

Origins of PF Pain

Genesis of Iatrogenic Patellofemoral Pain

ISAKOS: DonJoy Consensus Meeting:
Understanding Patellofemoral Pain
Saturday, May 26, 2007 8:00-12:30

Talk: 7 minutes

Improper Techniques



Iatrogenic: “Pathology Caused by Medical Treatment”

- PF treatment causing PF pain
- Treatment of non PF problems causing PF pain
- Failure to make proper diagnosis
- Unknown association

PF treatment causing PF pain

- Rehabilitation related problems

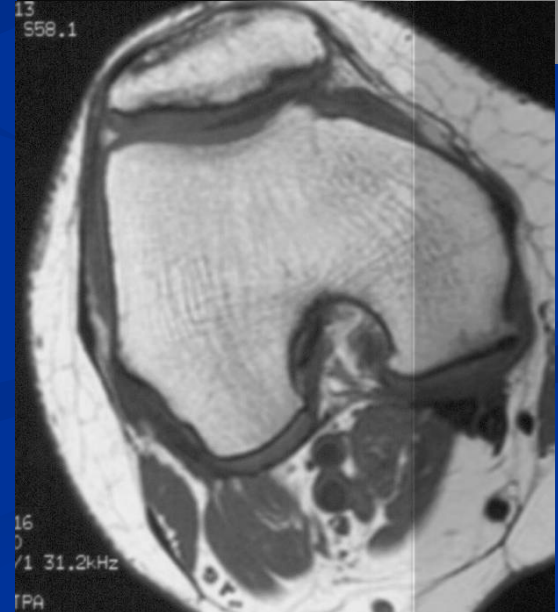
Overload of PF joint— “Cybex Disease”

Focused attention to quadriceps over
proximal core musculature

- Surgical related problems

PF Surgery Causing PF Pain

1. Lateral Surgery
2. Medial Surgery
3. Tuberosity Surgery
4. Cartilage Surgery
5. PF Bone Surgery
6. Ligament Surgery
7. PF arthroplasty
8. Pain Syndromes



PF Surgery Causing PF Pain: Lateral Surgery

- Lateral release for wrong indication/
overzealous application/ Dehabilitation
- Pain with Medial Patellar Instability post
excessive lateral release

PF Surgery Causing PF Pain: Medial Surgery

- Patellar over-constraint through medial reef/
imbrication or MPFL repair
- Nonanatomic MFPL reconstruction

PF Surgery Causing PF Pain: Tuberosity Surgery

- Posterior-medialization (Hauser)
- Over-distalization (Patella Infera)
- Tuberosity repositioning surgery without attention to articular cartilage loading/
chondrosis (e.g., AMZ or Maquet in face of proximal pole chondrosis)
- Tuberosity over-medialization (Andrish showed over-load to medial PF and TF compartments)

PF Surgery Causing PF Pain: Cartilage Surgery

- Overly aggressive chondral debridement (mechanical or electro/radiofrequency/coblation) chondrocyte bone death/ osteonecrosis
- Cartilage restoration without attention to patellofemoral biomechanics (early ACI) Improperly use of cartilage restoration (e.g., uncontained lesions or patients over 40 with marrow stimulation, mismatch of cartilage height with OC plugs to patella)

PF Surgery Causing PF Pain: PF Bone Surgery

- Inadequate reduction and fixation of patellar fracture or tendon attachments
- Trochleoplasty that leads to chondrosis or performed in the face of chondrosis

PF Surgery Causing PF Pain: Ligament Surgery

- PF pain natural occurrence with injury (e.g., ACL 10 to 20% reported)
- Effect of harvest site (e.g., patellar tendon with or without harvest site bone grafting)
- Arthrofibrosis/ Patella Infera secondary
- PCL persistent posterior tibia tuberosity

PF Surgery Causing PF Pain: Arthroplasty

- Improperly implanted PFA
- Stress reaction of patella
- Impingement of patellar component in notch
- Overstuffing width as well as thickness
- Loosening
- Infection

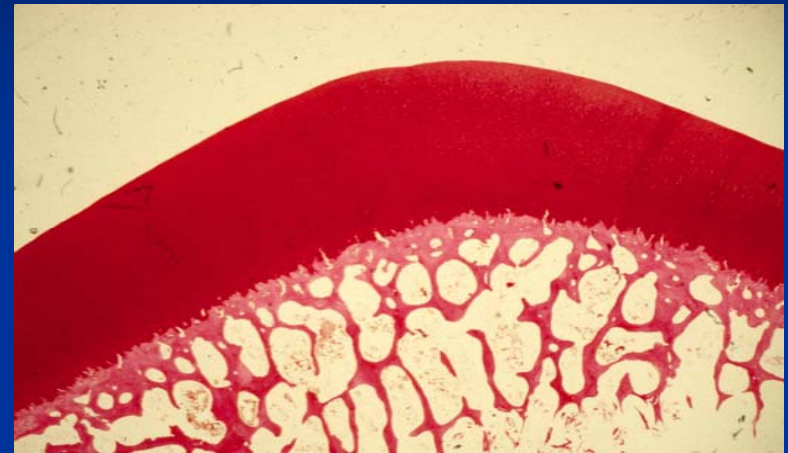
PF Surgery Causing PF Pain: Pain Syndromes

- Neuroma formation
- Sympathetically mediated (CRPS)
- Infera patellar branch of saphenous nerve

Treatment of non PF problems, causing PF pain

- Most knee surgery results in dehabilitation on the basis of direct effusion quadriceps inhibition or pain inhibition
- Incision scar neuroma
- Cartilage restoration of femoral condyle with OC plugs: improper harvest site position, confluence of harvest site, concern for plugs over 5 mm (Miniaci)

OC Plug Harvest Site Pathology

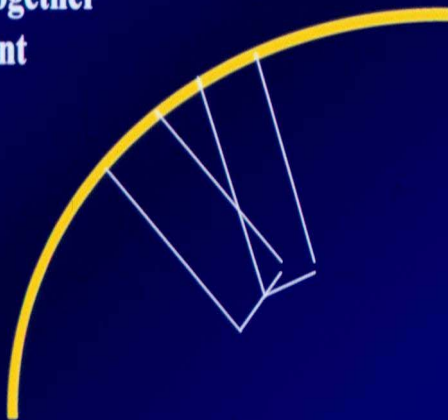


>5mm at patellofemoral joint causes arthrosis

OC Plug Harvest Site Pathology

MOSAICPLASTY HARVESTING TECHNIQUES

plugs too close together
will be insufficient

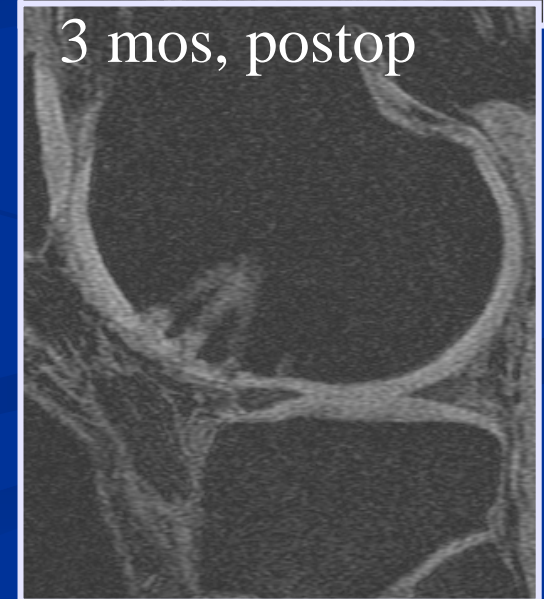


**grafts converging at harvest
site may create cystic change**

Provided courtesy of Tony Miniaci, M.D.



3 mos, postop



Treatment of non PF problems, causing PF pain

- Surgical treatment resulting in arthrofibrosis and patella infera
- Femoral shaft fractures treated with retrograde rod through trochlea above notch
- UKA that impinges centrally into path of patella
- Standard TKA have incidence of PF pain with and without patellar resurfacing

Failure to make proper diagnosis

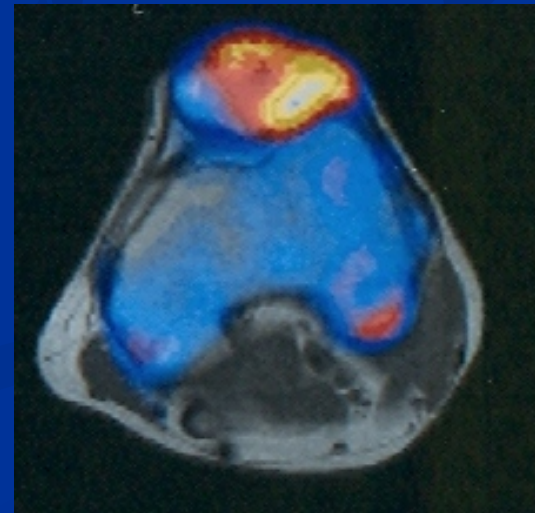
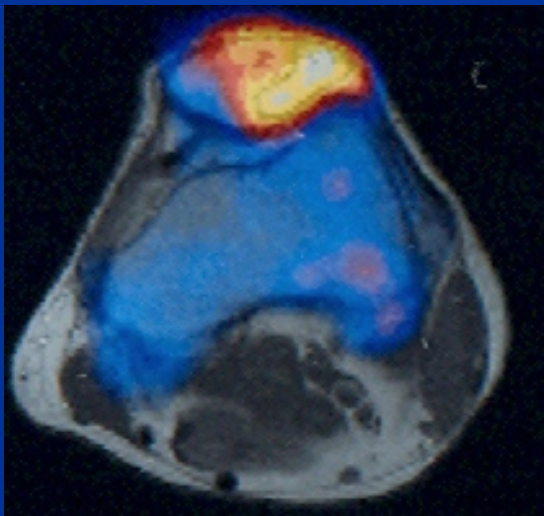
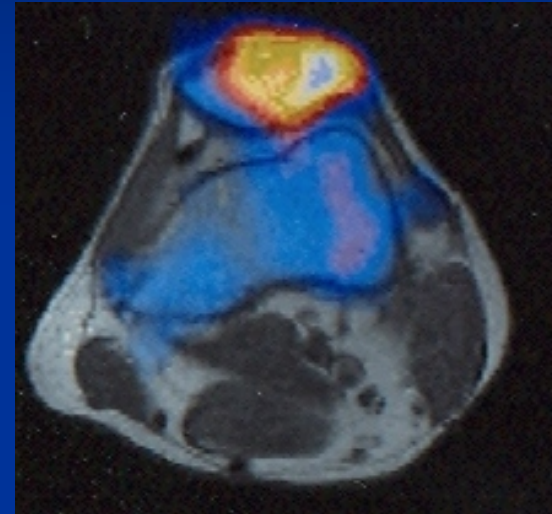
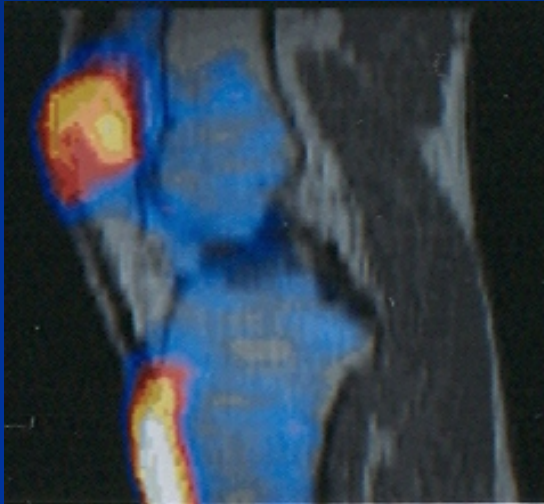
- Meniscal or Chondral pathology treated without treatment of concomitant imbalance PF pain, which is exacerbated by post op dehabilitation
- Complex regional pain syndrome with predominant PF localization treated in any manner other than CRPS management

Unknown association

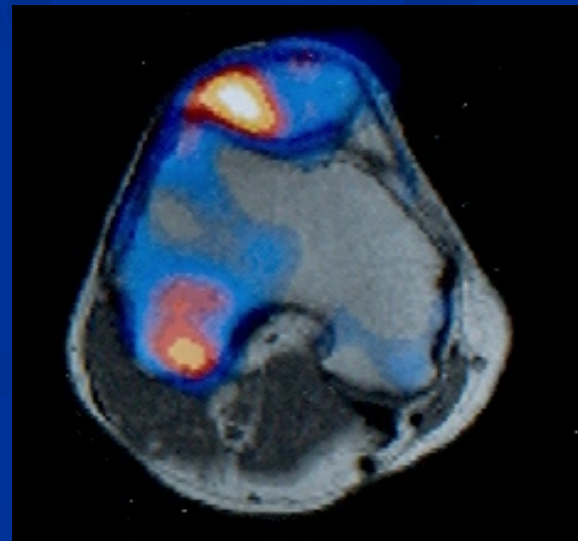
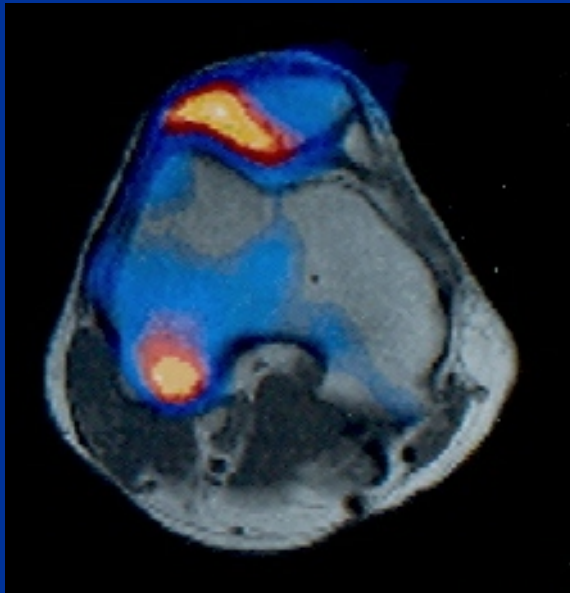
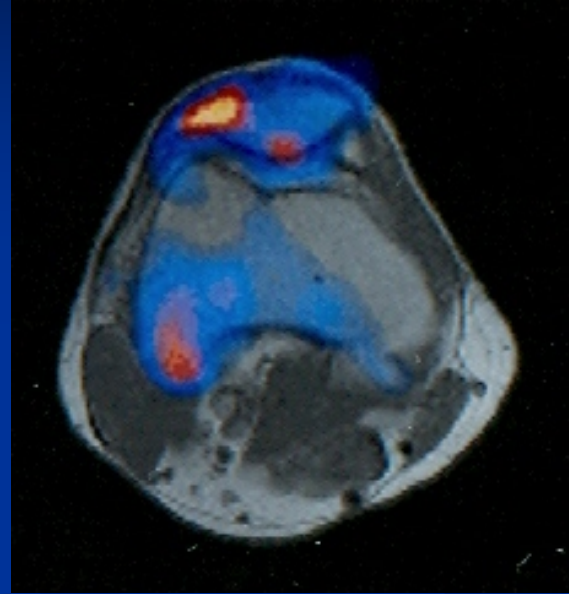
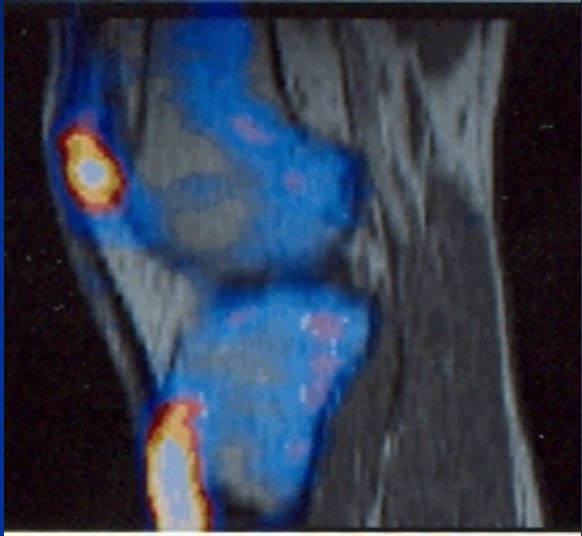
- 10-20 % of ACL tear patients have some degree of PF pain with or without surgery
- Effect of degrees of vascular compromise with surgery about the patella

Imaging in the Iatrogenic PF Pain Patient

Left Knee: T2 Edema



Right Knee: No T2 Edema



Thank You