OCD of the Elbow

Shoulder Service

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Background

Shoulder Service

- What is it??
- Dominant arm
- Thrower/gymnast
- Lateral elbow pain
- Age 12-15

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Pathoanatomy

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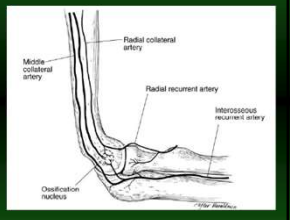
- Limited vascularity
- Fatigue fracture
- Cartilage shear
- Fragmentation



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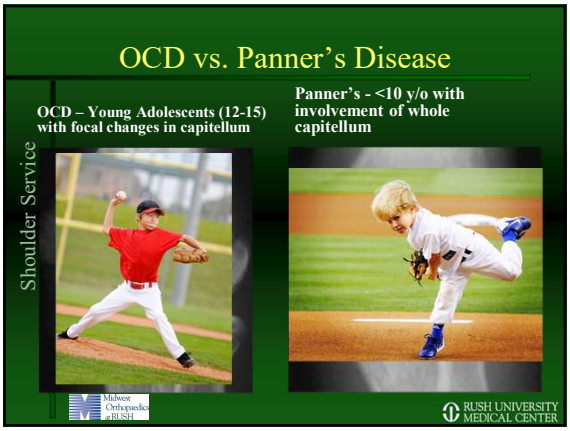
OCD vs. Panner's Disease
OCD – Young Adolescents (12-15) with focal changes in capitellum
Panner's - <10 y/o with involvement of whole capitellum
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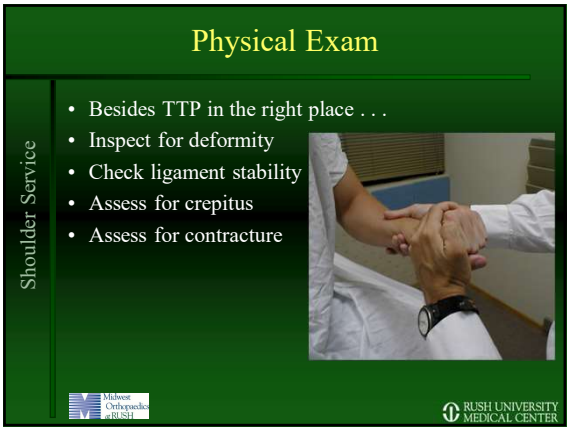
Physical Exam
Besides TTP in the right place . . .
Inspect for deformity
Check ligament stability
Assess for crepitus
Assess for contracture
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Differential Diagnosis

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- OCD
- OCD
- OCD
- Synovial Plica
- Panner's Disease
- PLRI
- Prior fracture

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Radiographs

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- Compare to other side
- Look for loose bodies
- Signs of previous trauma
- Signs of joint subluxation
- XR's may be normal!

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Radiographs

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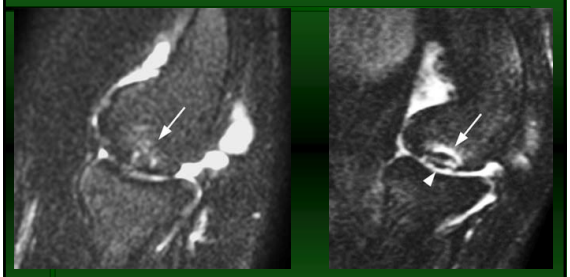
MRI



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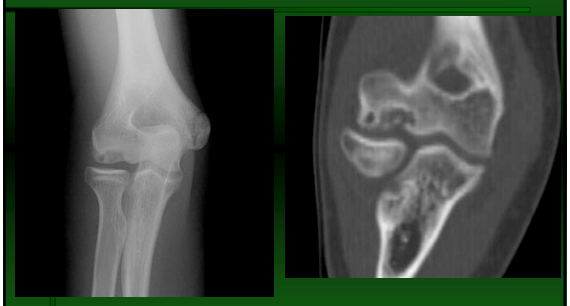
CT Scan



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Classifications

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- Minami et al. (1979)
  Radiographic classification only
- ICRS
  1 Stable lesion, softened cartilage
  2 Partial discontinuity
  3 Complete discontinuity, not dislocated
  4 Empty defect

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Classifications

Shoulder Service

- Takahara et al. (2007) . . . STABLE LESIONS
  - -Open capitellar physis
  - -Flattening of capitellum or subchondral lucency
  - -Loss of <20 deg extension
  - -No fragmentation/loose bodies

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OCD Management Options

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- Non-operative
- Arthroscopic debridement
- Fragment fixation
- Osteoarticular autograft transplantation (OAT)

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Non-operative

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- 4-6 weeks of rest followed by 4-6 month RTS
- Only for those with "stable" OCD

-Early studies (Mitsunaga '82, Takahara '99)
50% ongoing sx's, most unable to RTS

-Newer Studies
Mihara '09
Healed: Overall 84% "early" with 94% open, 50% closed physis Overall 11% "late"
Takahara '07
6/7 stable healed with non-op
decreased to 1/11 if physis closed

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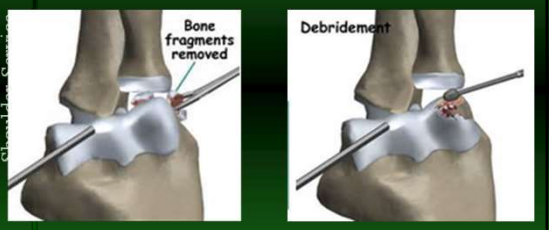
Arthroscopic Debridement



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Direct Lateral Portal

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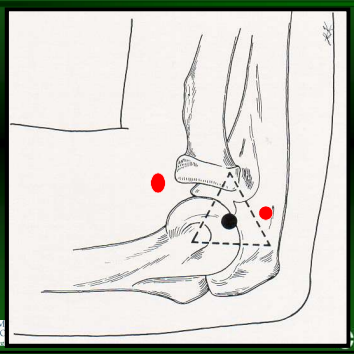

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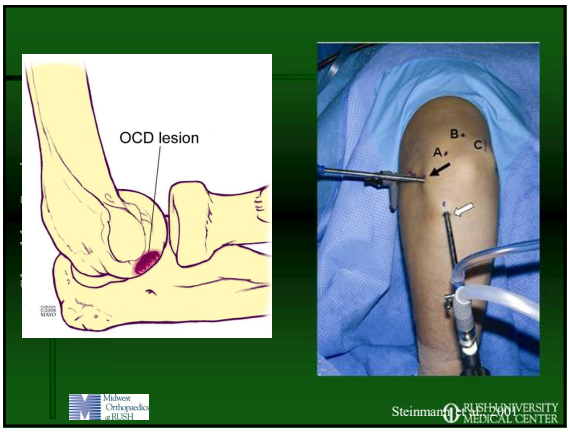
OCD lesion
A
B
C
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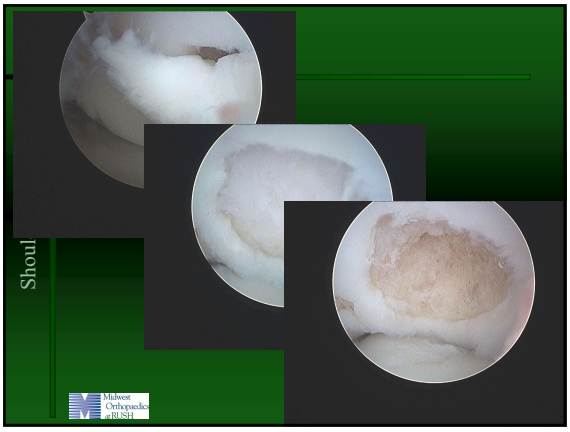
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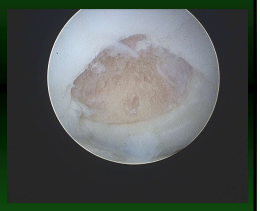
Arthroscopic Debridement

Authors	Return to Sport	Percent
Baumgarten	13/16	81
Ruch	3/12	25
Byrd	4/10	40
Brownlow	23/29	79
Rahusen	12/15	80
Takahara	41/55	75



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Osteochondral Transplant

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Osteochondral Transplant

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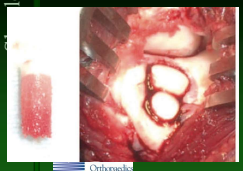
Osteochondral Transplant (OATS)

Authors	Return to Sport	Percent
Yamamoto	16/18	89
Iwasaki	17/19	89
Maruyama	31/33	94



et al.

Maruyama et al.

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Rehabilitation

- Operative splint x 2 wks, followed by controlled ROM
- Start strengthening at 4 wks for debridement, or not until 8-10 weeks when graft incorporated for OAT/fixation
- Focus on flexor pronator strengthening as secondary stabilizer to valgus stress
- Consider throwing mechanics evaluation
- Return to sport 3 months for debridement, 4+ months for OAT/fixation

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Summary - Basics

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- Poor vascular supply to the capitellum leading to fatigue fracture of the subchondral bone
- Classic presentation, limited differential diagnosis
- Classic patient demographic (throwers/gymnasts 12-15 y/o)
- Look for loose bodies, flexion contracture, ligament instability
- MRI for very early stage disease, CT for late stage
- Limited role for nonsurgical management, but good return to sport with appropriate surgery

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Summary - Treatment

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Nonoperative

- 85%+ healing if . . .

-Open capitellar physis
-Flexion contracture <20 deg
-Stable lesion (no fluid)
-No loose bodies

Operative

- Debridement – 70% RTS
  -Small, advanced, dislocated
- Fragment Fixation – 83% RTS
  -Discontinuity, not dislocated
- OATS – 91% RTS
  - >50% articular surface defect
  - Lateral sided large lesions

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Thank you!

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