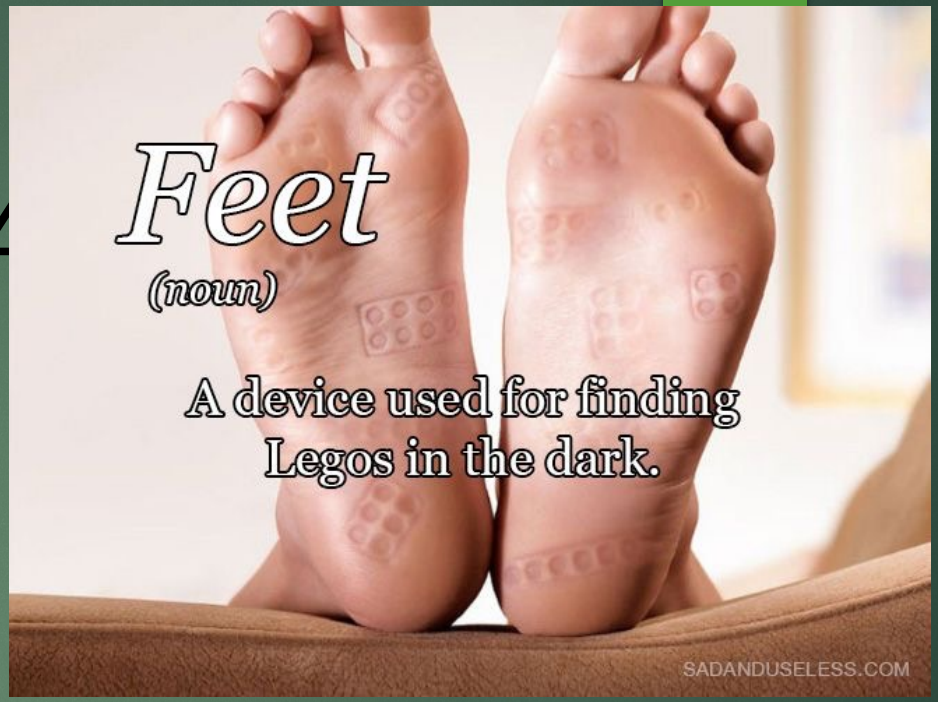
Begyndende degenerative forandringer svarende til 1. MTP.

Benny

Behandlingsforslag

Benny postop

Breaking News
LIVE LOCAL MAN REPORTS BIGFOOT SIGHTNG
TVN
EXCLUSIVE
ROFLRAZZI.COM


Feet
(noun)
A device used for finding
Legos in the dark.
SADANDUSELESS.COM

THE LITTLE TOE
Designed specifically to
Geo-locate furniture in
low light conditions.

Hallux rigidus

Overlæge Jens Kurt Johansen

Fod-ankelsektionen

Hvidovre Hospital

Hallux rigidus

- Ætiologi: Traume? Idiopatisk ?
- Symptomer: Smerter og nedsat ROM MTPJ-1
- Rtg: Osteofytose samt artrose/osteochondral skade

Konservativ behandling

- Modificering af fodtøj (gænge)
- Indlæg
- NSAID
- Ændring af aktivitetsniveau

Hallux rigidus operativ behandling

Cheilectomi:

Ved generende dorsal knystdannelse.

Youngswick osteotomi/Moberg:

Supplement til cheilectomi

MTP artrodese:

Ved symptomer fra centrale/plantare del af leddet

Tå-alloplastik: ?

Keller artroplastik:

Hvor større kirurgi er kontraindiceret.

Ældre pt med nedsat aktivitetsniveau!

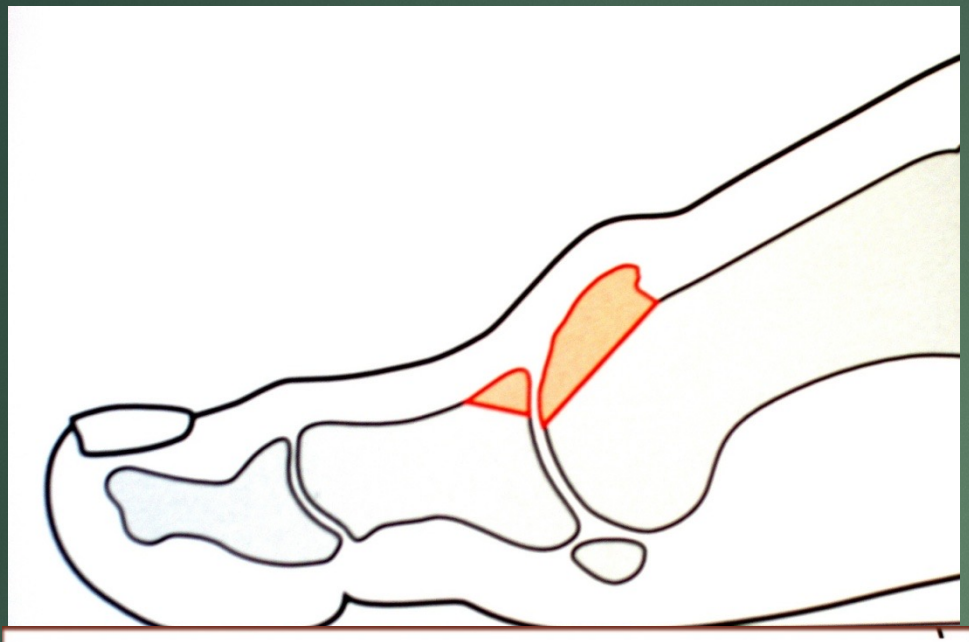
Cheilectomi

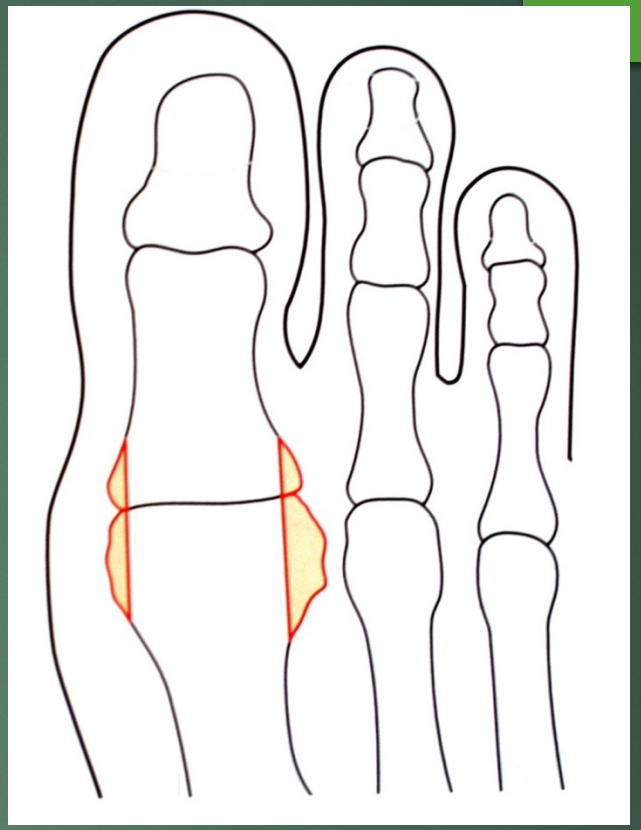
Indikationer:

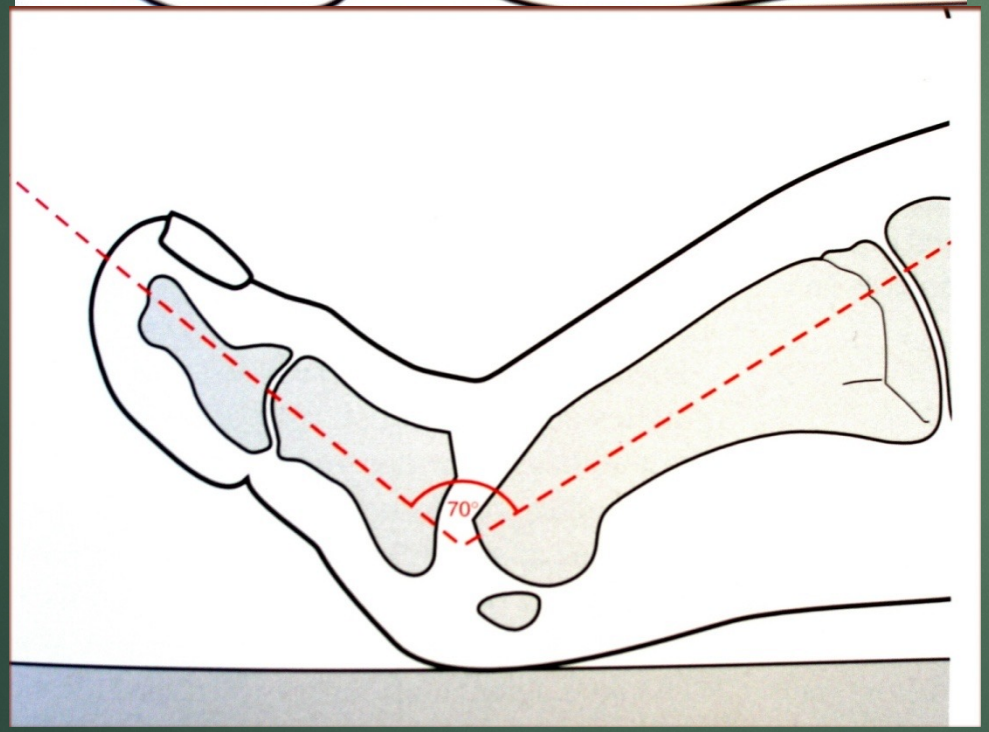
- Gener fra fodtøj på grund af dorsal knystdannelse.
- Indskrænket bevægelighed og/eller smerter ved max. dorsalflexion og plantarflexion (impingement).

Kontraindikationer

- Massiv artrose
- Brusk degeneration plantart i leddet (>50% af ledbrusk involveret).
- Smerte ved kompression af leddet i længderetningen under plantarflexion.
- Tidligere cheilectomi






70°

Indikation for MTP- 1 dese

- Svær artrose hvor mere end 50% af brusken på caput af 1. metatars er væk.
- Tidligere mislykket cheilectomi
- Svær hallux valgus
- RA med forfodsdeformitet.

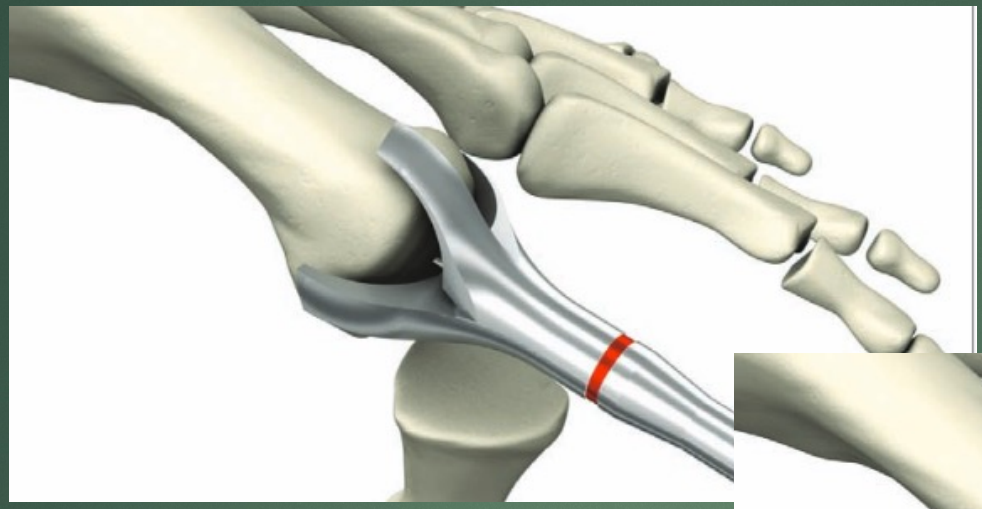
R

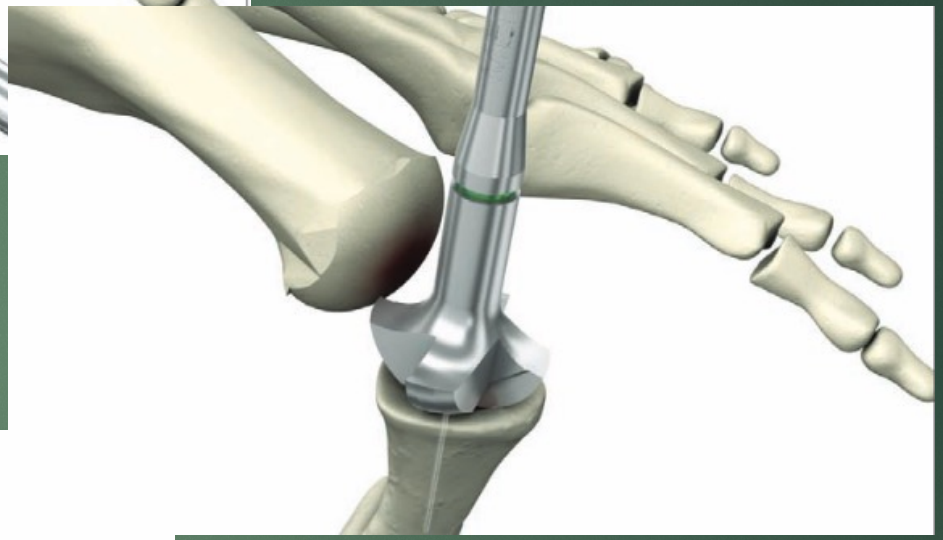
R

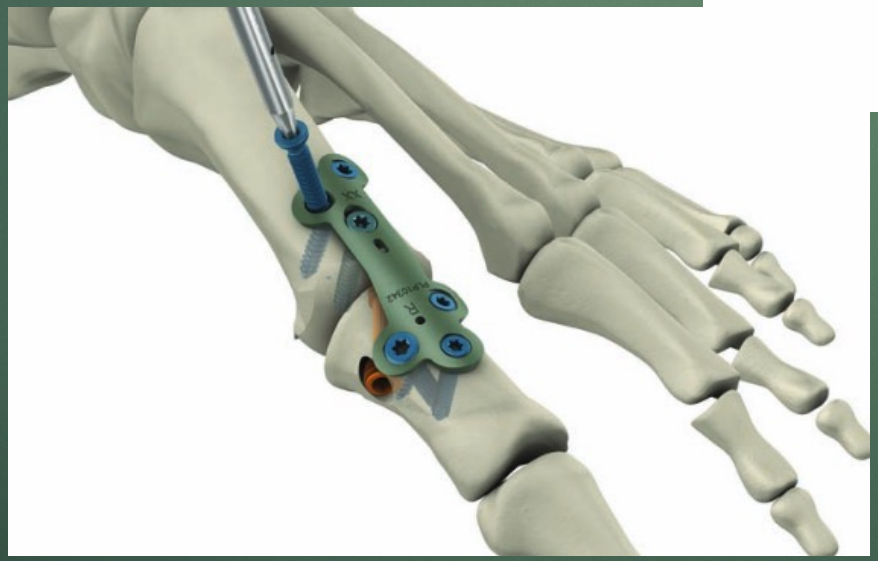
R

MTP- 1 dese

- 5-10% risiko for pseudoartrose efter MTP-1 dese
- Øvrige komplikationer…







Tå alloplastik

Tå alloplastik

Rotaglide (total alloplastik)

- 15 års follow-up (80 ptt – 6 døde i follow-up urelateret til indgreb)
- 4,4% proteser fjernet.
- 4 ptt fik fjernet tibiale sesamknogle i followup-periode. 22/74 havde artrose ved sesamknogler.
- Survivalrate protesen 91,5%

HemiCap (resurfacing metatarsal head hemiarthroplasty)

- Follow-up 6-7 år (57 ptt/ 65 HemiCaps)
- 12% failure (fortsatte smerter) – konverteret til MTPJ- artrodese

CAVE udtalt artrose på grundphalanx…..

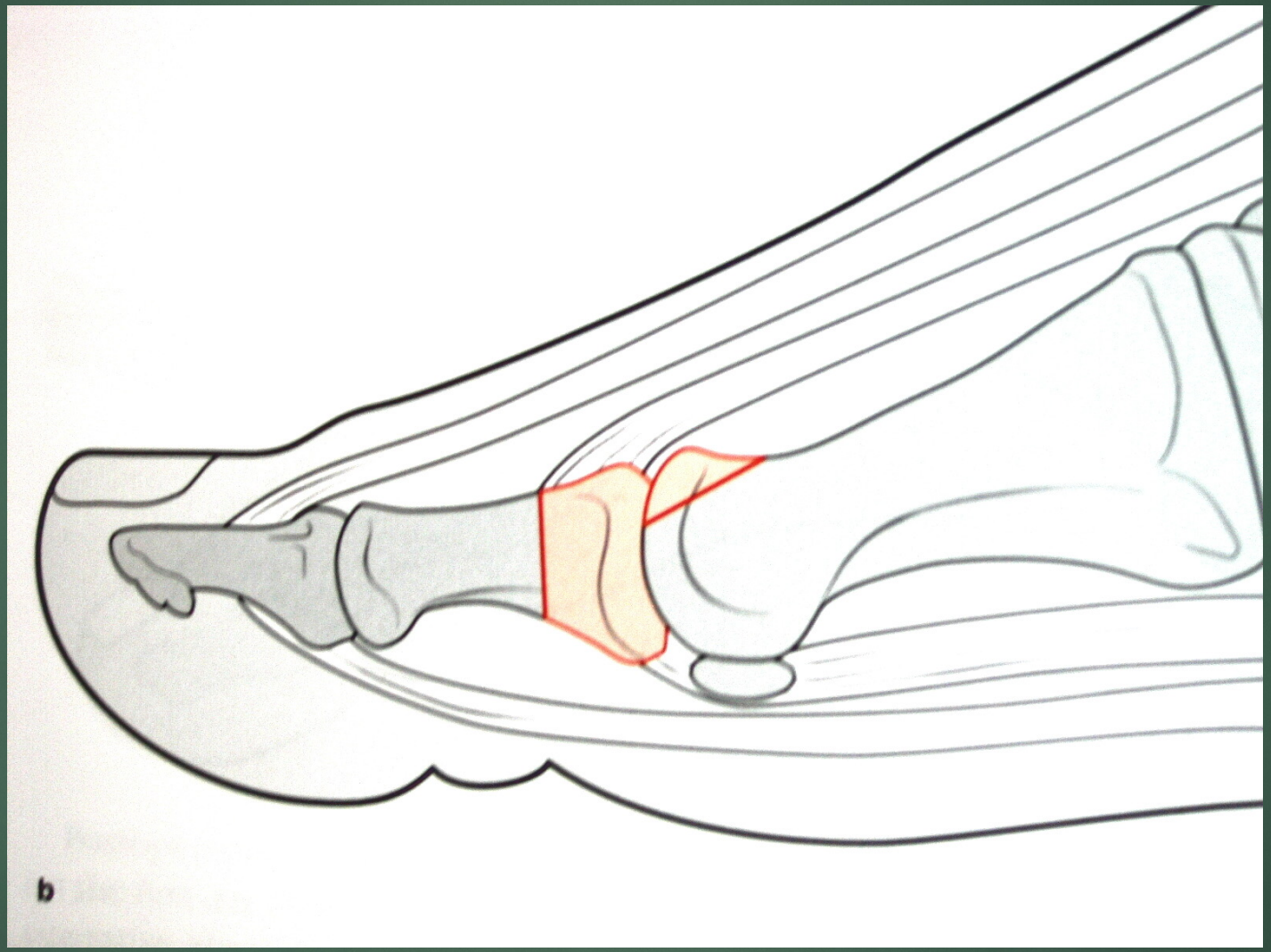
Table 7.

Summary of Previously Published Studies Reporting Clinical Results of the Surgical Treatment of Hallux Rigidus[a].

Study	Operation	Procedures	Mean Age (Years)	Mean Follow up (Months)	Mean AOFAS	Complication	Mean DROM (°)	Mean VAS Pain Score/AOFAS Pain Subscore
Fuhrmann et al[36]	Total MTP arthroplasty	43	N/A	25-28	90.0	9%, 4 conversions to fusion	45	AOFAS: 32.8/40
Gibson et al[9]	Total MTP arthroplasty	39	55.5	24.0	N/A	15%, 6 phlangeal component loosening and revision	24.0	VAS: 2.7
Yee et al[5]	Total MTP arthroplasty (ceramic)	41	62	33	83.7	7%, 2 revise to arthrodesis, 1 larger implant inserted	34	AOFAS: 30.5/40
Hasselman et al[10]	Metatarsal head resurfacing	25	51	20	96.1	Metallosis and infection in 1 patient each	65	N/A
Gibson et al[9]	Arthrodesis	38	54.2	24.0	N/A	15%, 6 component loosening and revisions	N/A	VAS: 1.1
Raikin et al[14]	Arthrodesis	27	54.1	30.0	83.8	8%, 2 removals of prominent screw	N/A	VAS: 0.7
Aslan et al[34]	Metatarsal head resurfacing	27	58	37.6	85.1	None	54.3	VAS: 2.05
Kline and Hasselman[37]	Metatarsal head resurfacing	30	51	60.0	94.1	13%, 3 silastic implant at 3 years, 1 arthrodesis	66.3	AOFAS:32/40

Abbreviations: AOFAS, American Orthopaedic Foot and Ankle Society; DROM, dorsiflexion range of motion; VAS, visual analogue scale; N/A, not applicable.
[a]Pain was reported either as VAS pain score (0 = no pain, 10 = worst pain) or AOFAS pain subscore (0 = severe/almost always present, 40 = no pain).

Kellers operation



CASES Hallux Rigidus

Anker

- Gennem en årrække tiltagende gener fra 1. tås grundled på begge sider. Ve. side værst.
- Har i nogle år kunne klare sig med Panodil, dette har ikke effekt længere. Konstante smerter i storetåens grundled både ved belastning og om natten, samt i hvile.
- Beskriver intraartikulære smerter såvel som svære smerter ved forsøg på dorsal flektion af leddet.
- Der findes hallux rigidus bilat. med dorsal flektion til omkring 10° i storetåens grundled. Tydelig dorsal knystdannelse og nydelige hudforhold.
- Rtg. viser svær artrose i begge MTP-1-led med stor osteofytdannelse. Total destrueret bruskhøjde.

Anker

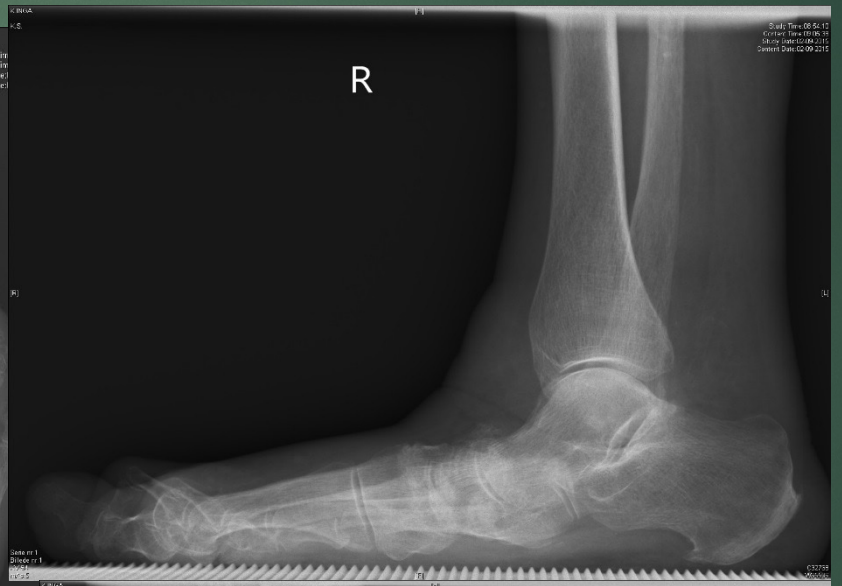
Behandlingsforslag

Anker postop

Inga

- 84 årig kvinde henvist med bilateral knystgener – smerter gennem de sidste 30 år.
- Ønsker vurdering af behandlingsmuligheder.

Inga



Behandlingsforslag?

- Patienten har svære artroseforandringer og en voksenerhvervet platfod på degenerativ basis. Er ikke velegnet til kirurgi grundet panartrose, bør i stedet tilbydes håndsyet fodtøj

Take home message I

- Kirurgisk behandling primært ved smerter.
- Korrektion af både knogler og bløddele (sesamkomplex).
- Bliv bekendt med få operationsmetoder både proksimale/skaft og distale metoder

Take home message II

- Målet er ved hallux valgus kirurgi:

1. Eliminere smerte
2. Opnå kongruent MTPJ
3. Realignment af 1. tåen
4. Bevare bevægelse i MTPJ
5. Undgå recidiv

Opnås bedst ved grundig præoperativ planlægning