30th Annual Trauma Update 2018

Schatzker VI Tibial Plateau Fracture

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ED presentation

HPI: 46 yo M presents to the ED 1 day following a dirtbike accident – lost control going ~10mph, tried to plant foot on the ground and felt a sudden sharp pain and was unable to bear weight. Presented to urgent care center the following day, subsequently referred to ED when tibial plateau fracture was seen on radiographs.

PMH: Denies

PSH: ORIF of broken jaw

SH: + tobacco, + cocaine

Meds: none

Exam: skin intact, compartments soft, NVI distally, lax to valgus stress at 0 and 30 degrees

Imaging: X-rays, CT scan – Bicondylar tibial plateau fracture

Plan: ORIF

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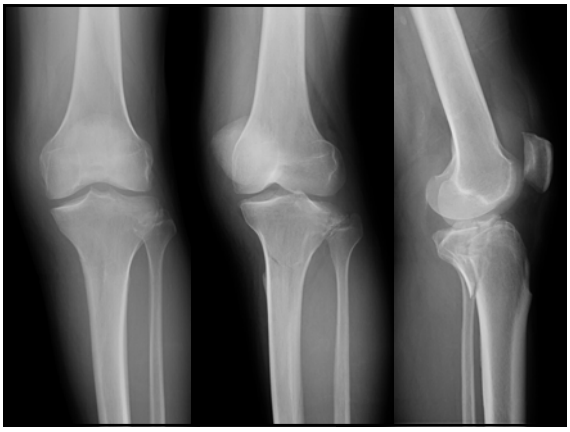

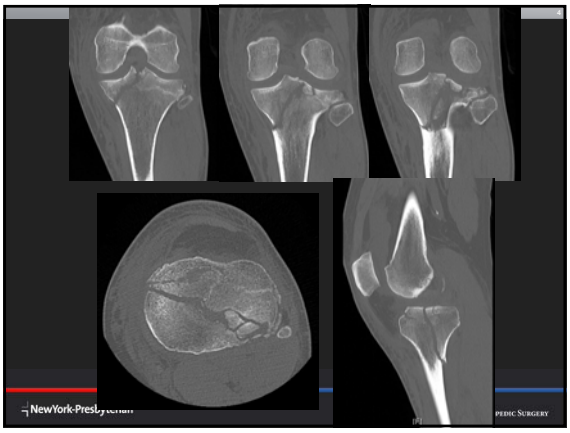

Operative Course

Antibiotics: Clindamycin 900mg (penicillin allergic)

Surgical time: 2h 59 min

Tourniquet time: 120 minutes

Anesthesia Duration: 3h 44min

EBL: 300 cc

Medial approach first – attempted to use buttress plate to reduce fracture which was unsuccessful. Needed to release pes tendons off, free and elevate fragment, provisionally held with reduction clamp and K-wire and then placed medial buttress plate. Pes tendons repaired with #2 fiberwire. Closed deep layer over plate, skin left open.

Lateral approach second – did not visualize joint line, clamped fragment to restore normal width of plateau and placed a non-locking lateral plate.

Wound closed in layers and incisional vac placed over medial and lateral wounds. Placed in hinged knee immobilizer and made NWB post-op.

Post-operative course was uneventful.

POD#0 – pain controlled, no evidence of compartment syndrome, 2+

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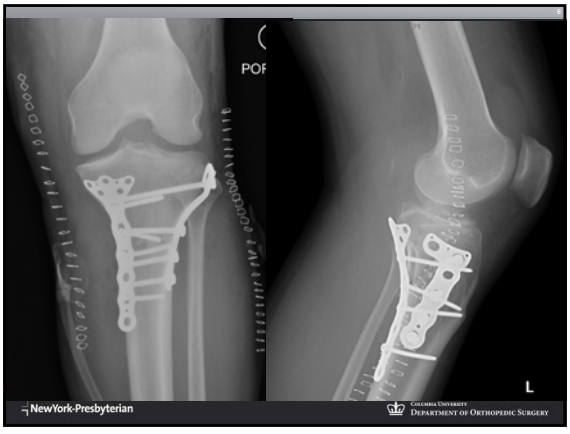

Postoperative Course

Post-operative hospital stay was uneventful.

POD#0 – pain controlled, no evidence of compartment syndrome, 2+ DP/PT pulses, NVI distally.

POD #1 – Incisional vac 40cc output. Ambulated 150 feet with PT. Pain controlled. Discharged home. ASA for DVT ppx.

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Follow-up visit #1
1.5 weeks post-op

Seen in clinic –

Still having some pain. Endorsed scant purulent drainage from medial incision the morning of clinic visit, had not noticed any drainage prior to today. Had been wearing brace against bare incision. Had not showered since hospitalization.

Exam:

Lateral incision well healed – staples removed

Medial incision with wound healing issues and scant purulent drainage from distal aspect of incision.

Leg swollen, compartments soft, NVI distally

ROM 5-90 degrees

Plan:

Discontinue brace

Wash with soap and water daily

Keflex x 1 week

Continue NWB LLE

RTC 1 week

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Follow-up visit #2
2.5 weeks post-op

Seen in clinic –

Minimal pain, maintaining NWB, completed 1 week course of Keflex, showering daily.

Exam:

Medial incision well healed, no peri-incisional erythema, no drainage, staples removed

Leg swollen, compartments soft, NVI distally

ROM 10-90 degrees

Plan:

Maintain NWB

RTC 2-3 weeks

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10

Follow-up visit #3
6 weeks post-op

Seen in clinic –

Minimal pain, no wound issues, no fevers/chills, maintaining NWB.

Exam:

Wounds healing well, no sign of infection at medial incision

AROM 10-90, NVI distally

Plan:

Advance to PWB LLE with crutches

PT for L knee ROM exercises

RTC 4 weeks

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11

ED visit
7.5 weeks post-op

Presents with 1 day of bleeding from medial incision after walking. Endorses pain at medial incision and down leg, denies numbness/paresthesias.

Exam:

Medial incision with some bleeding from distal aspect of incision, no purulence or other signs of infection. Leg swollen, no concern for compartment syndrome. 5/5 strength and SILT over leg and foot. Palpable DP and PT pulses.

Labs & Imaging:

H/H: 11.0/33.8, WBC: 8.55 (nl 3.12-8.44)

ESR: 26 (nl 0-15), CRP: 32.5 (nl 0-10)

X-rays – no hardware related complications, maintained alignment

Duplex ultrasound negative for DVT

Plan:

Discharge home with daily dry gauze dressing changes to medial incision

Keflex x1 week

NWB LLE with crutches

RTC 1 week for wound evaluation

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12

ED visit
8 weeks post-op

Returned to the ED 3 days later with continued bleeding from medial wound.

Exam:

Medial incision with some bleeding from distal aspect of incision, no purulence or other signs of infection. Leg swollen, no concern for compartment syndrome. 5/5 strength and SILT over leg and foot. Palpable DP and PT pulses.

Labs & Imaging:

H/H: 11.0/34.6 (stable from 11.8/33.8), WBC: 10.03 - 78.2% neutrophils (up from 8.55)

ESR: 25 (stable from 26), CRP: 4.20 (normalized from 32.5)

Utox + for cocaine

X-rays – hardware in place, maintained alignment

CT scan LLE – hardware in place, large high attenuation fluid collection posterior and medial to the tibia that measures approximately 9.2 x 6.8 cm.

Plan:

Admit for I&D of medial wound

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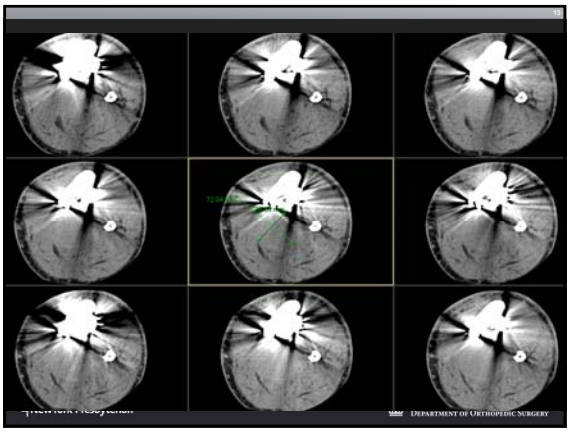

I+D, Removal of Hardware 10/27

-Medial, partially dehisced incision was explored, large hematoma was encountered and evacuated. Cultures taken

-Posteromedial plate removed uneventfully.

-No significant bleeding encountered (tourniquet up)

-Vac sponge placed, tourniquet down, no significant bleeding so drapes removed and patient prepared for extubation

-Brisk bleeding noted into vac cannister. Tourniquet reinflated and wound reexplored, brisk bleeding from posterior tibial artery noted

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-Bleeding controlled with vascular clamps

-Posterior tibial artery was ligated after intact distal flow noted via doppler assessment

-After hemostasis achieved, Wound unable to be closed primarily, packed with kerlix and a JP drain.

-2+L EBL, 4u pRBC transfused intraoperatively.

-Extubated and transferred to the PACU

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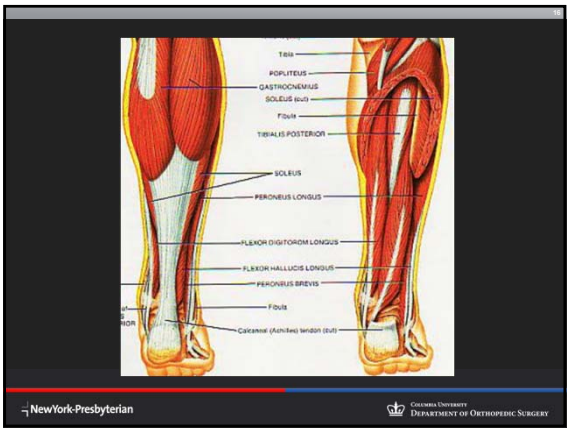
Tibia
POPLITEUS
GASTROCNEMIUS
SOLEUS (cut)
Fibula
TIBIALIS POSTERIOR
SOLEUS
PERONEUS LONGUS
FLEXOR DIGITORUM LONGUS
FLEXOR HALLUCIS LONGUS
PERONEUS BREVIS
Fibula
Calcaneal (Achilles) tendon (cut)
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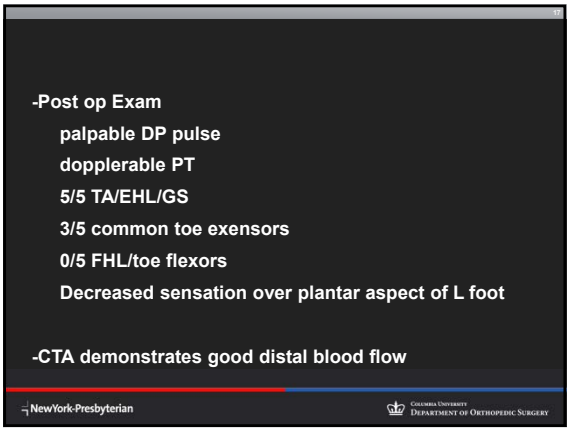
-Post op Exam
palpable DP pulse
dopplerable PT
5/5 TA/EHL/GS
3/5 common toe exensors
0/5 FHL/toe flexors
Decreased sensation over plantar aspect of L foot
-CTA demonstrates good distal blood flow
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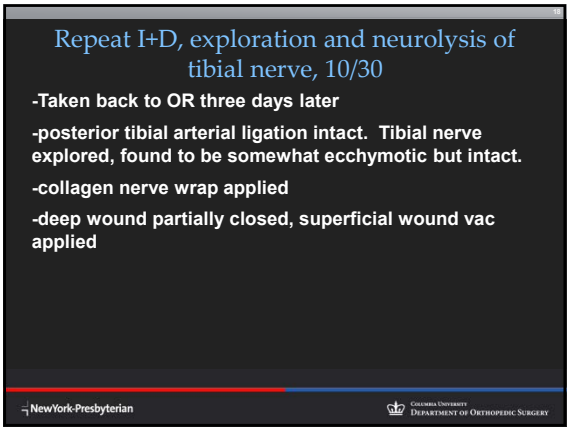
Repeat I+D, exploration and neurolysis of tibial nerve, 10/30
-Taken back to OR three days later
-posterior tibial arterial ligation intact. Tibial nerve explored, found to be somewhat ecchymotic but intact.
-collagen nerve wrap applied
-deep wound partially closed, superficial wound vac applied
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Repeat I+D, partial closure – 11/3

-Taken back to OR for repeat evaluation and closure

-All but central ~1cm portion of wound able to be primarily closed after raising local soft tissue flaps and mobilizing the gastrocnemius and soleus. Covered with incisional vac

-Discharged with home vac services, vanc+ceftriaxone via PICC (MSSA, coag neg staph in cultures)

-At last followup, wound healing well, sensation and motor function 4/5

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Thank You

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