

Intro by:

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0:00 Introduction

1:40 ACL Injuries & Rehabilitation in Women: Gender Specific Issues  
(Mary Ireland, MD)

2:20 HISTORY & PHYSICAL

- CC: Thigh pain and swelling
- History: 16 year old high school male football athlete presented to ER with 3 days of worsening thigh pain
  - Previous direct blow to thigh 1 week prior
  - Initially had minor pain and swelling that resolved the next day
  - Returned to play 4 days prior to presentation (actually played in football game and practice)
  - Woke up the next morning with thigh pain and swelling, which had progressively worsened over the last 3 days
  - He now said he couldn't walk because of the intense pain

3:19 PHYSICAL EXAM

- Swelling and palpable fullness of anterior thigh
- Knee ROM 0–20
- 1/5 Quad Strength, 5/5 Distally
- Decreased subjective sensation over anteromedial thigh and knee
- Extreme pain with passive stretch
- 2+ DP/PT pulses, symmetric with contralateral side

4:00 LABORATORY TESTS

- Hemogram
  - WBC: 14.2
  - Hemoglobin: 12.4
  - Hematocrit: 37.3
- Coags:
  - PT/INR: 16.6/1.6
  - PTT: 33

4:40 IMAGING

5:04 DISCUSSION

5:53 DIFFERENTIAL DIAGNOSIS

- Simple contusion
- Thigh hematoma
- Quadriceps muscle strain
- Anterior cruciate ligament injury
- Femur fracture
- Delayed onset compartment syndrome

#### 7:40 TREATMENT

- Decompressive Fasciotomy

#### 7:46 INTRAOPERATIVE FINDINGS

#### 8:41 LITERATURE

- 17 year old male, direct blow to thigh
- 24 hours later, exam in the ER demonstrated “tense, rock-hard anterior thigh” and “10–50 degrees of flexion”
- Sensation decreased over anteromedial thigh
- “Thigh compartment syndrome should be considered when any athlete suffers a direct blow to the anterior thigh with subsequent swelling, unrelenting pain, and loss of knee range of motion.”

#### 9:17 COMPARTMENT SYNDROME

- The “True Orthopaedic Emergency”
- Intracompartmental pressure exceeds perfusion pressure
- 6 P’s of Compartment Syndrome
  - Pallor
  - Pain
  - Paresthesias
  - Paralysis
  - Poikilothermia
  - Pulselessness

#### 10:00 COMPARTMENT SYNDROME IMAGES

#### 10:50 LITERATURE

- 41% from MVC or MCC
- 49% had femur fractures
- 21% had coagulation deficiencies

#### 11:11 FURTHER WORK-UP

- Pediatric Heme-Onc Consulted
  - Coagulopathy Panel Ordered
  - vWF: Normal
  - Platelet Function: Normal
  - Factor IX: Normal
  - Factor VIII: Normal
  - INR: 1.6
  - Thrombin Clot Time: 24.6 (Elevated)
  - Factor VII: 15% (Normal 67–143%)

11:49 CLOTTING CASCADE

12:05 COMMON BLEEDING DISORDERS

12:24 6 MONTH FOLLOW-UP

- Walking normally
- 4+/5 Quad strength, everything else 5/5
- Normal sensation
- No Pain
- Wants to return to football next fall

12:38 KEY POINTS

•“Thigh compartment syndrome should be considered when any athlete suffers a direct blow to the anterior thigh with subsequent swelling, unrelenting pain, and loss of knee range of motion.”

Colosimo & Ireland 1992

- Return to contact sports?

13:05 DISCUSSION

15:05 PAY ATTENTION TO HEMOGLOBIN LEVELS IN CONTEXT

16:35 RETURN TO PLAY

19:10 WAS THERE MORE TO THE HISTORY?

21:00 COMPARTMENT SYNDROME

21:57 THANK YOU