

# Posterior Condyle Fractures



**Daniel C. Wascher, M.D.**  
**University of New Mexico**

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# Disclosures

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**Fellowship Support – Arthrex**

**Fellowship Support – Smith & Nephew**

**Associate Editor – Orthopaedic  
Journal of Sports Medicine**

**Editorial Board – American Journal of  
Sports Medicine**

**Editorial Board – Journal of Knee Surg.**

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# H"offa" Fracture

Fracture of the  
Femoral Condyle  
In the  
Coronal Plane

Originally Described  
By Hoffa in Germany



Hoffa, Lehrbuch der Frakturen  
& Luxationen 1904

# Hoffa Fracture

**Rare Fracture**

**0.65% of Femur Fxs**

**Lateral > Medial**

**≈ 80%**

**Frequently Missed**

**Up to 1/3**

**On Initial X-rays**

**CT Scan**



**Allmann, J Belg Radiol 1996**

**Arastu, BJJ 2013**

# Injury Mechanism

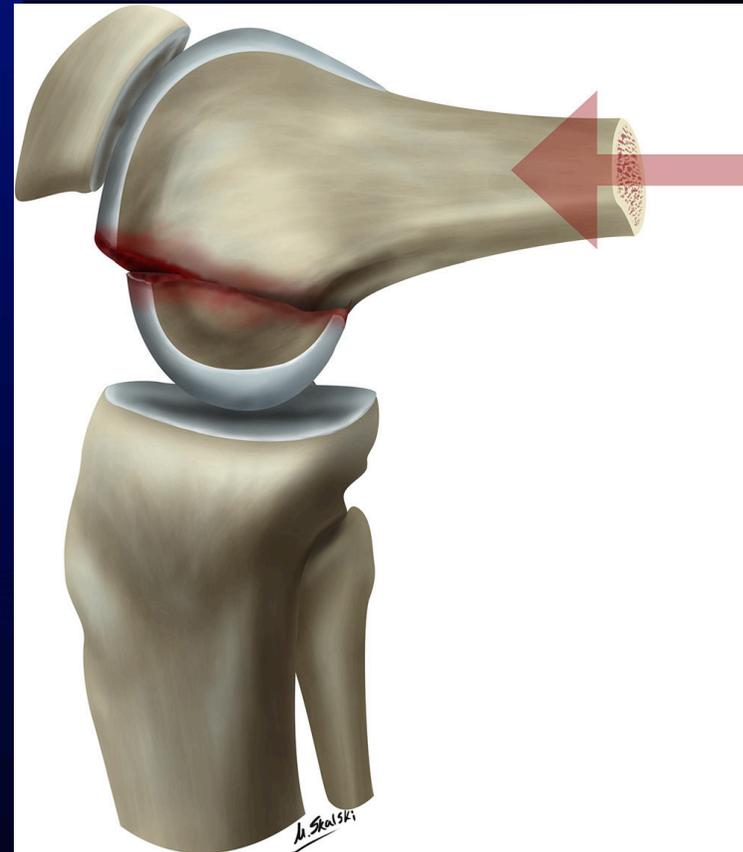
**High Energy Injuries**

**80% MVC**

**Axial Load to  
Flexed Knee**

**Intercondylar Fxs**

**40% Hoffa Fragment**

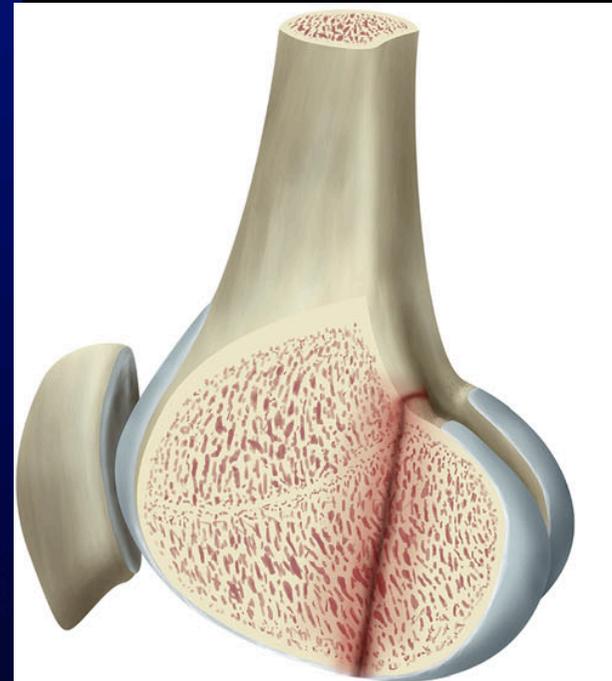


**Nork, JBJS 2005**

# Classification

## Type I

**Extends Parallel  
to the Posterior  
Cortex From an  
Extra-Articular  
Location**



**Type I**

**Letenneur, Ann Chir 1978**

# Classification

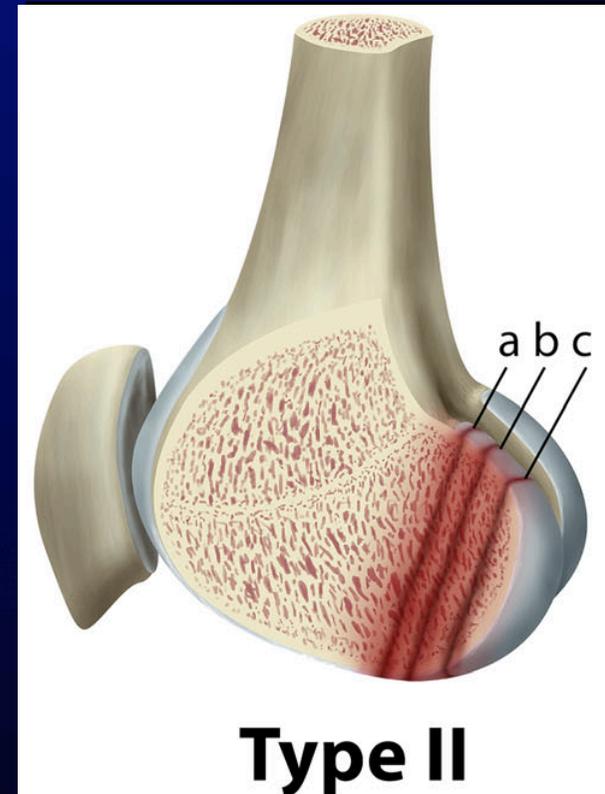
## Type II Intra-Articular Fracture Fragment

a ≈ 75%

b ≈ 50%

c ≈ 25%

**Highest Risk of AVN!!**



Letenneur, Ann Chir 1978

# Classification

## Type III

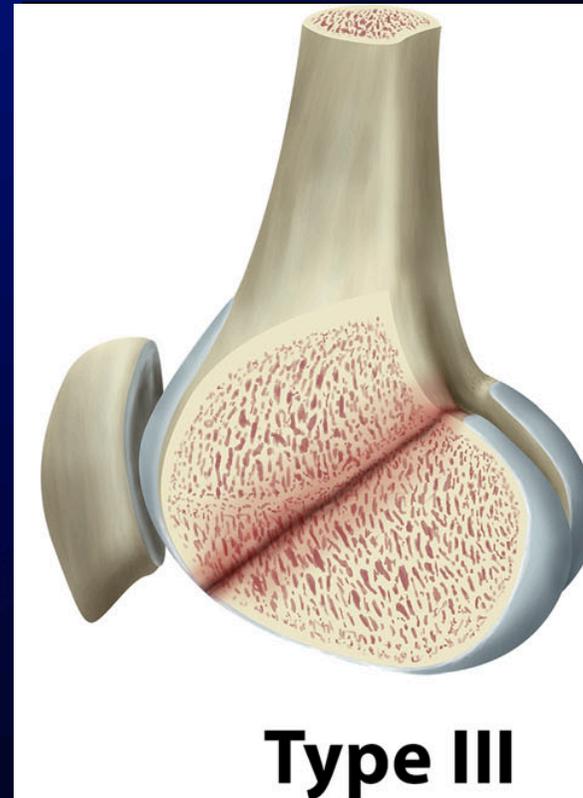
**Oblique Fracture**

**ACL & LCL**

**Remain Attached**

**To Fracture**

**Fragment**



**Letenneur, Ann Chir 1978**

# Evaluation

**High Index of  
Suspicion**

**Injury Mechanism**

**Lipohemarthrosis**

**Oblique Radiographs**

**CT Scan**



**White, Skeletal Radiol 2015**

# CT Scan

**2-D and 3-D  
Scans  
Can be Very Helpful  
For  
Diagnosis and  
Surgical Planning**



# Treatment

**Non-Operative  
Treatment  
Has a High  
Chance of  
Malunion or  
Non-Union**



**Lewis, JBJS-B 1989**

# Treatment Goals

**Anatomic Reduction**

**Stable Fixation**

**Early ROM**



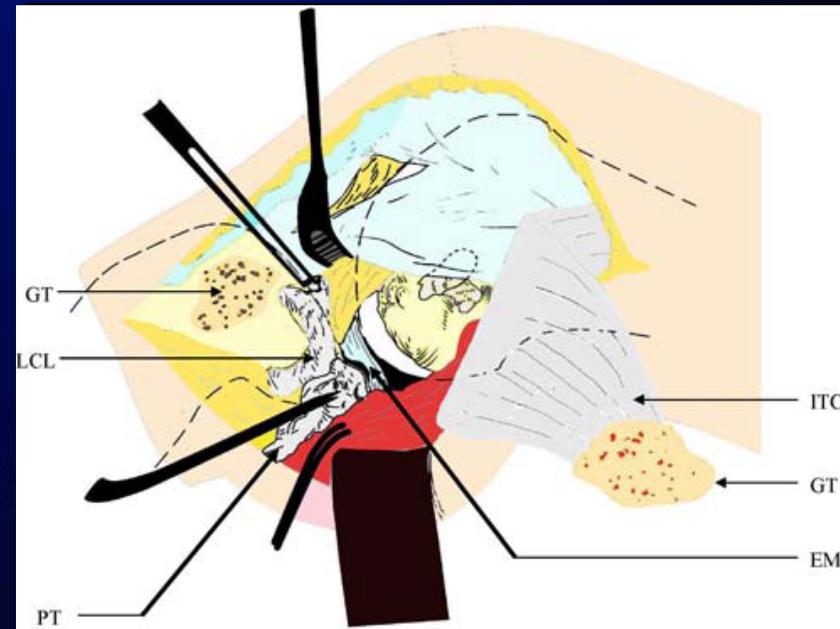
# Surgical Approaches

## Lateral

Lateral Parapatellar  
Gerdy's Osteotomy  
"Swashbuckler"

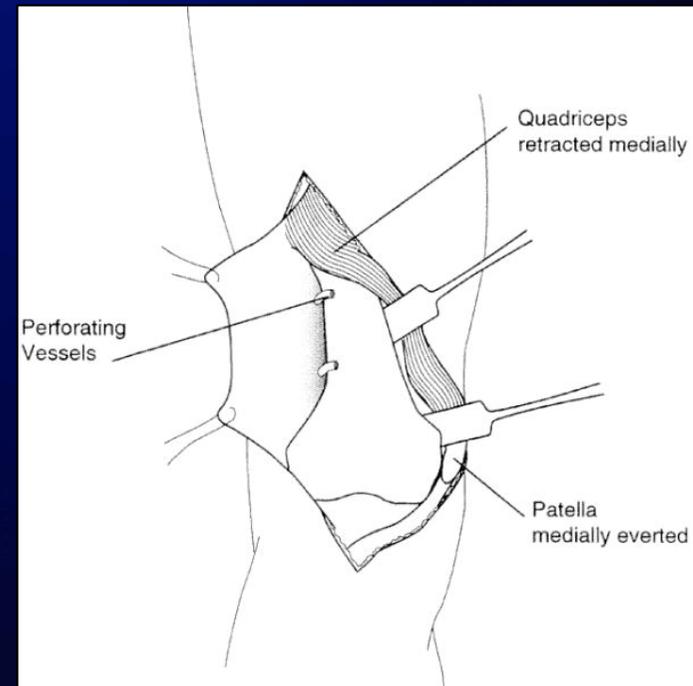
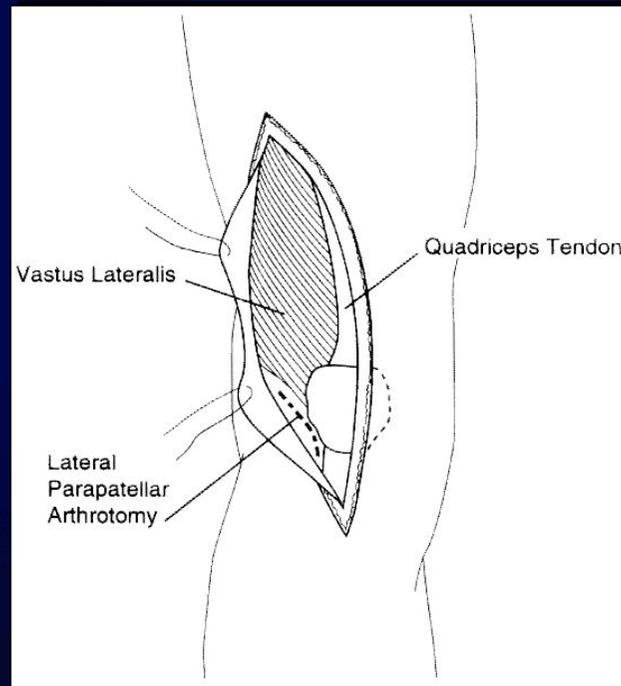
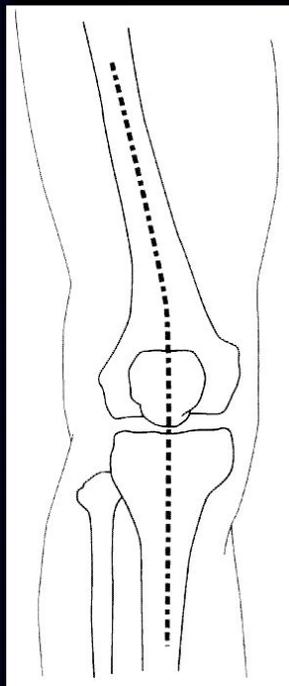
## Medial

Medial Parapatellar  
Subvastus



Garofalo, KSSTA 2006

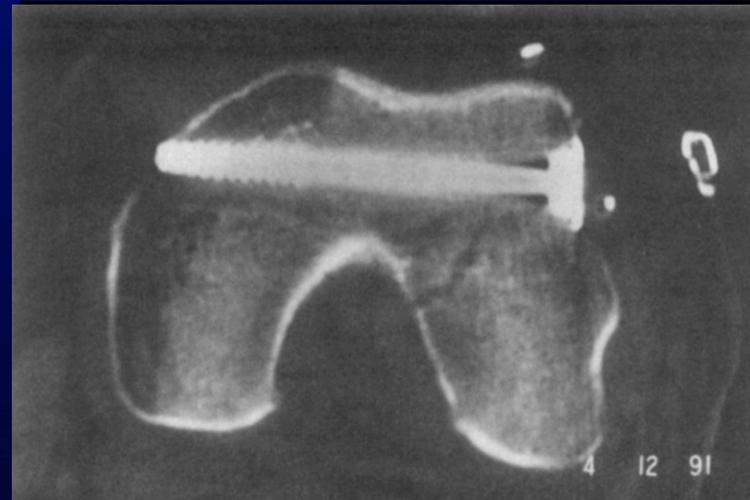
# Swashbuckler Approach



Starr, J Ortho Trauma 1999

# Surgical Approach

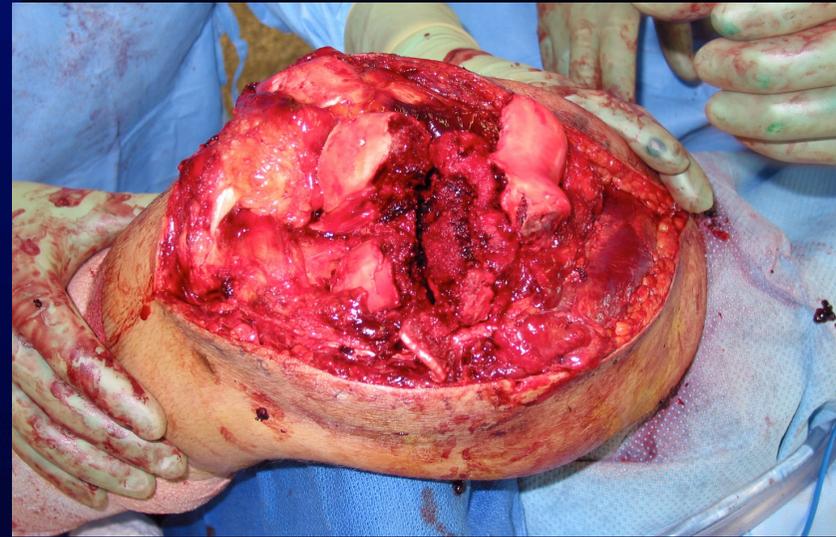
**Few Case  
Reports of  
Limited Incision  
Or  
Arthroscopic  
Reduction**



**Borse, Eur J Trauma Emerg Surg 2010  
McCarthy, Arthroscopy 1996**

# Surgical Approach

**I Prefer  
Extensile Exposure  
For ORIF  
Of These  
Challenging  
Fractures**



# Fixation

**Small Frag Screw**

**Most Common**

**Large Frag Screw**

**Better Fixation**

**Headless Screw**

**Less Articular Damage**

**Buttress Plate**

**Posterior Comminution**



**Hak, Injury 2005**

**Jarit, J Orthop Trauma 2006**

# Screw Placement

**Ant → Post**

**Easiest**

**Post → Ant**

**Strongest**

**Oblique**

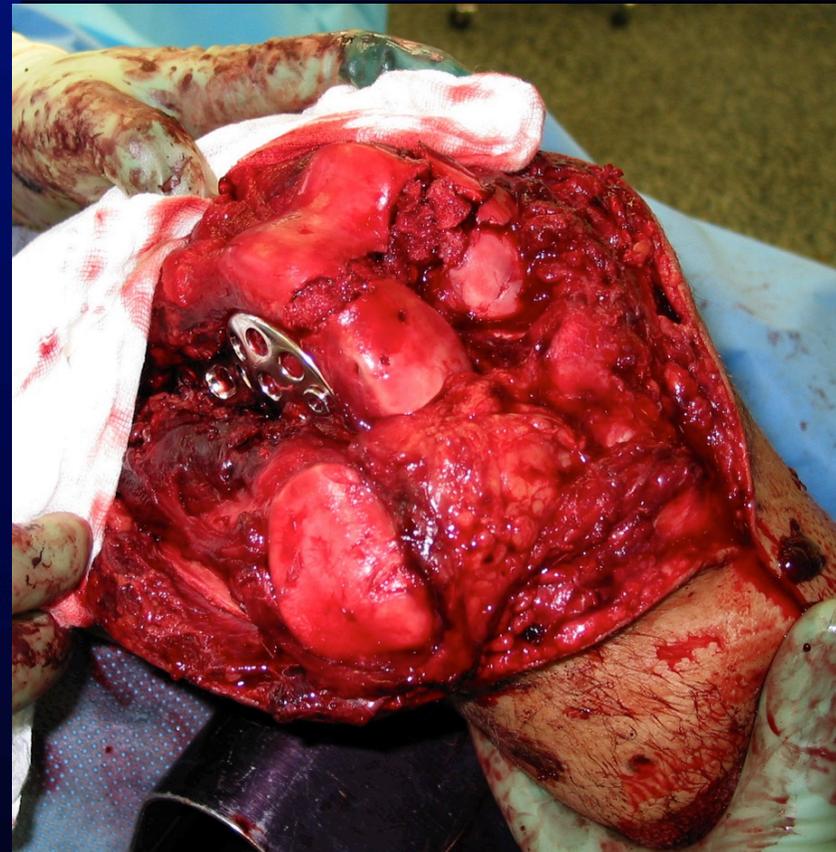
**Avoids**

**Articular Cartilage**



# Intercondylar Fractures

**Lateral Locking  
Plate  
Supplemented  
With  
Small Fragment  
Or Headless Screws**



# Rehabilitation

**Post-op Brace**

**Early ROM**

**NWB 6 Weeks**

**Gradual Rehab**



# Outcomes

**Limited Literature**

**Small Series or  
Case Reports**

**Generally Good  
Results With  
Early Recognition  
And Anatomic  
ORIF**



**Arastu, BJJ 2013**

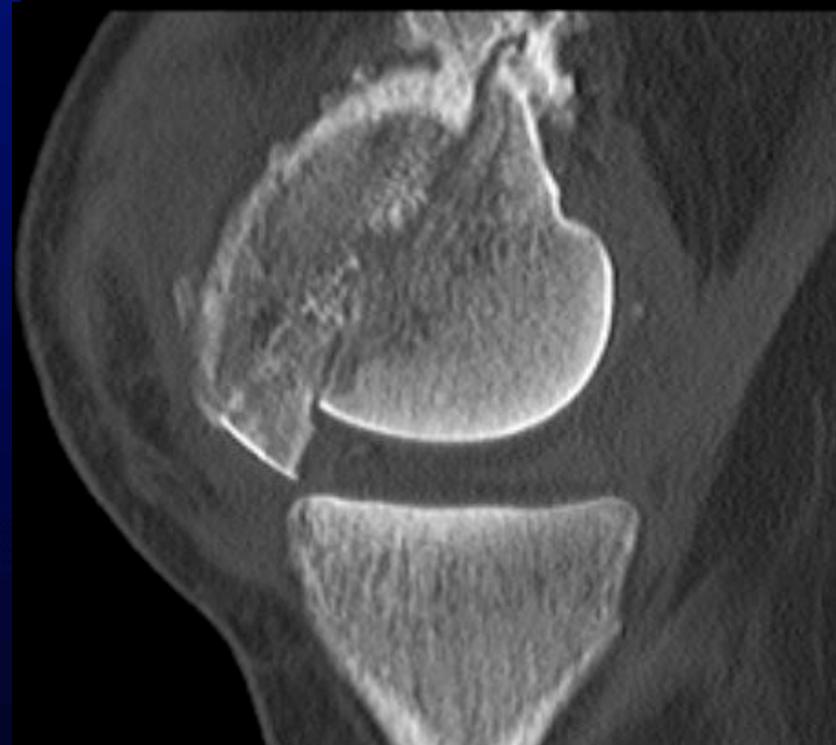
# Complications

**Malunion**

**Non-Union**

**Stiffness**

**Post-Traumatic  
Arthritis**



# Take Home Points

**High Suspicion**  
**CT Scan**  
**Operative Treatment**  
**Extensile Exposure**  
**Anatomic Reduction**  
**Stable Fixation**  
**Early ROM**



# Thank You !!

