

# External Fixators for Complex Cases about the Knee

Holiday Total Knee Course; New York City; December 7, 2012

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S. Robert Rozbruch, MD  
Attending Surgeon

Disclosure: { **I DO** } have a financial relationship with any commercial interest.

Smith and Nephew: consultant, royalties  
Small Bone Innovations: consultant, royalties

# Topics

- Extraarticular deformity
  - Osteotomy before arthroplasty
- Failed TKR with bone loss
  - Fusion + lengthening
- Severe deformity
  - Realignment
  - Alternative to TKR
  - Staged TKR
- Fracture about TKR
- Joint Distraction

# W. H. Auden, Poet 1907-1973

- ① **“Healing is not science but the intuitive art of wooing nature”**



# 25 year old: This may change her future





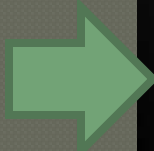
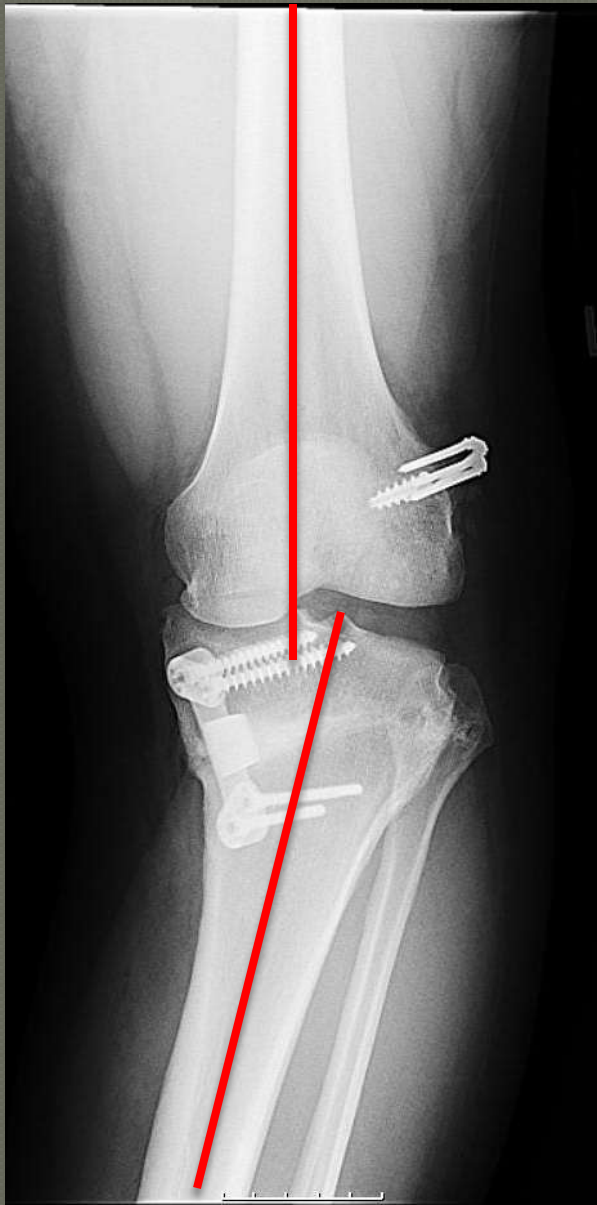


35 year old, femur + tibial deformity, LCL laxity, LLD, ACL laxity













**Blount's Disease**



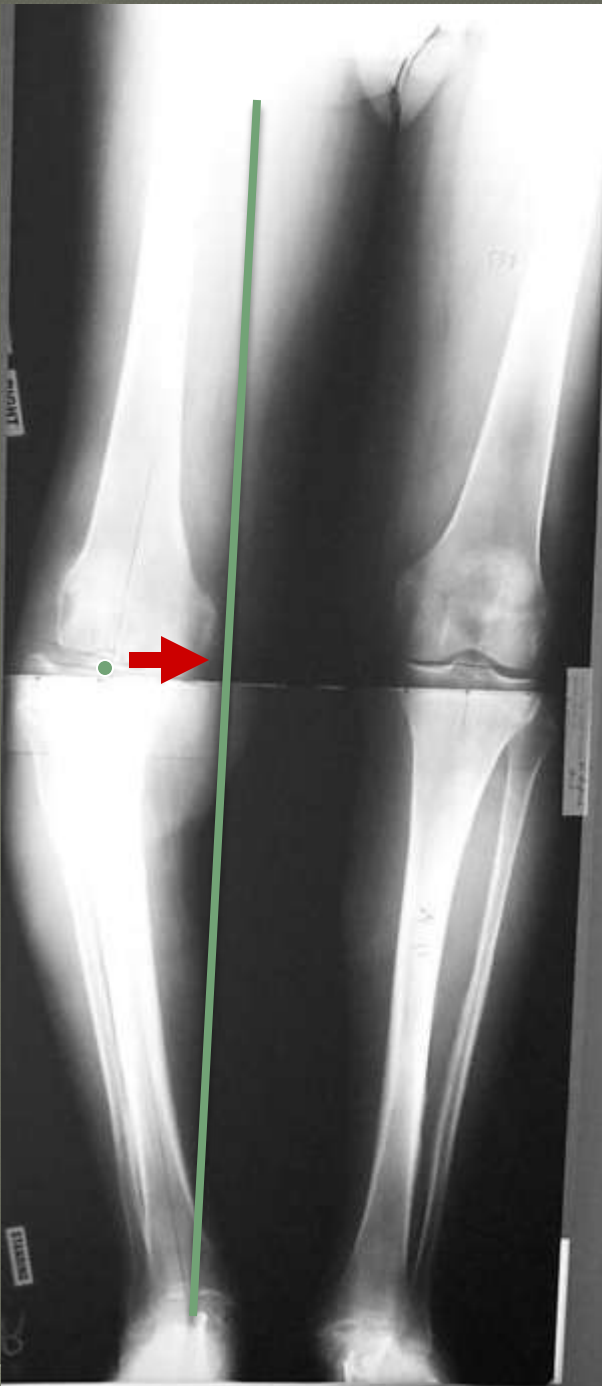






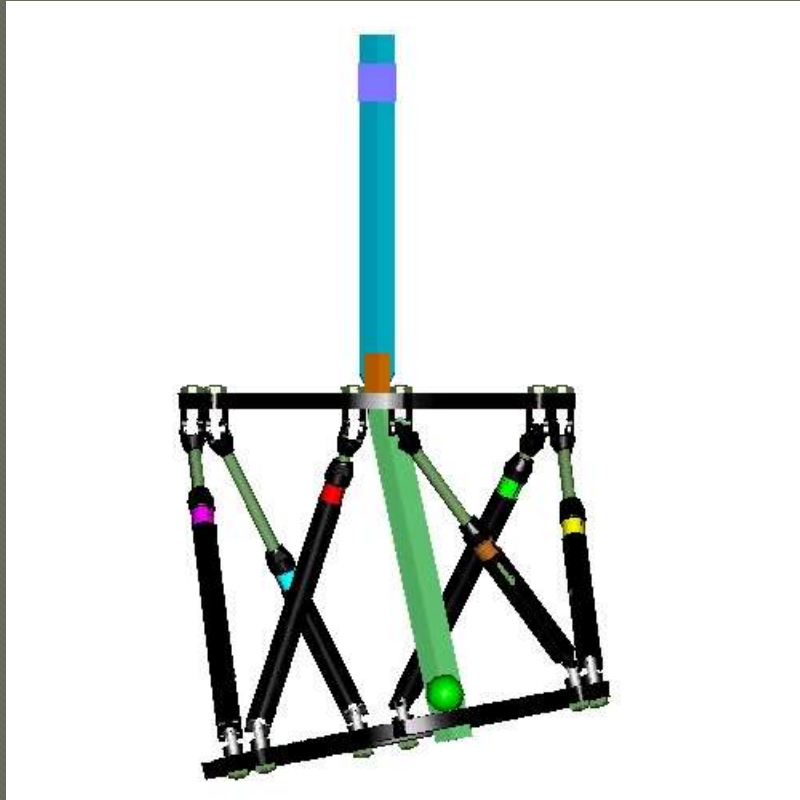




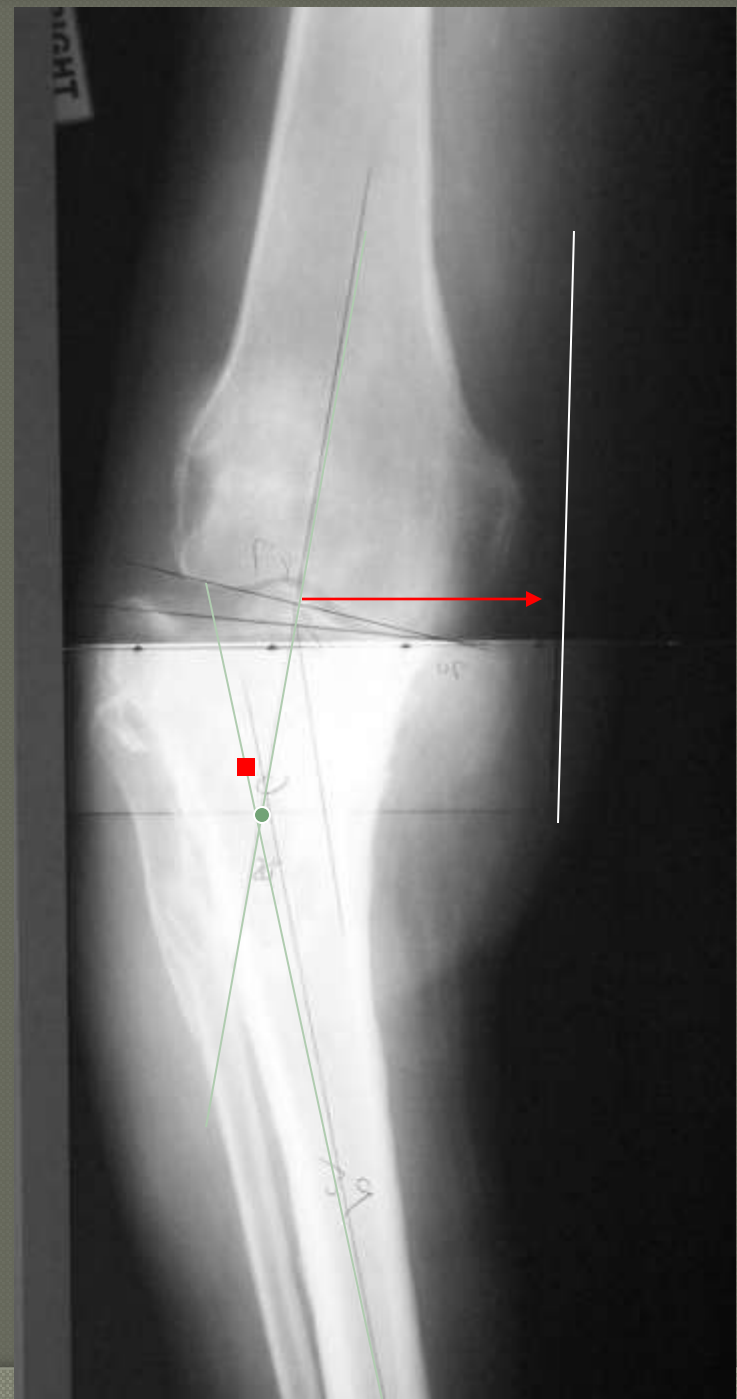


**FLAP:**  
**POOR soft**  
**tissue**





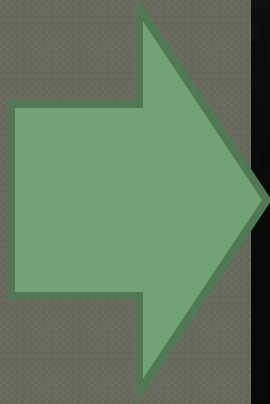
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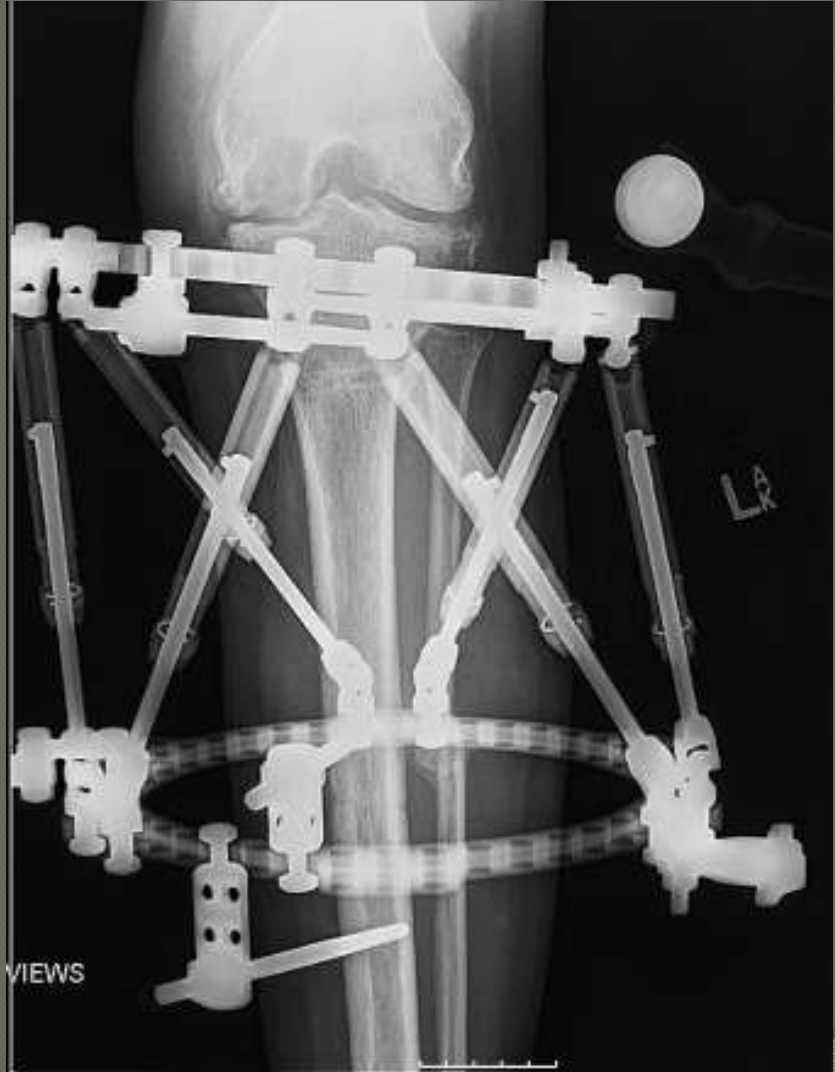


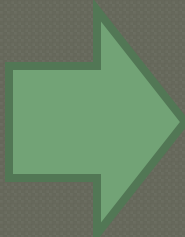


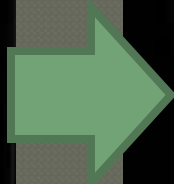








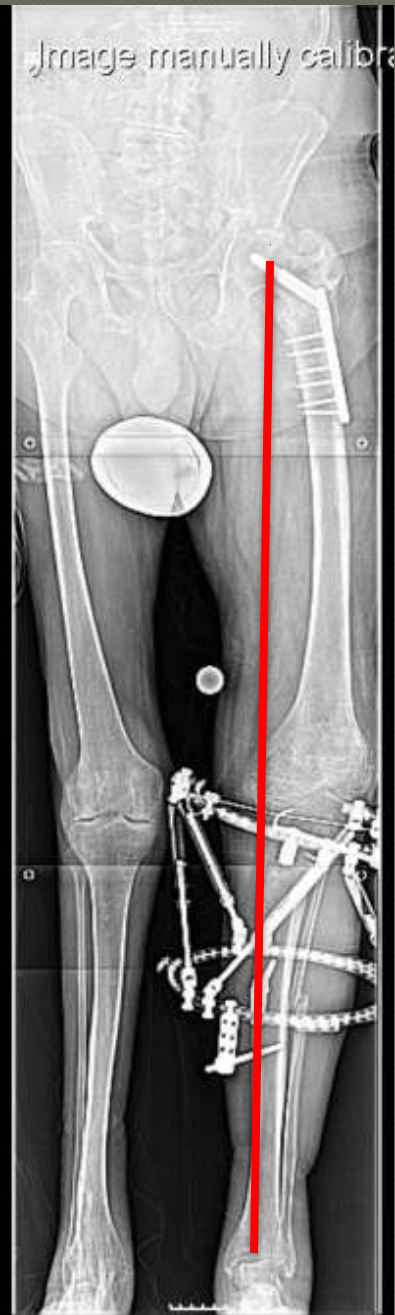










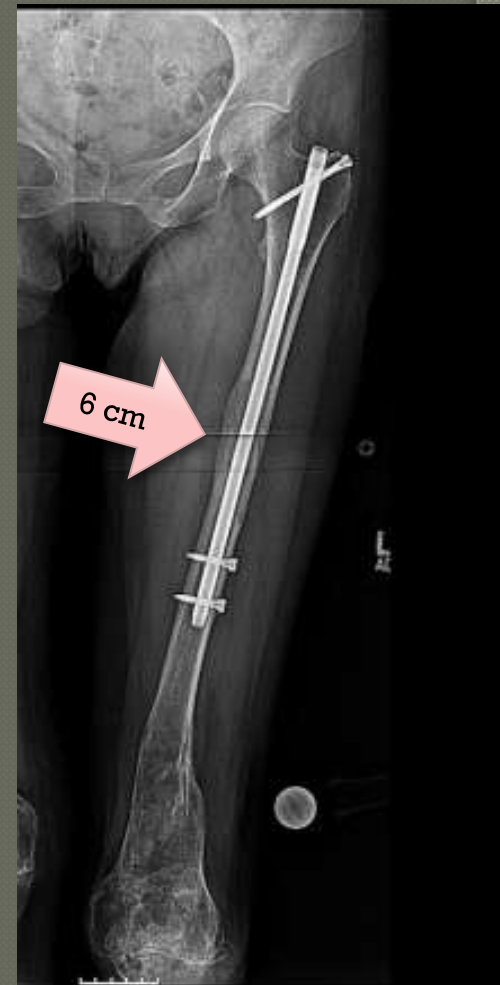














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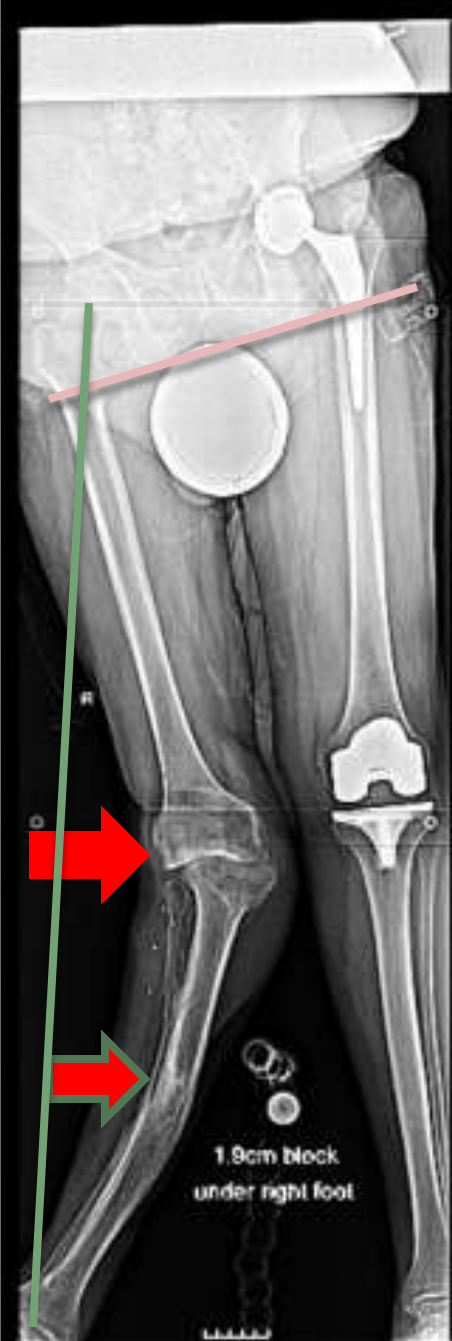




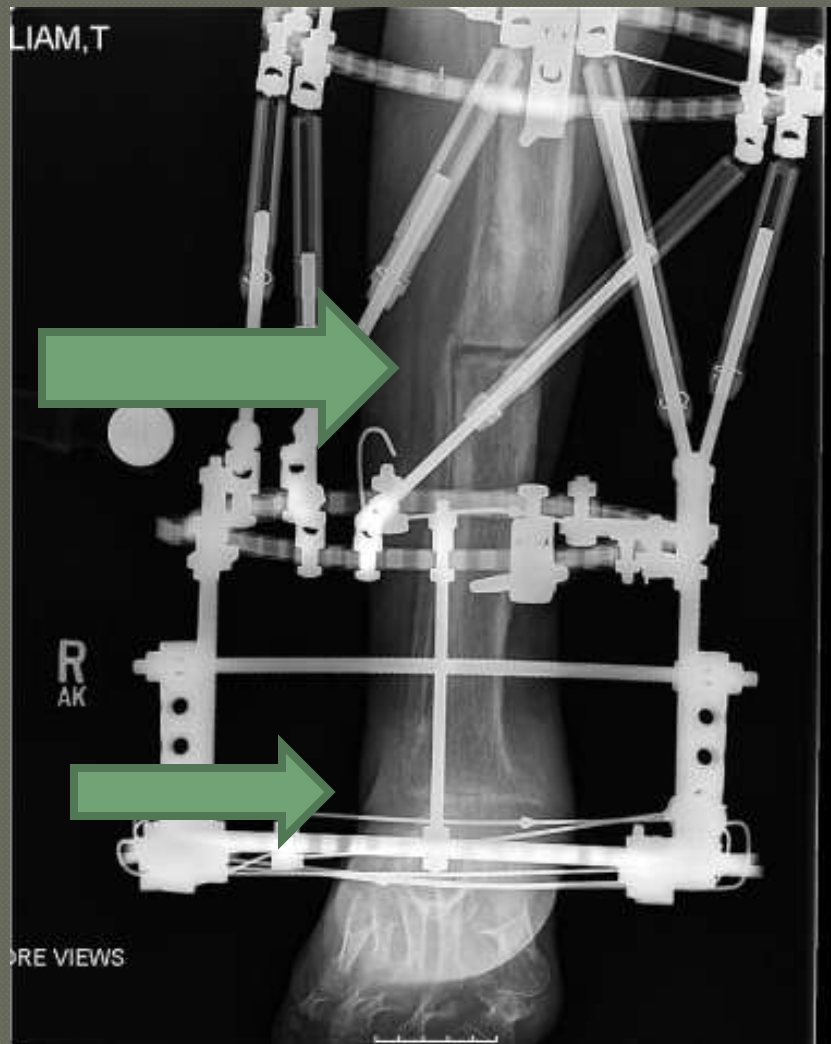










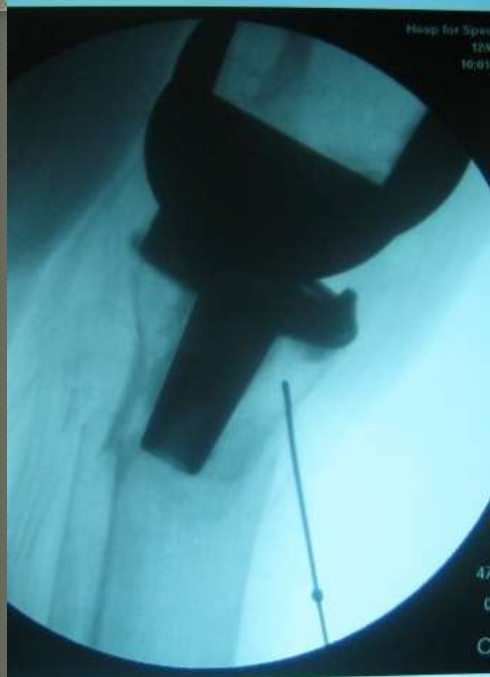










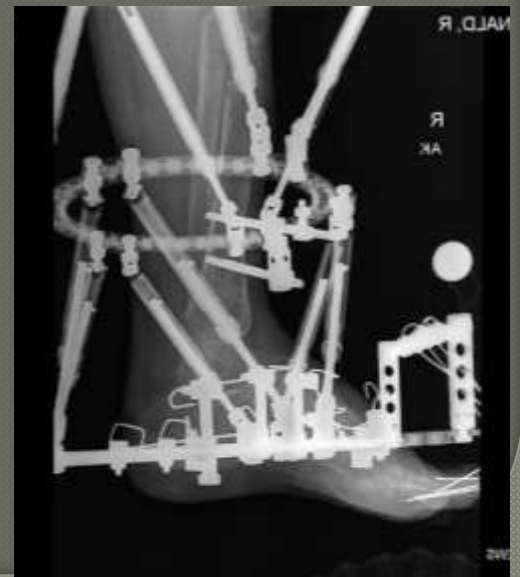
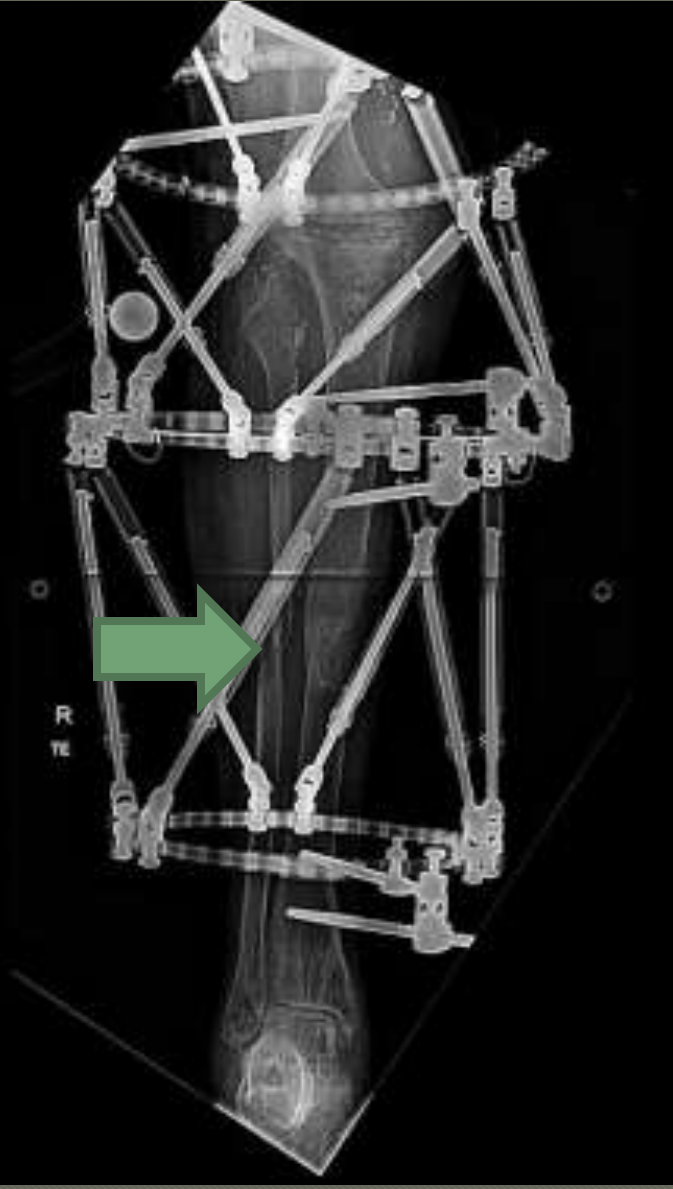
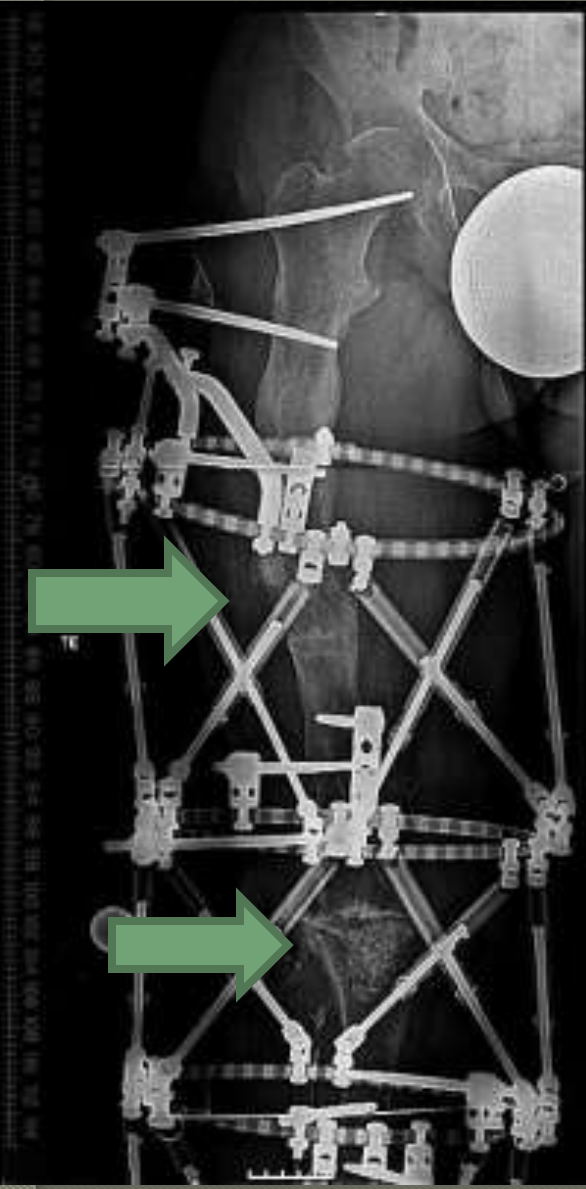










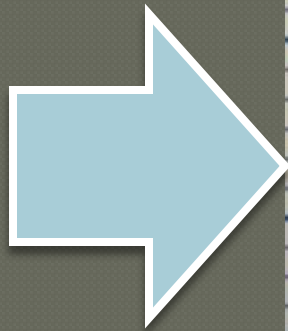








preop







## Joint Preservation of the Osteoarthritic Ankle Using Distraction Arthroplasty

Nazzar Tellisi, MD; Austin T. Fragomen, MD; Dawn Kleinman, BS; Martin J. O'Malley, MD; S. Robert Rozbruch, MD  
New York, NY

### ABSTRACT

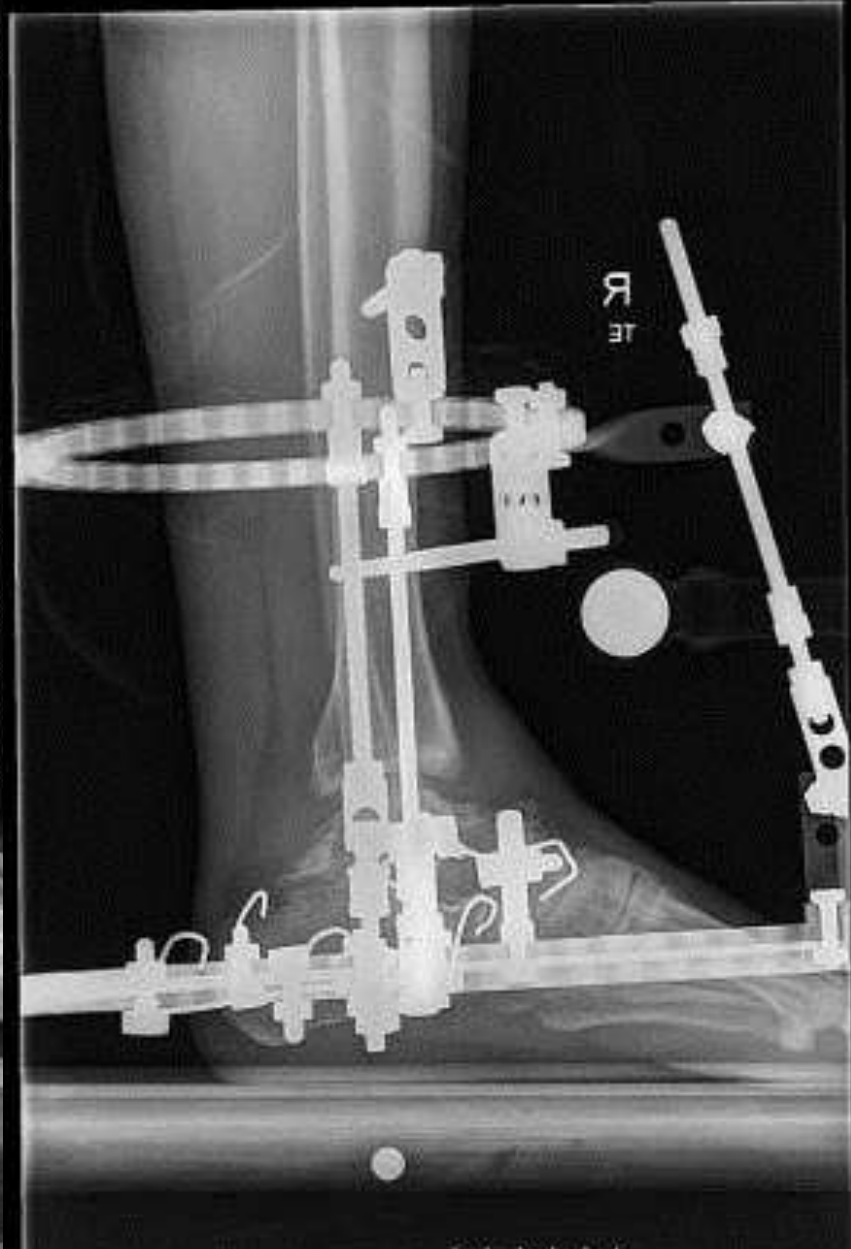
**Background:** In recent years ankle distraction arthroplasty has gained popularity in the treatment of ankle arthritis as a means of both maintaining range of motion and avoiding fusion. We present a retrospective review of 25 patients who have undergone ankle distraction from 1999 to 2006. **Materials and Methods:** The mean age was 43 years; 16 were male, and 7 were female. Followup was 30 months after frame removal (range, 12 to 60 months). We were able to obtain followup on 23 of 25 patients. Adjuvant procedures were performed in some cases including Achilles tendon lengthening (5), ankle arthroscopy (4), open arthrotomy (1), and supramalleolar tibial and distal fibular osteotomy to correct distal tibial deformity (6). **Results:** Twenty-one patients (91%) reported improved pain with those furthest post-op experiencing the best results. The average preoperative AOFAS score was 55 (range, 29 to 82), and the average postoperative score was 74 (range, 47 to 96). The difference between pre- and postoperative scores was significant ( $p = 0.005$ ). SF-36 scores showed modest improvement in all components. Only two of the patients in the study underwent fusion after ankle distraction. Total ankle motion was maintained in all patients with improvement in the

### INTRODUCTION

Ankle arthritis and its management remain a challenge. Ankle fusion continues to be a mainstay of treatment for ankle arthritis. However, fusion is not an optimal solution due to the loss of joint motion and subsequent development of degenerative arthritis of adjacent joints. Other disadvantages of arthrodesis include a substantial rate of malunion, nonunion, wound healing problems, loss of function, abnormal gait, and increased energy expenditures with ambulation.<sup>9</sup> Ankle arthritis is most commonly seen in patients as a post-traumatic sequelae.<sup>8</sup> Many patients were highly functional prior to their injuries and are reluctant to sacrifice the ankle motion following ankle arthrodesis. With the lack of encouraging long-term results from prosthetic ankle arthroplasty, other treatment modalities are sought.

Joint distraction arthroplasty, using a circular external fixator, is not a new approach in the treatment of arthrosis. Distraction arthroplasty was first implemented in the management of hip arthritis by Judet.<sup>2</sup> Van Valburg, et al.<sup>11-13</sup> later applied this concept to the arthritic ankle joint. The theory







preop



1.3 years later

preop



1.3 years later



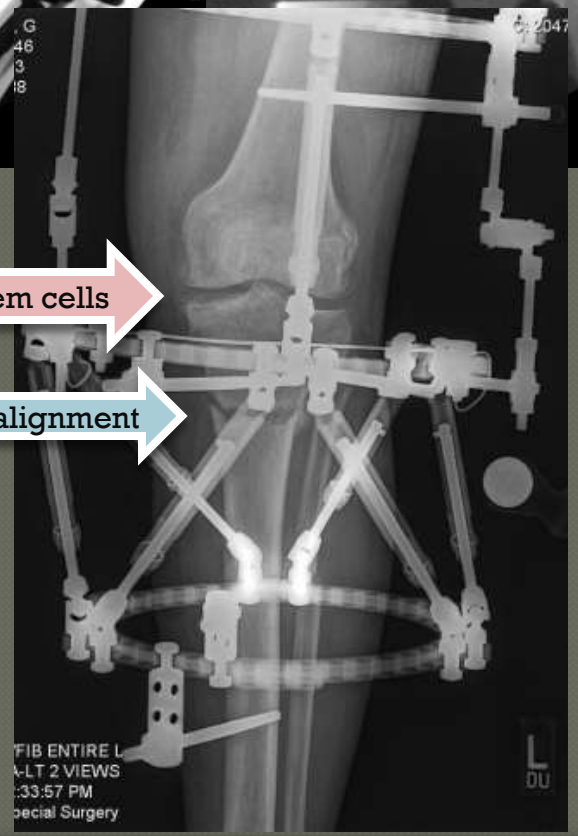
EMS, TRF\_GEMS, , ,  
ery MRD











Distraction + stem cells

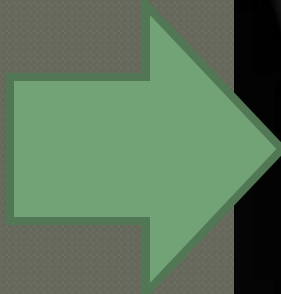
Osteotomy/ realignment





WS  
AM  
urgery





# Conclusion

- Some useful techniques that can be used to help you in your adult reconstruction practice.



# Thank You



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