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

4.5mm harvests

6.5mm harvests

>5mm at patellofemoral joint causes arthrosis

Provided courtesy of Tony Miniaci, M.D.
OC Plug Harvest Site Pathology

MOSAICPLASTY
HARVESTING TECHNIQUES

plugs too close together
will be insufficient

3 mos, postop

grafts converging at harvest
site may create cystic change

Provided courtesy of Tony Miniaci, M.D.
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