



Malunion – Indications for correction

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MESSAGE

Indications for surgery of malunions are less clear than for non-unions

DO NO HARM

Stories of Life, Death,
and Brain Surgery



Henry Marsh, neurosurgeon



- 3 months to learn a surgical procedure
- 3 years to learn when to operate
- 30 years to learn when NOT to operate

Osteoarthritis and mechanical axis alignment ?





FACTORS PREDICTING THE DEVELOPMENT OF EARLY OSTEOARTHRITIS FOLLOWING LATERAL TIBIAL PLATEAU FRACTURES: MID-TERM CLINICAL AND RADIOGRAPHIC OUTCOMES OF 73 OPERATIVELY TREATED PATIENTS

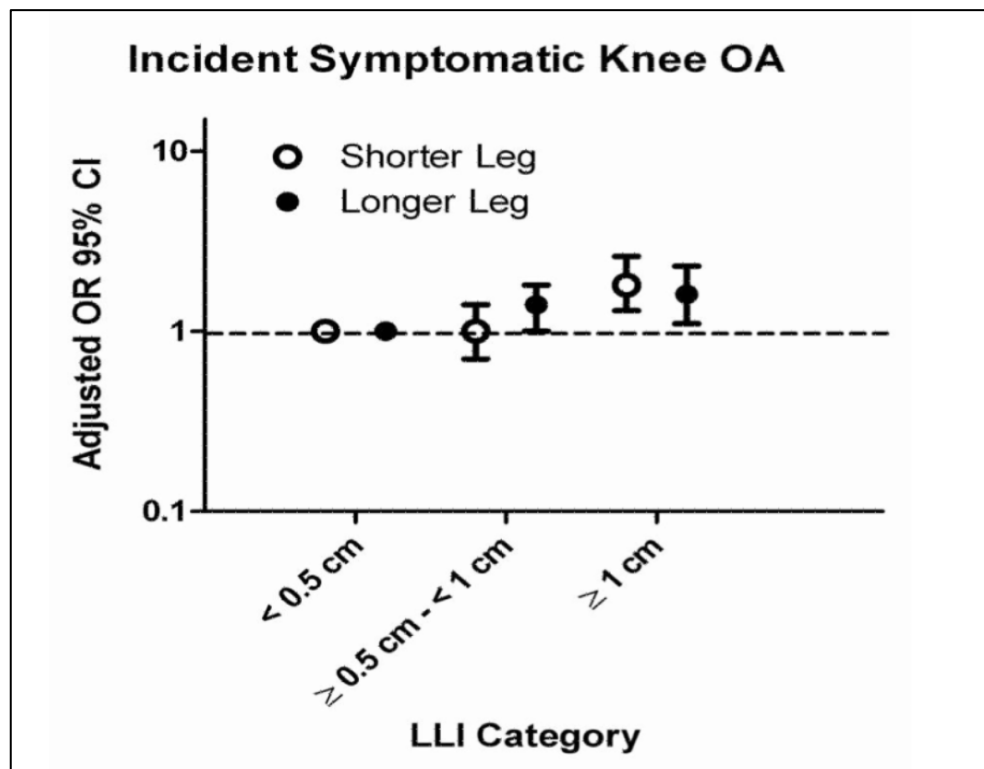
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- 73 tibial lateral plateau fractures (ORIF) followed for a mean of 54 months
- More advanced osteoarthritis when
 - Valgus malalignment > 5 degrees
 - Articular depression > 2 mm
 - (The role of initial dislocation and cartilage damage is unknown)

ASSOCIATIONS OF LEG LENGTH INEQUALITY WITH PREVALENT, INCIDENT, AND PROGRESSIVE KNEE OSTEOARTHRITIS: A COHORT STUDY



No indication for surgery in
the asymptomatic mal-union

Indications for surgery of malunion

Patient must have symptoms:

- Pain
- Functional impairment

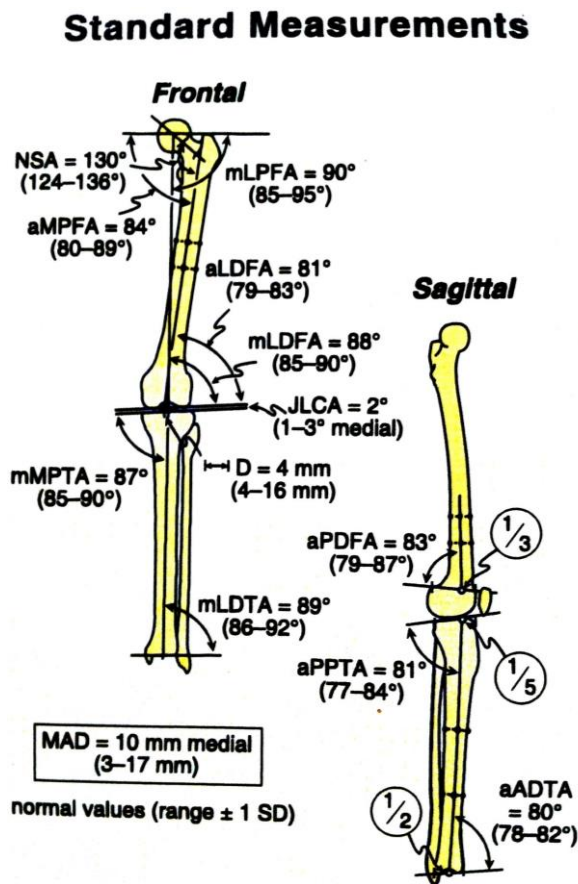
AND can YOU do it better ?!?!?

Consider complex reconstruction / arthroplasty ?



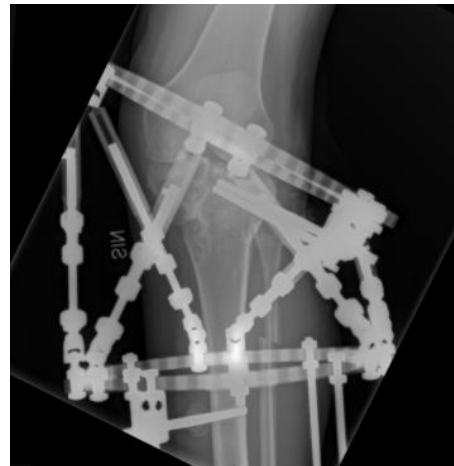
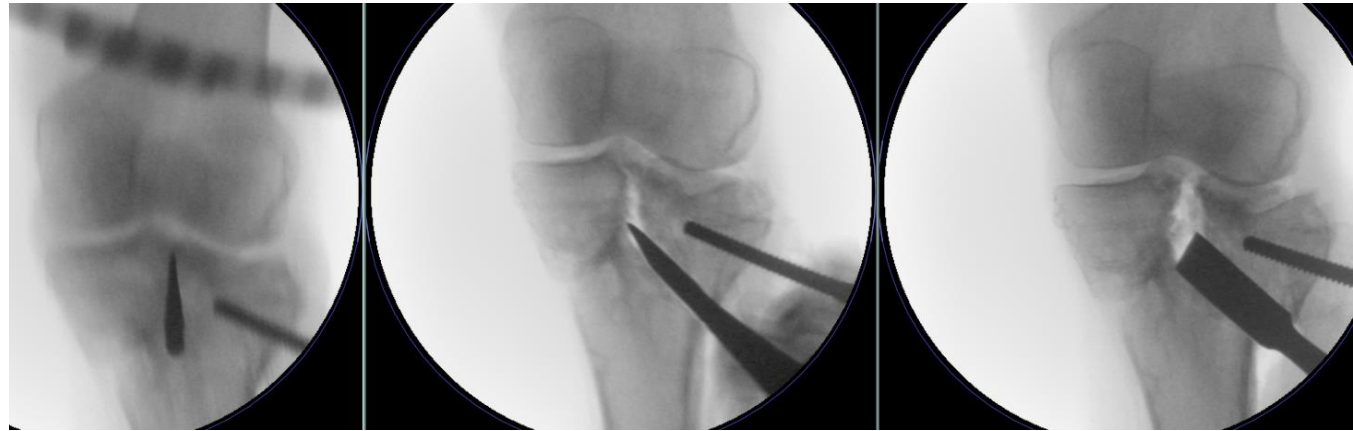
Can you do it better ?

- Mechanical alignment
- Rotation
- Limb length
Often shortening in malunion



Intra-articular malunion: surgical options

- Joint preserving surgery (intra-articular osteotomies, juxta-articular osteotomies)
- Arthroplasty
- Arthrodesis



Simple malunion: surgical options

- Intramedullary nails, plates



Complex malunion: large bony deformity/compromised soft-tissues

16 years old male

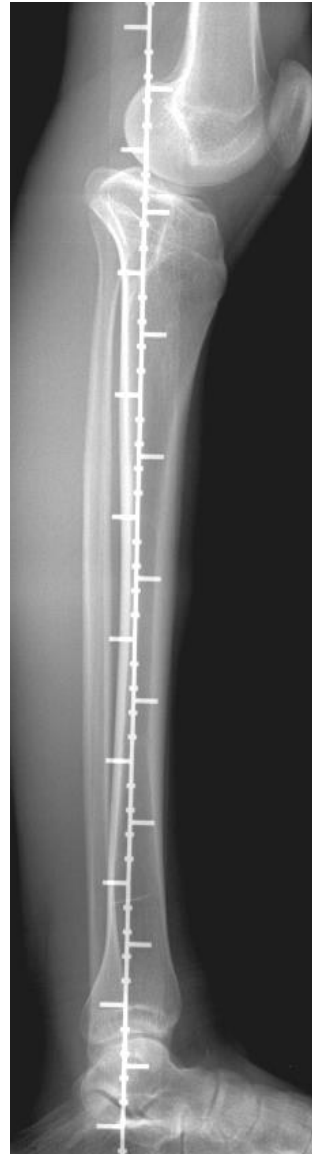
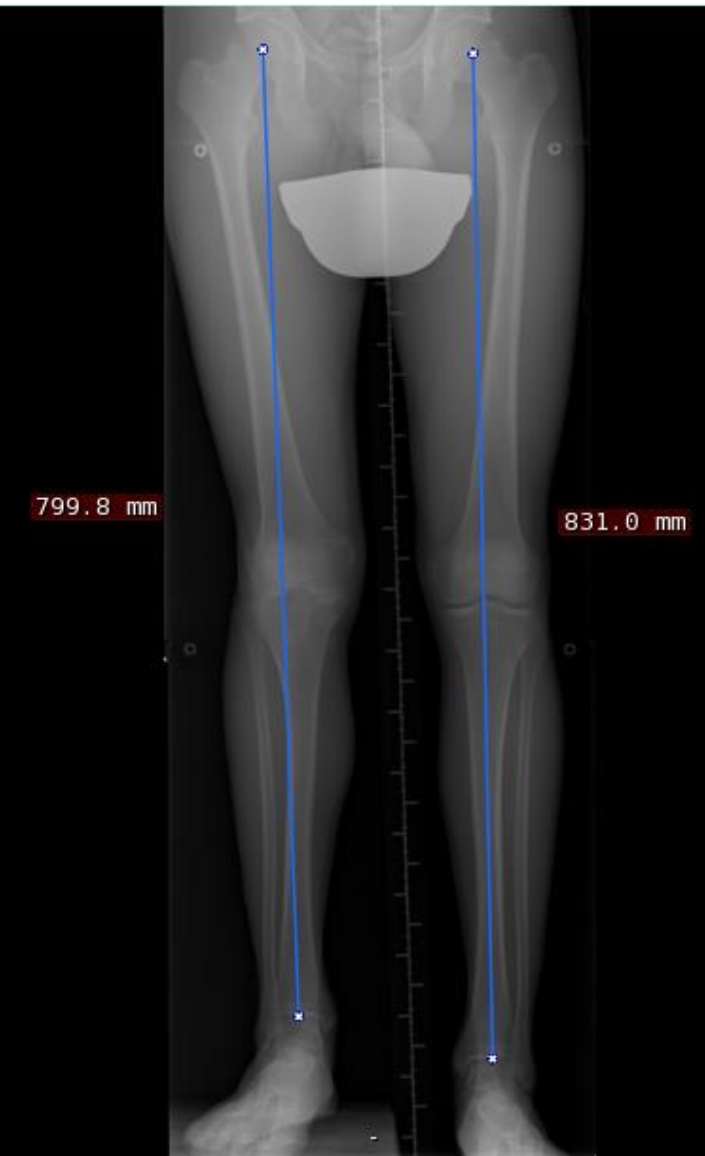
Right knee trauma at age 9

Right knee pain

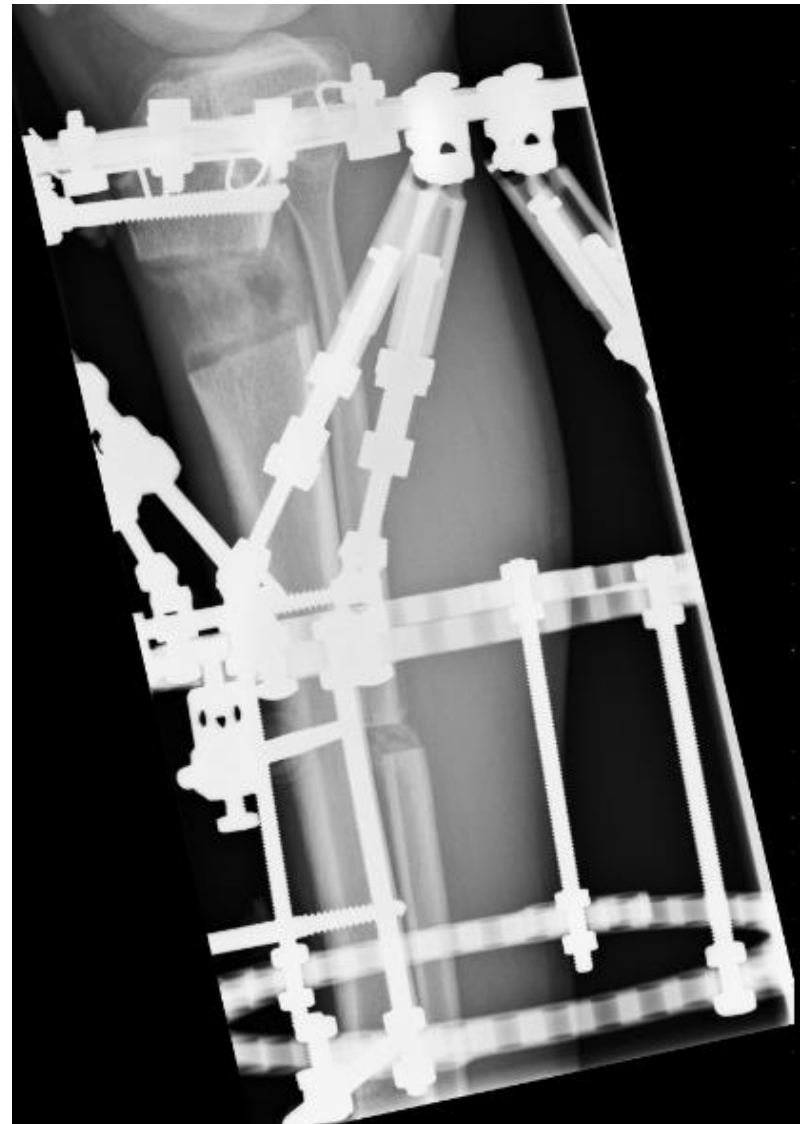
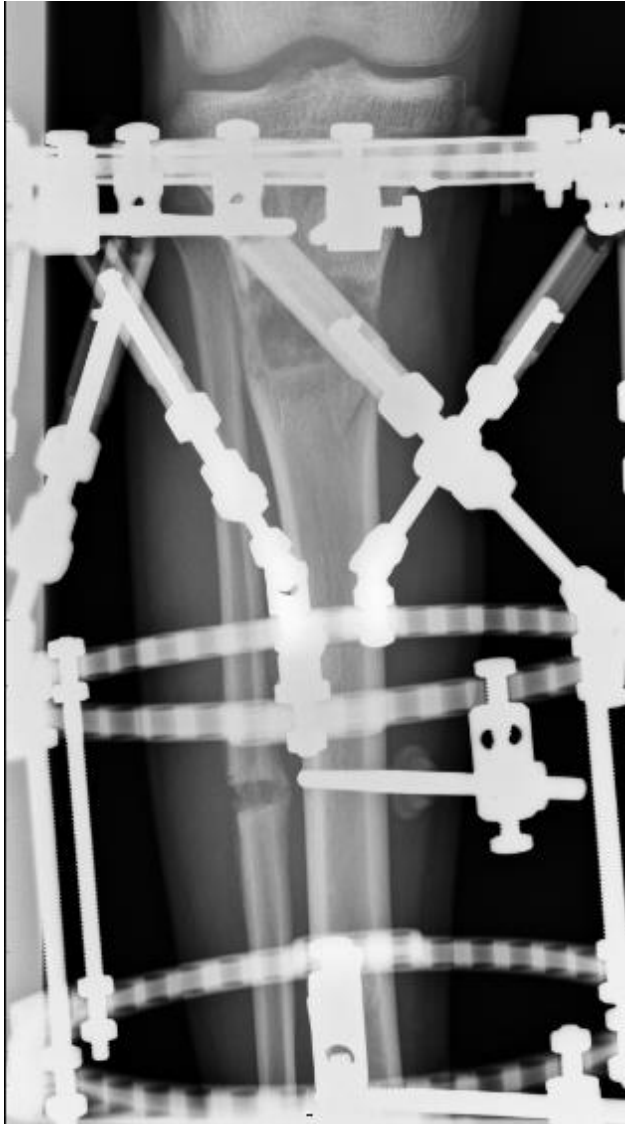
LLD: 3 cm

Valgus

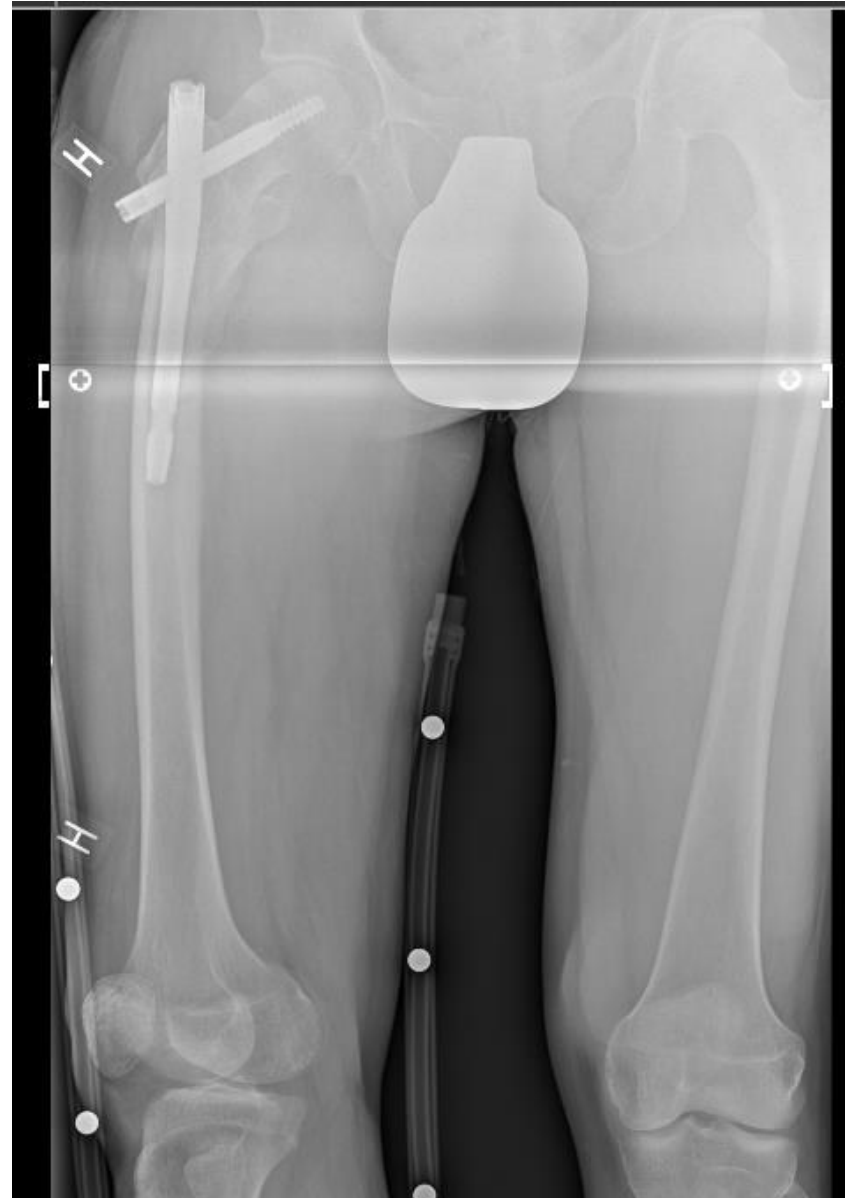
Genu recurvatum (PPTA: 110 degrees)



Gradual correction of deformities in all planes



Degree of malrotation is determined clinically





Take home message: MALUNION

Indications for surgery

Must have pain / functional deficit

Can YOU do it BETTER ?