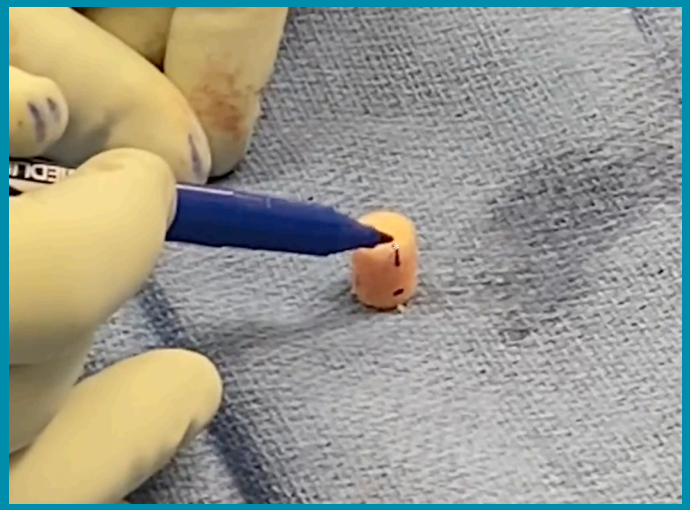
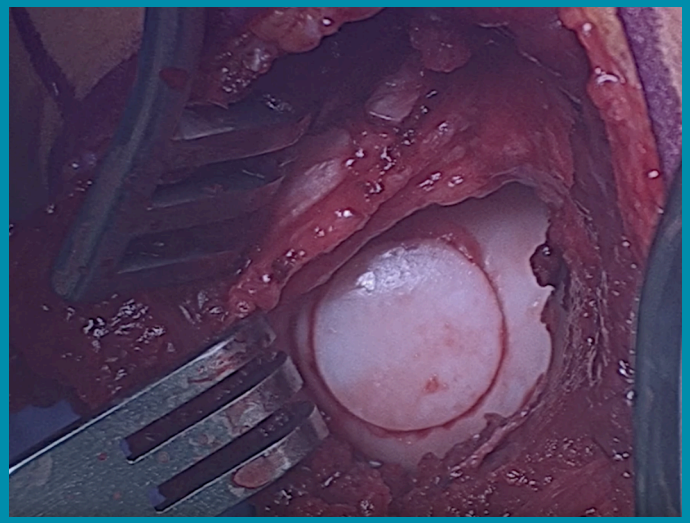
# Osteochondral Allograft Transplantation for Elbow OCD





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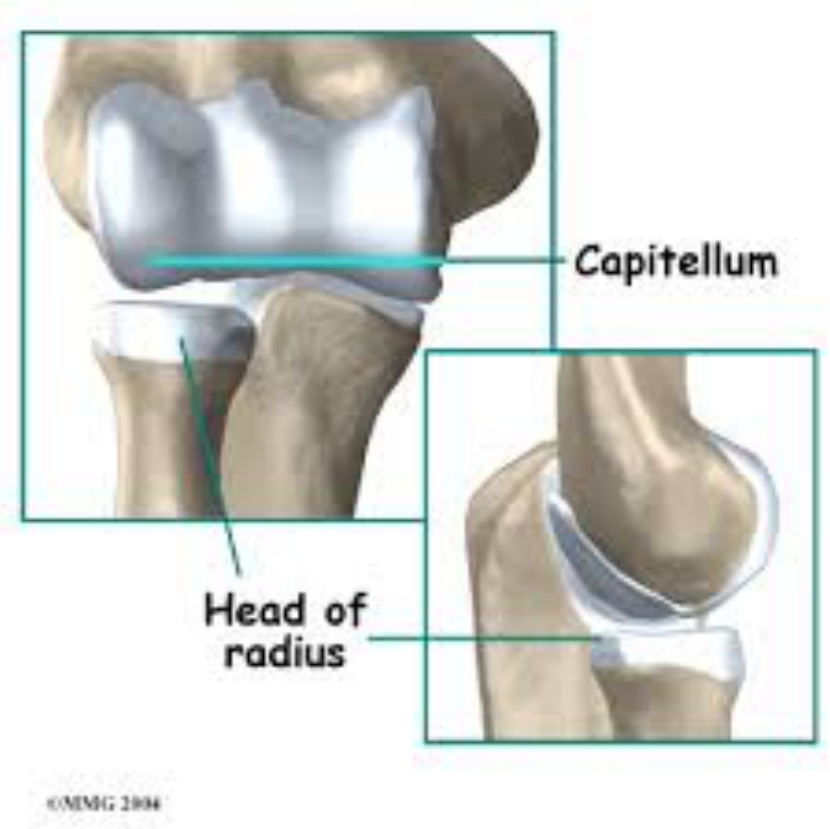
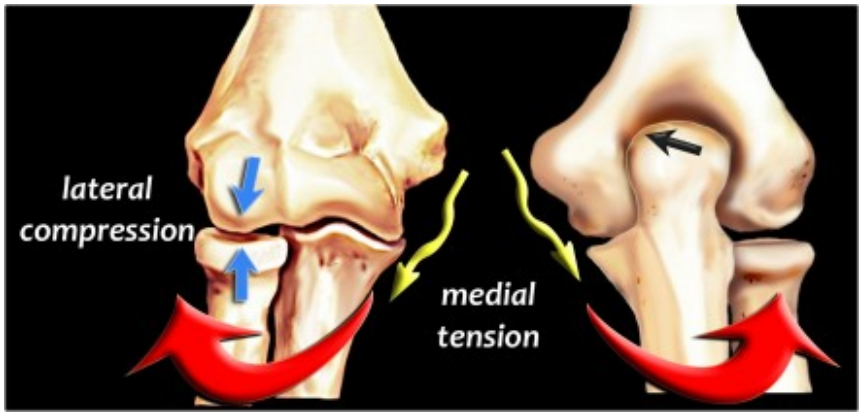
# Anatomy

- The elbow is the connection of the upper arm bone (humerus) and the two bones of the forearm (radius and ulna).
- The capitellum is a knob on the lower end of the humerus that forms a joint with cup-shaped end of the radius (radial head).
- The ends of the bones are covered with cartilage which allows a smooth gliding surface.



# What is OCD (Osteochondritis Dissecans)?

- Injury to the bone below the cartilage
  - Due to loss of blood supply from repetitive trauma (e.g. throwing, gymnastics)
- Risk for instability and disruption of overlying cartilage
- May result in premature arthritis





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# Without surgery….

- The OCD won't heal
- Persistent pain
- *Poor* long term function
- Loose bodies
- Locking/catching
- Loss of motion
- *Increased* arthritis
- *Decreased* return to sport

# Elbow Arthroscopy / Osteochondral Allograft Transplant

- Outpatient surgery (go home same day)
- General anesthesia (asleep the whole surgery and won't feel anything)
- Arthroscopic surgery followed by small (4-6 cm) incision on side of elbow
- Remove any loose bodies
- Place allograft bone/cartilage plug into defect

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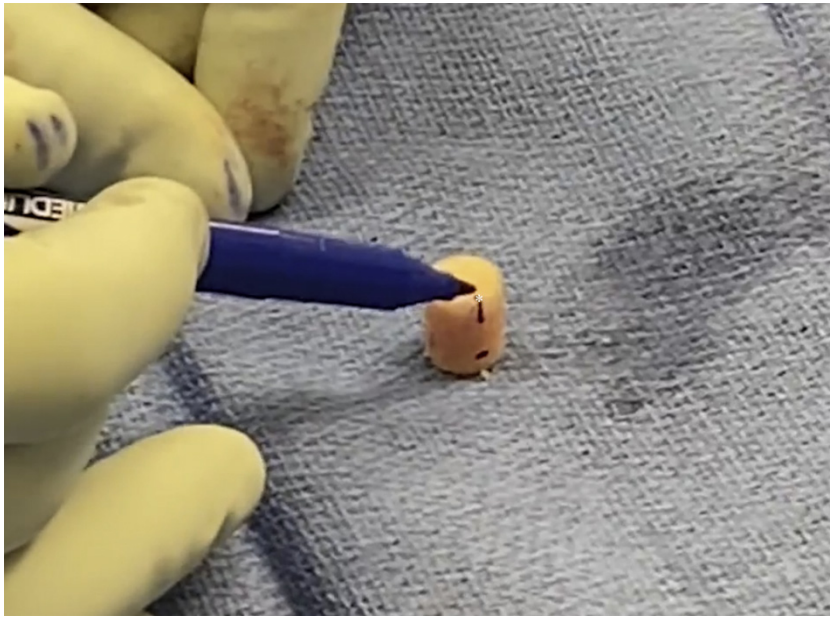
# Indications for Osteochondral Allograft Transplantation

- Failed prior surgery (debridement / marrow stimulation)
- Unstable OCD lesions
  - Uncontained defects
  - Defects >1cm in diameter
  - Significant bone involved
    - Deep defects, cysts

# Preferred Technique

Fresh Precut Osteochondral Allograft Core Transplantation for the Treatment of Capitellum Osteochondritis Dissecans

Sagar Chawla, M.D., M.P.H., and Michael G. Saper, D.O., A.T.C., C.S.C.S.



https://www.arthroscopytechniques.org/article/S2212-6287(20)30046-3/fulltext#supplementaryMaterial

Chawla and Saper *Arth* Tech 2020

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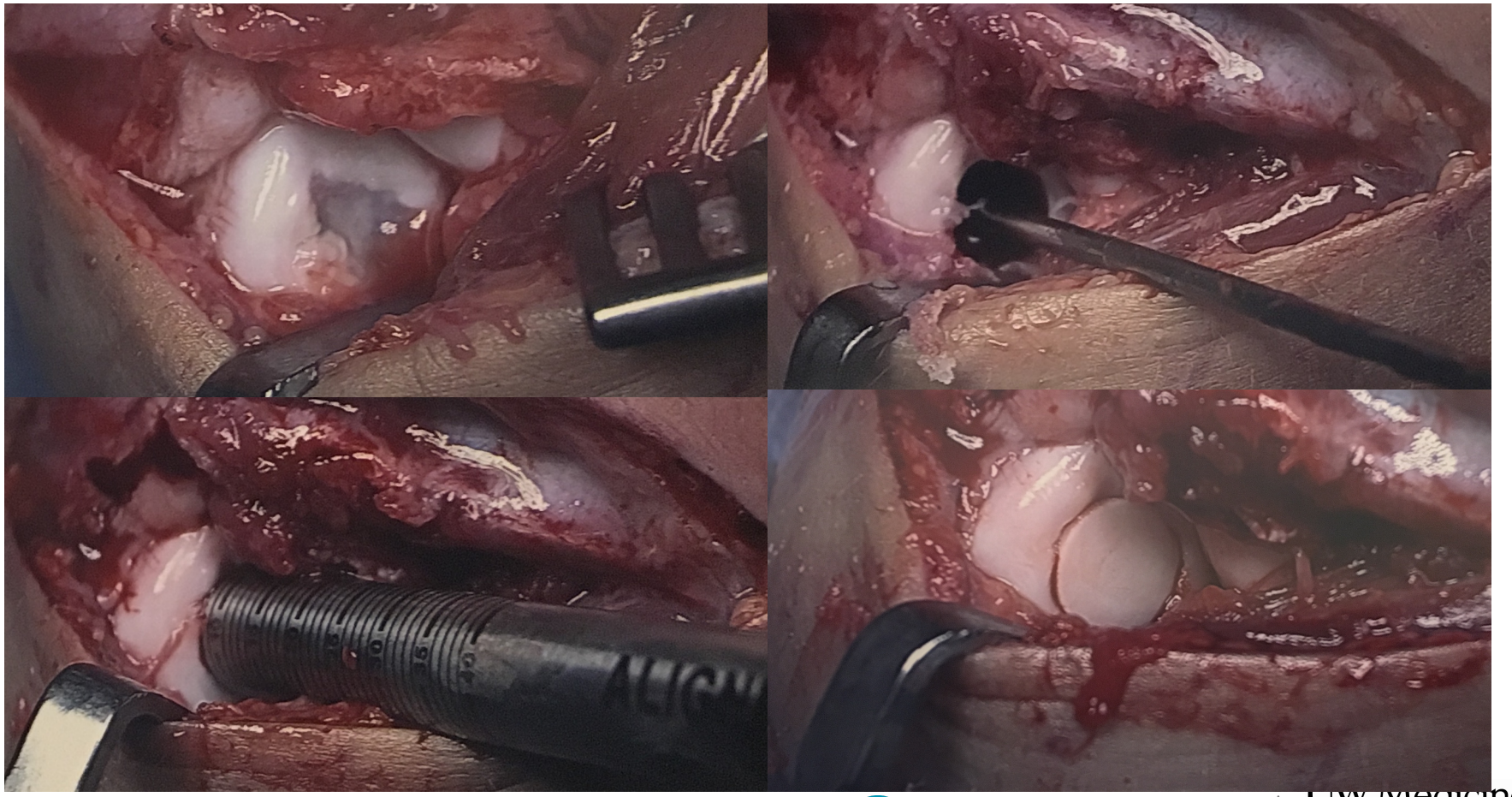
# My Preferred Technique



# Rehabilitation and Return to Sports

Splint 7-10 days

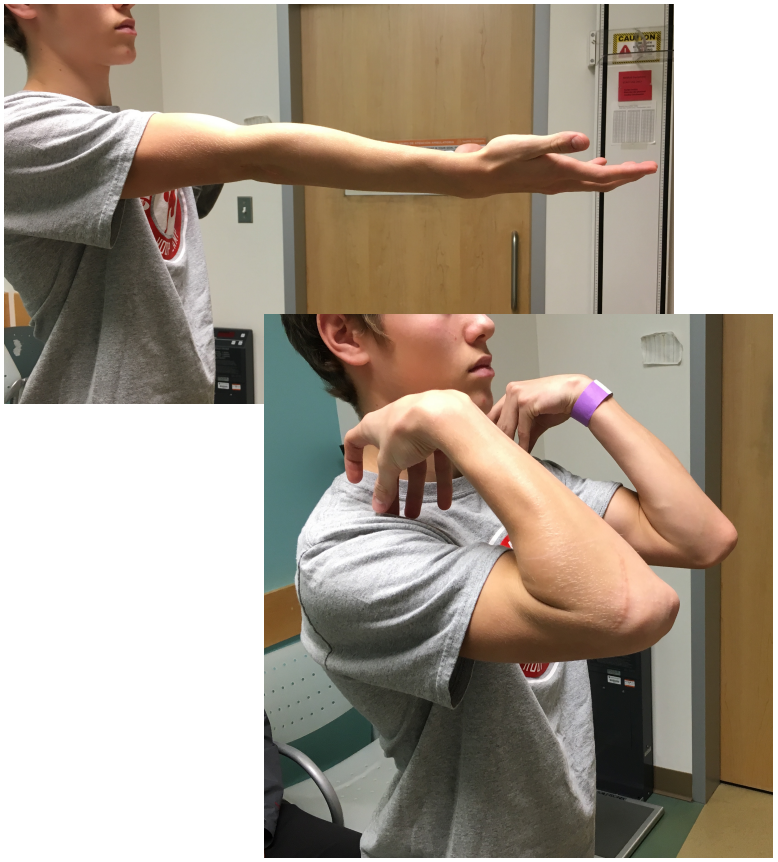
Encourage range-of-motion exercises

- Goal = full ROM by 6 weeks

Light elbow resistance exercises at 6 weeks

Loadbearing exercises at 4 months

Return to sport at 6-9 months depending on sport



# Complications and Considerations

Anesthesia

Bleeding

Nerve injury

Infection

Stiffness

Reoperation (<5%)

Failure to return to sport (5-10%)

**Return to Sport After Operative Management of Osteochondritis Dissecans of the Capitellum**

**A Systematic Review and Meta-analysis**

Robert W. Westermann,*† MD, Kyle J. Hancock,† MD, Joseph A. Buckwalter,† MD, PhD, Benjamin Kopp,† BS, Natalie Glass,† PhD, and Brian R. Wolf,† MD, MS

*Investigation performed at the University of Iowa, Iowa City, Iowa, USA*

Westermann et al. *OJSM* 2016

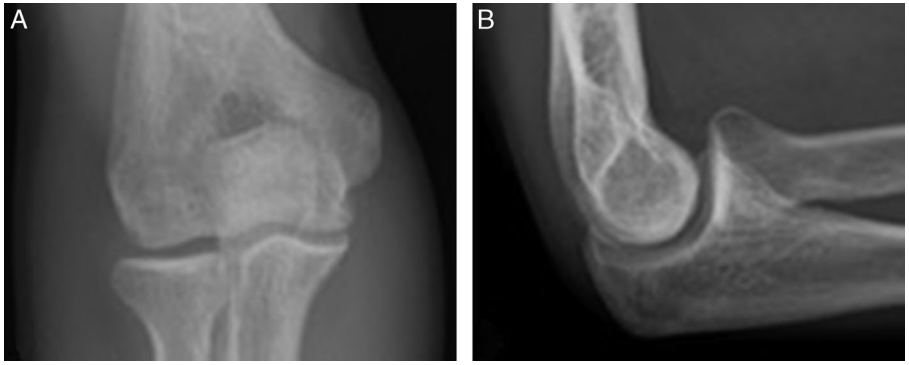
# OCA Transplantation

CASE REPORT

Osteochondral allograft core transplantation for the treatment of capitellar osteochondritis dissecans: a case report with technical note

13y M multi-sport athlete with 13 mo f/u

- Improvements in functional outcomes
- Graft incorporation at 6 months
- Full return to sport




Geiger, Chawla, Saper, *COP* 2020

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# OCA Transplantation

**Fresh osteochondral allograft transplantation for osteochondritis dissecans of the capitellum in baseball players**

**Raffy Mirzayan, MD[a,*], Michael J. Lim, MD[b]**

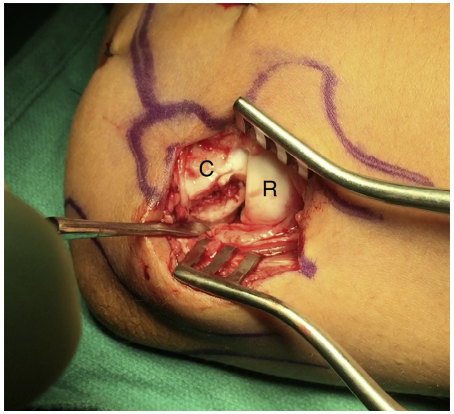
6 pitchers, 3 position players

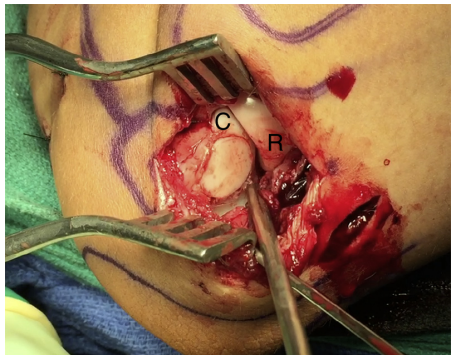
Mean age 15.3 yrs

F/u 48.4 months

Improvements in Mayo, Oxford, DASH, KJOC, and VAS

All still active in sport or played 2 years before leaving the sport unrelated to the elbow




Mirzayan et al. *JSES* 2016

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# My own OCA Transplantation Outcomes

Avg 13 years old

Avg f/u of 24.9 months

Improved ROM

- Pre-op: 8.5 to 140
- Post-op: -2.5 to 141

Improved pain

- 2.7/10 to 0.75/10

Reoperation

- 10% - revision OCAT

Improved Patient-reported outcomes

- CORE: 64.4 to 96.3
- Quick DASH: 34.1 to 2.8
- Tegner: 4.1 to 9.5

100% return to sport

- 87.5% at same level or higher

# Conclusions

Goals = remove diseased tissue, replace bone and cartilage, return to sports

Surgery generally results in improved outcomes

Low rate of complications

Slow, progressive rehabilitation is key

Return to sports (6+ months)

# Thank you for your attention!

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