Cases
Degustation menu

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Disclosures

- Consultant: Synthes, Bioventus
- Stock options: The Orthopaedic Implant Company, Amedica, MergeNet, Bur Oak Brewing Company
- Intellectual property: Intellectual Ventures
- Research support: Synthes

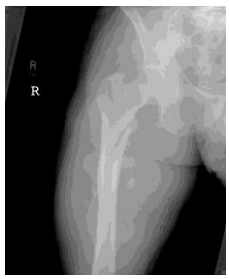
Menu

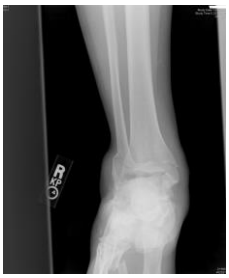
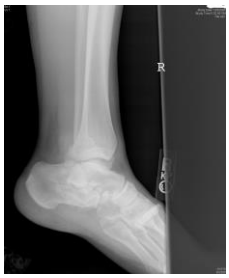
Complex lower extremity case

Lower extremity case

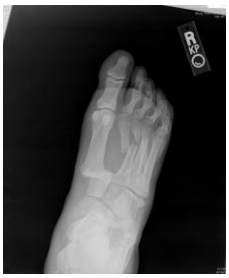
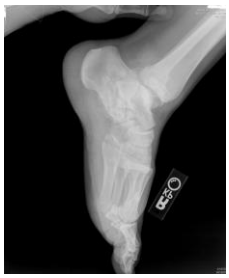
- 23-year-old s/p high-speed MVC, intoxicated and tox screen (+) for crystal meth
- Right leg pain, inability to bear weight

Lower extremity case



Lower extremity case

Lower extremity case

- Diagnoses:
  - Subtrochanteric R femur fracture
  - Subtalar R foot fracture-dislocation with impacted posterior calcaneal facet
  - Lisfranc fracture-dislocation R foot
  - Bimalleolar R ankle fracture
- Management tactic?
  - Acute femur fixation, staged foot/ankle fixation

Lower extremity case

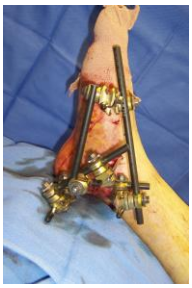
•Open reduction of subtrochanteric fracture

•Clamp applied to greater trochanteric extension

•Piriformis-entry nailing of fracture

•Reconstruction-mode locking of fracture

Lower extremity case

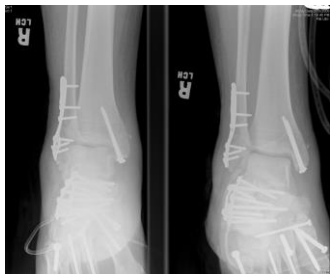


Open reduction of subtalar dislocation, closed reduction of midfoot, medial external fixation

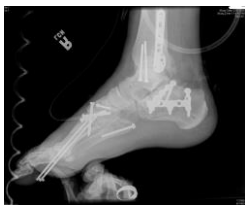
Lower extremity case

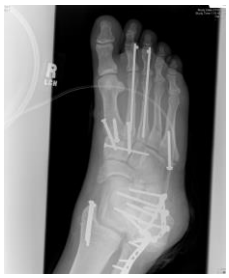
- 2 weeks later, edema resolved, patient transported to OR for:
  - Calcaneal lateral wall osteotomy with reduction of depressed posterior facet fracture and fixation with lateral plate
  - Open reduction with internal fixation:
    - Ankle fracture
    - Midfoot fracture-dislocation
  - External fixator removal

Lower extremity case



Lower extremity case





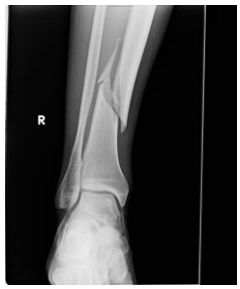
Home

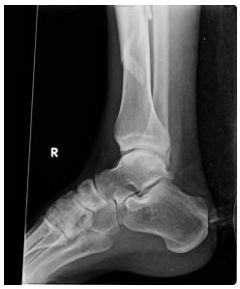
Complex tibia fracture

History

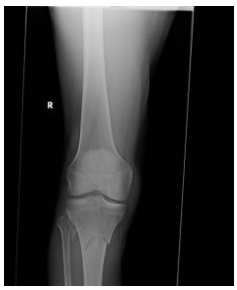
- 56-year-old otherwise healthy male
- Cutting a tree down, which then fell towards him, landing on his R leg
- Immediate pain throughout leg and deformity, inability to bear weight
- Open injury distally
- Neurovascular examination of foot normal
- Isolated injury

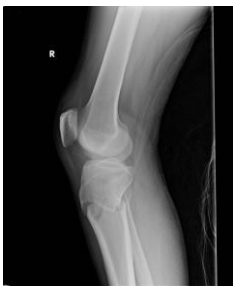
Injury images (open fracture)





More injury images





The problem

- Diagnosis: closed segmental R tibia fracture
  - Proximal fracture deformity: apex anterior (procurvatum)
  - Distal fracture deformity: varus with rotational instability

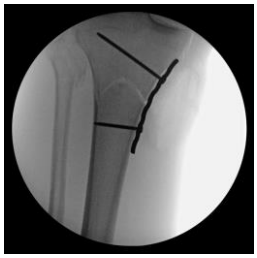
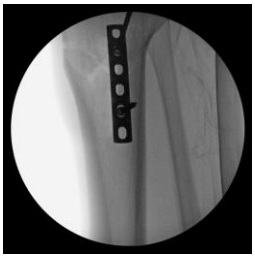
Considerations for treatment

- Control both fractures with single implant?
- If utilizing two implants, how should this be done to prevent problems?
- How to achieve and maintain reduction?
- Urgency of treatment?

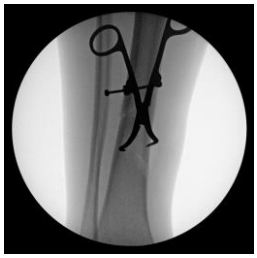
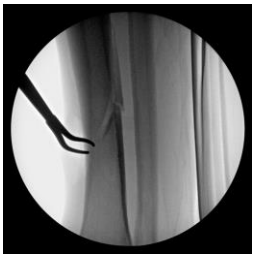
Surgical management

- Open reductions of both fractures
  - Posteromedial approach to proximal tibia
  - Elevate gracilis and semitendinosis without detaching them
  - Plate on posteromedial border of fracture with posteriorly-directed screws
  - Anterolateral exposure of distal fracture
  - Direct reduction with pointed forceps
  - Monocortical plate on tibial crest with short screws

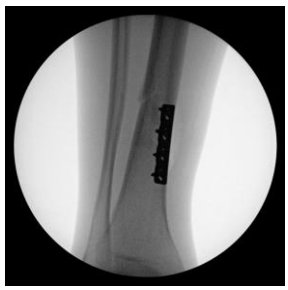
Application of plate to proximal fracture line

Direct reduction of distal fracture

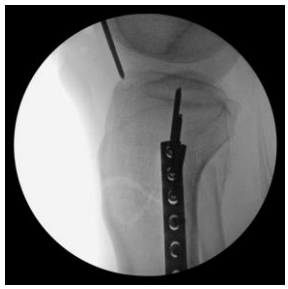
Anterior monocortical plate application



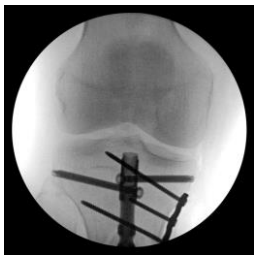
Nailing procedure

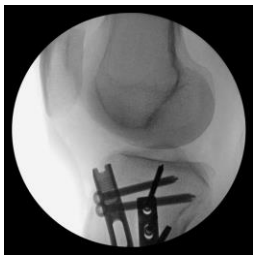
- Fractures provisionally aligned
- Semi-extended approach to nailing
- Midline incision, medial parapatellar arthrotomy, sublux patella laterally

Starting point for nail – plate posterior allows for anterior nail passage

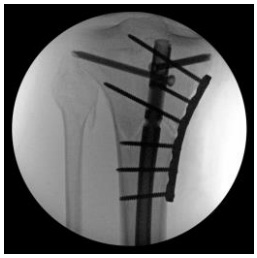
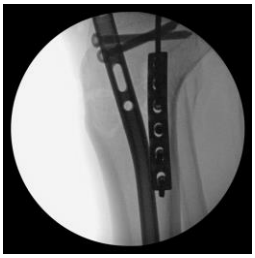


Final images - knee

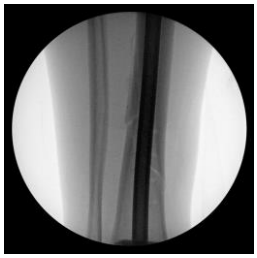
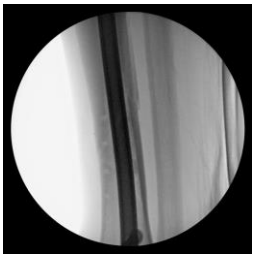




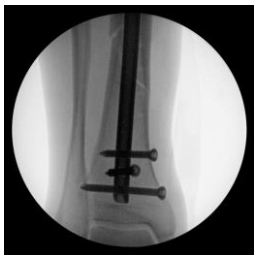
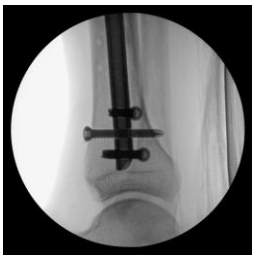
Final images – proximal fracture

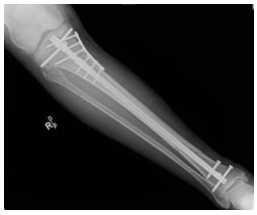
Final images – distal fracture

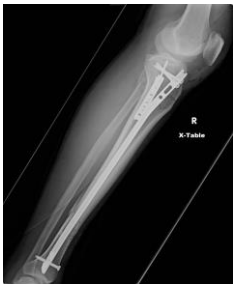



Final images - ankle

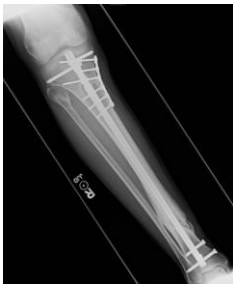



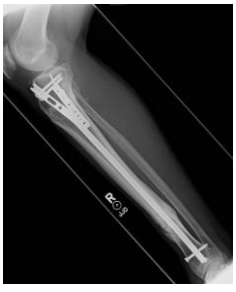
Postoperative radiographs





9 months out



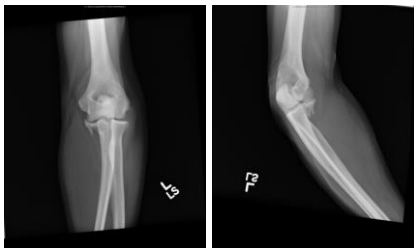


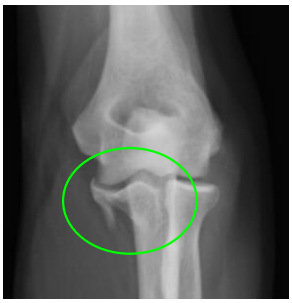
Home

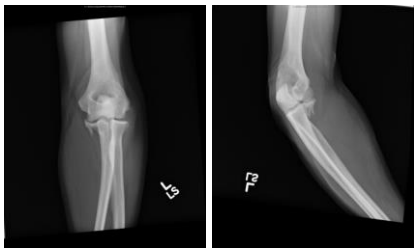
Elbow fracture-dislocation #1

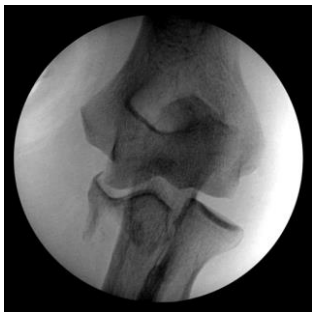
AA

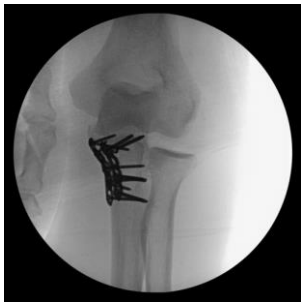
- 75-year-old male fell and sustained isolated left elbow injury
- Severe pain and difficulty moving elbow
- No numbness
- No other injuries
- Patient lives alone, farms, has not seen a doctor in many decades

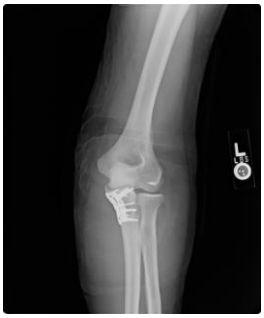








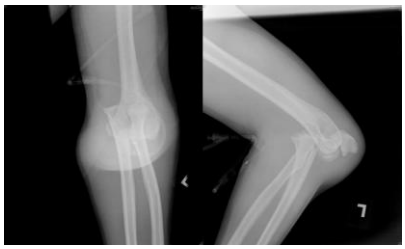


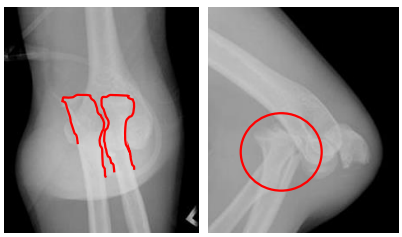


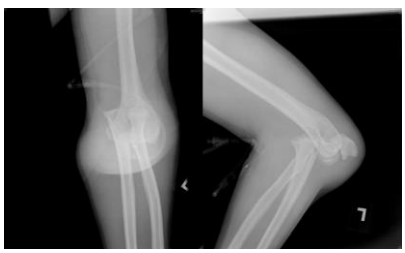
Home

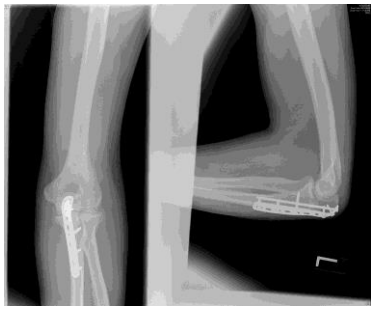
Elbow fracture-dislocation #2

- 22 year old male, fell while running on a trail onto a log with his outstretched left arm
- Immediate left elbow pain
- No other injuries
- No numbness
- Hand well perfused







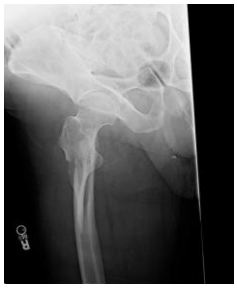


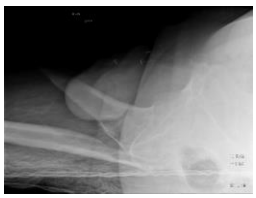
Home

Lower extremity Case #1

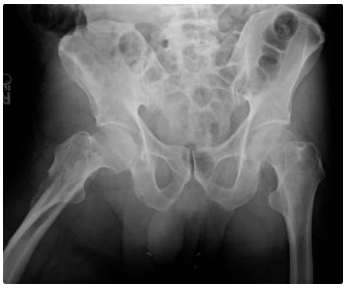
- 58-year-old army contractor working in Afghanistan twists and falls from standing, right thigh pain
- Evacuation to local VA hospital then transfer for definitive management 8 days post-injury

Case #1





Case #1



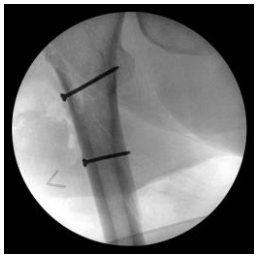
Case #1

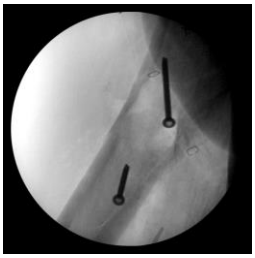
- Low-energy subtroch fracture in otherwise healthy individual

Case #1

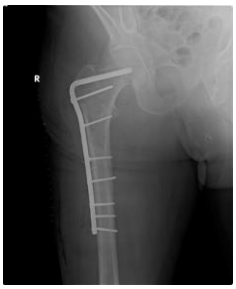
- Low-energy subtroch fracture in otherwise healthy individual
- X-rays demonstrate lytic lesion at fracture site
  - Verified with CT
  - No skip lesions on MRI
  - No pulmonary lesions on CT
- Plan?
  - Nail vs plate?
  - Direct vs indirect reduction?

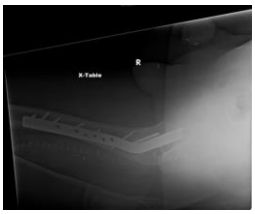
Case #1





Case #1

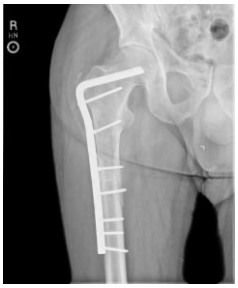


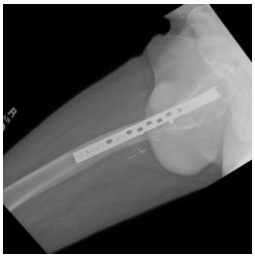


Case #1

- Soft, gelatinous mass noted within proximal femur at fracture fixation
- Biopsy: dedifferentiated chondrosarcoma
  - Bony primary lesion
  - No metastases identified with full workup
- Patient undergoing radiotherapy at this time, likely will require proximal femoral replacement or, more likely, amputation

Case #1 – follow-up at 12 weeks



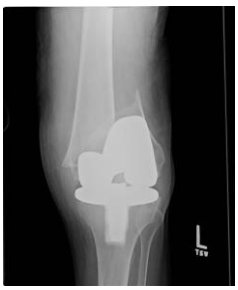


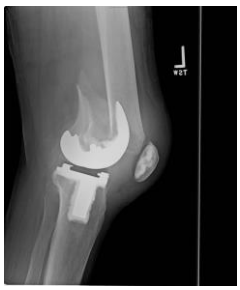
Home

Case #2

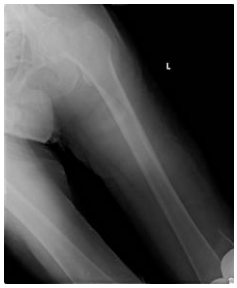
- 55-year-old male involved in motorcycle crash
- Isolated left knee injury
- L total knee arthroplasty 3 years prior

Case #2





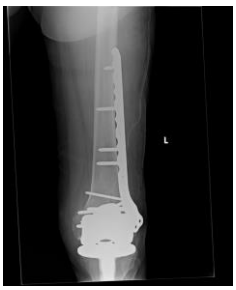
Case #2

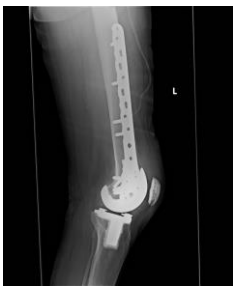


Case #2

- Periprosthetic distal left femur fracture above TKA prosthesis
- Plan?
  - Plate vs. nail
  - Indirect vs. direct reduction

Case #2 – direct reduction

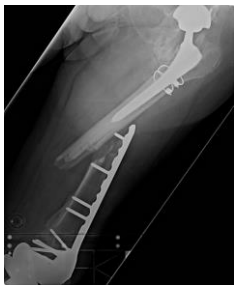


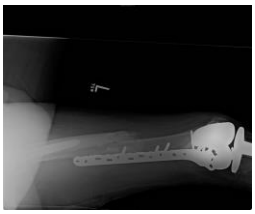


Case #2

- Patient heals, presents three years later with new onset of left thigh pain and inability to bear weight

Case #2

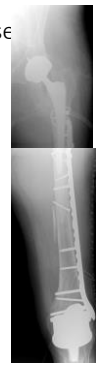


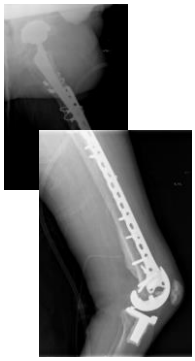


Case #2

- Why did this happen?
- What to do now?

Case



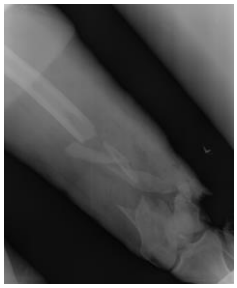


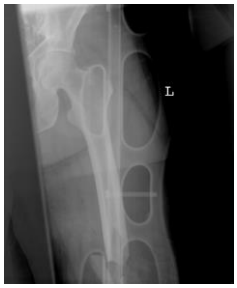
Home

Case

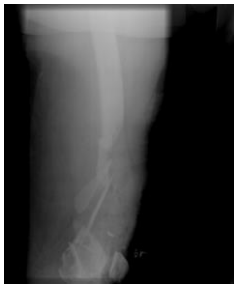
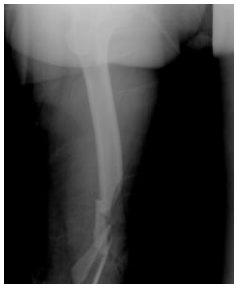
- 49-year-old male s/p MVC with isolated left lower extremity open injury
- Pulseless left foot, sluggish capillary refill, substantial ongoing hemorrhage from wound
- No other injuries
- Acute shock with labile BP

Case #1





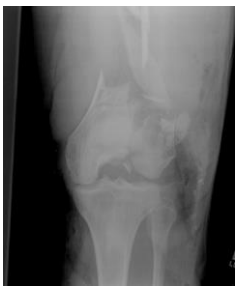
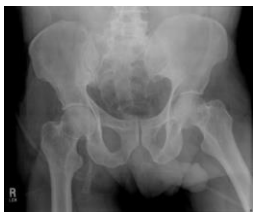
Case #1

Case #1

- Now what?

Case #1

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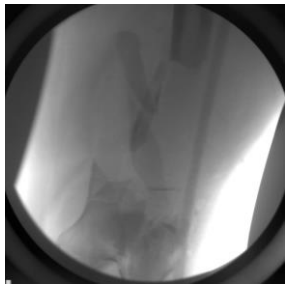
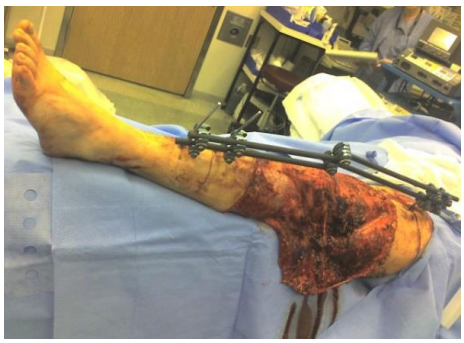


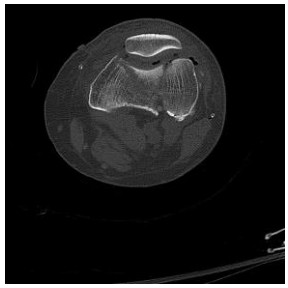
Case #1



Case #1

- Vascular surgery exploration
  - 2 venotomies in superficial femoral vein – vein ligated
  - Angiogram
  - Proximal popliteal artery occlusion
    - Angioplasty
    - Stent placement
- Debridement revealed substantial contamination (glass, paint, plastic, dirt)

Case #1



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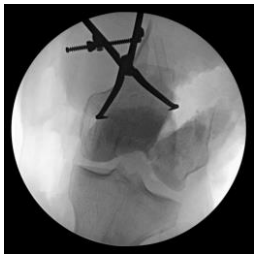

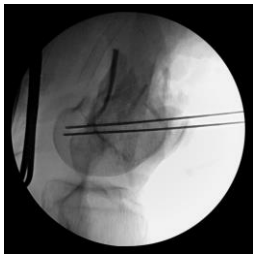

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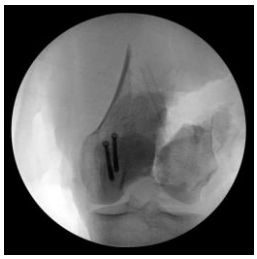
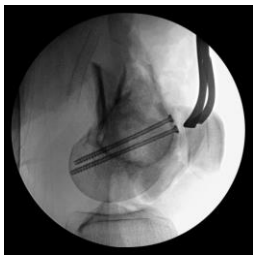
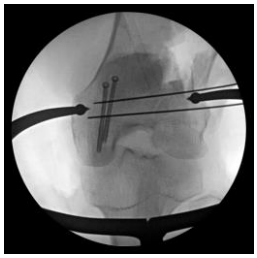
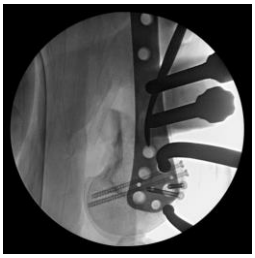
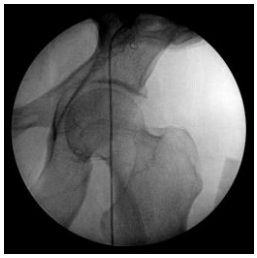
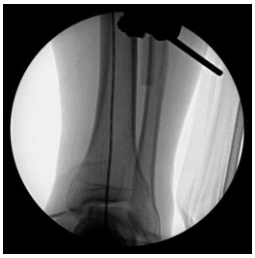




Case #1

Case #1

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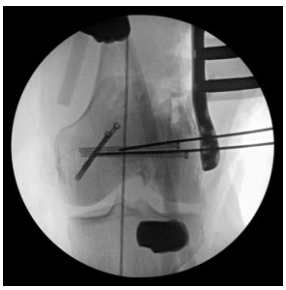
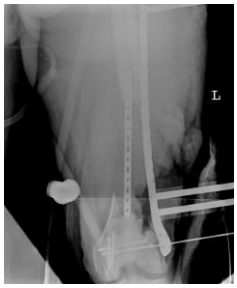
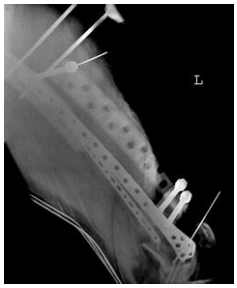


Case #1

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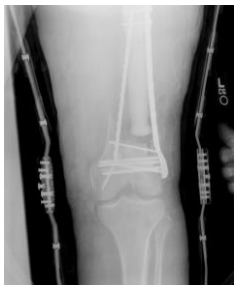
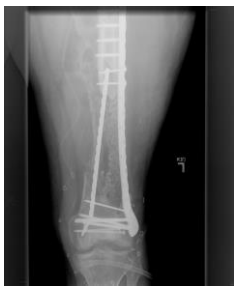


Case #1



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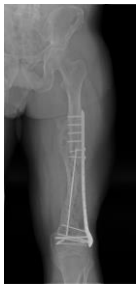
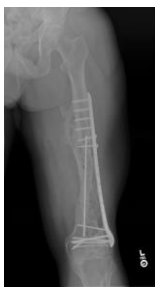
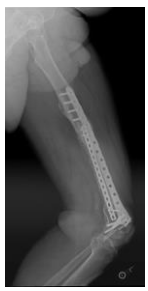


Case #1



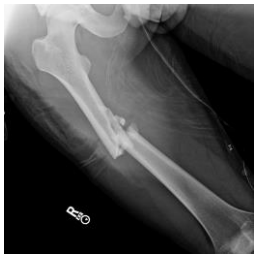


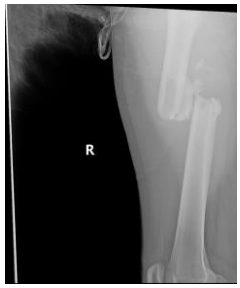
Home

Case #2

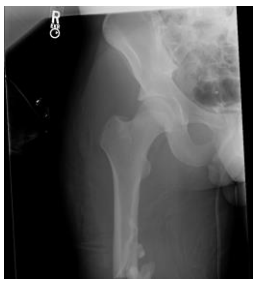
- 18-year-old male on a college dormitory roof (4 stories)
- Cops arrived, he did not want to be caught on the roof
- Jumped into a tree but missed catching the intended branch
- Fall ~40 feet onto concrete
- Expanding epidural hematoma, closed R olecranon fracture, open R femur fracture

Case #2





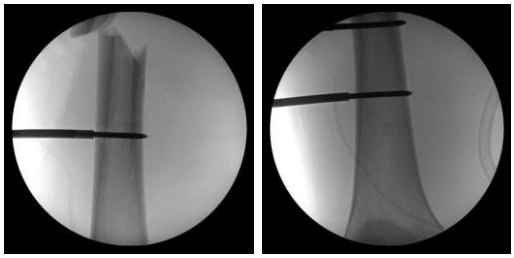
Case #2



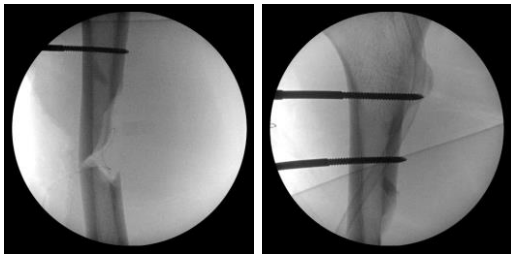
Case #2

- 3cm lateral thigh laceration
- Patient in OR undergoing ligation of middle meningeal artery
- What now?

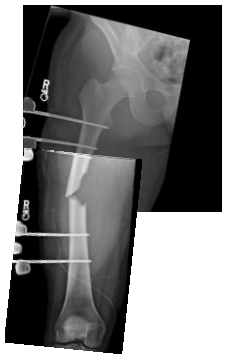
Case #2



Case #2



Case #2

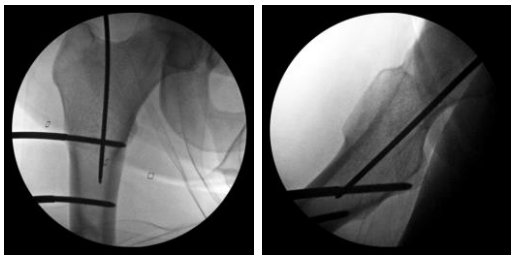


Case #2

Case #2

- POD#5, patient has stabilized, is awake, and off ICU
- Now what?
- The problem:
  - Femur fracture not yet (?) definitively stabilized
  - Patient is stable
  - Bone loss at femur

Case #2



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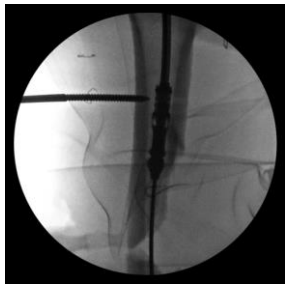
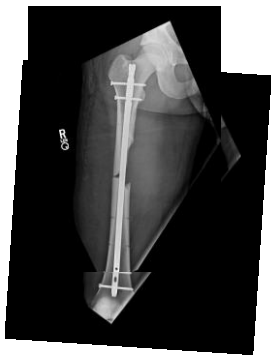
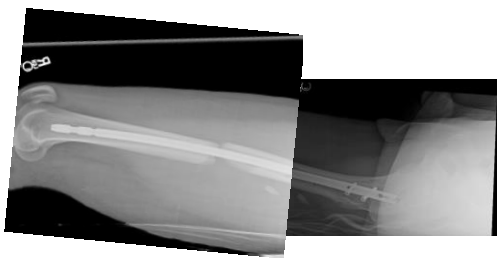


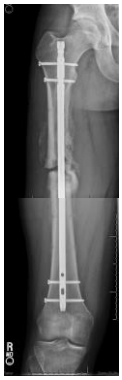
Case #2



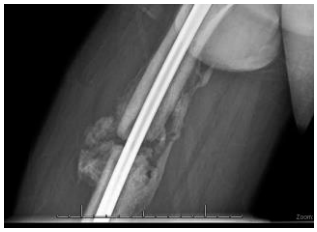
Case #2



Case #2



Case #2



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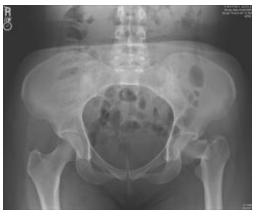
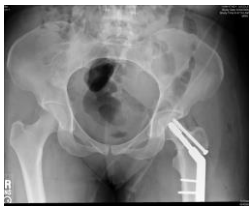
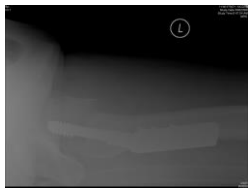
Young adult femoral neck fracture

- 22 yo army recruit
- A few weeks of pain while running during basic training
- Felt a painful pop while running, unable to bear weight

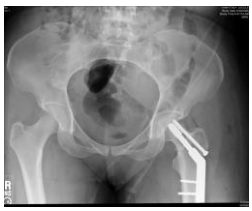


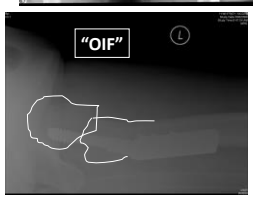
- Basicervical femoral neck fracture
- "Fixed" at military facility with closed reduction and perc plating
- "Problem" recognized on postoperative films

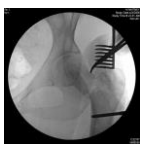


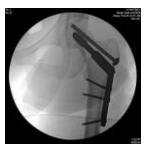


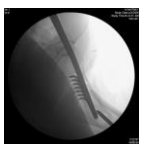
- "Fixed" at military facility with closed reduction and perc plating
- Problem recognized on postoperative films

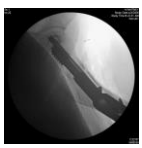


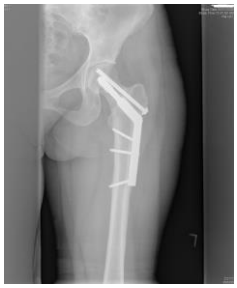


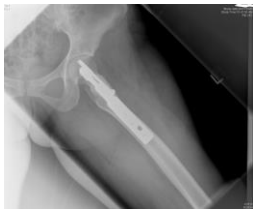












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