

The Society for Patient Centered Orthopedics

Choosing Wisely List

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Extremities and Trauma

Vertebroplasty

Rotator Cuff Repair: For atraumatic (degenerative) tears in patients greater than 70 years of age

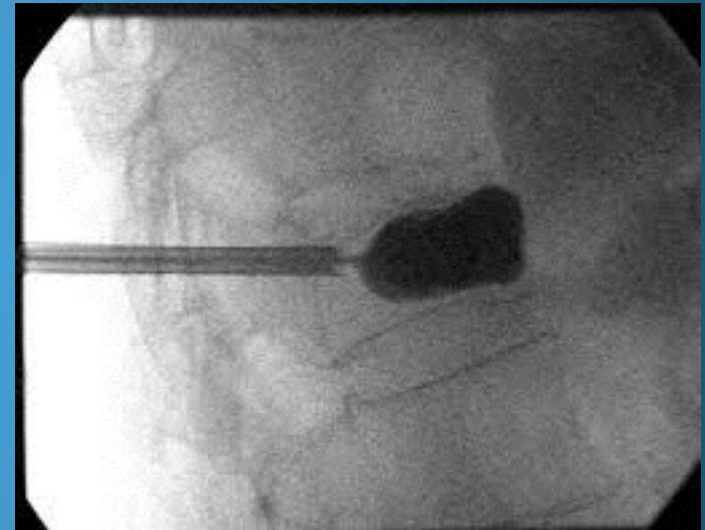
Arthroscopy for Degenerative Changes in the Knee

Surgical Fixation of Adolescent Clavicle Fractures

Acute ACL Tear: Attempt 3 months or more conservative care

Vertebroplasty

- The percutaneous injection of cement into the center of a fractured osteoporotic vertebra.
- 25% of women aged >50 have one or more fractures



The Evidence

- 6 unblinded studies none compared to sham surgery, rather to traditional non surgical management
- Mixed but Slightly favorable results

Our Best Evidence

Kallmes, et. al. A Randomized Trial of Vertebroplasty for Osteoporotic Spinal Fractures. NEJM. 2009

Patients randomized to either procedure or simulated procedure. Patients and all follow-up study personnel blinded

- “No commercial entity paid for any materials used in the study.”

Kallmes et al

- “Improvements in pain and pain-related disability... in patients treated with vertebroplasty were similar to the improvements in a control group.”
- Very powerful placebo effect with surgery

A Randomized Trial of Vertebroplasty for Painful Osteoporotic Vertebral Fractures: Buchbinder NEJM

RCT involving a sham procedure

All Participants, (other than the interventional radiologists) blinded to intervention

No crossover was permitted. The rate of attrition was low (less than 10%).

“ no beneficial effect of vertebroplasty as compared with a sham procedure...at 1 week or at 1, 3, or 6 months after treatment.”

Rotator Cuff Repair: Atraumatic in pt over 70 yo

At Least 250,000 performed in U.S. annually

Incidence of Repair exploded 238% over last decade

Prevalence of Rotator Cuff Tears

- MRI: 34% of all shoulders
 - 54% if over age 60
- US: 31% ages 70-79
 - 51% ages over 80
- “rotator cuff tears must...be regarded as ‘normal’ degenerative attrition”

Rotator Cuff Tear: Outcome of Conservative Tx

- Rationale for surgery: Tears worsen over time
- 103 Pts. Mean F/U 13 years
- 88%: No or slight pain; 72%: No disturbance ADL
- Rate of operation 2.8%
- >64: unlikely to have any symptoms or problems

Does Successful Surgery influence pt-centered results

- Failure Rate reported b / 20-94%
- Meta-analysis Level I and II Evidence: 2015
- RCR: Intact vs Failed
- “not a clinically important difference in validated functional outcome scores or pain...regardless of the structural integrity of the repair”

Recurrent Tears

- Worse Outcomes are seen in Laborers or Young pts
- Older pts: ASES scores jumped from 48-84 points despite a 94% rate of Retear
- We need Randomized Controlled Trials

RCTs or RCR

- Moosmayer et. al. PT vs RCR
 - Included Pts aged 50s and older and Traumatic and Degenerative Tears
- Failure Rate 25% in Both Groups
- Some changes on outcome scores but below the minimal clinically importance difference for the measure

RCT of Degenerative RCT

- Kukkonen, et al. Surgery vs PT
 - Patients 55 and older
- “operative treatment is no better than conservative treatment”

Adolescent Clavicle Fractures

- Traditionally Treated by FPs, Pediatricians, Orthopedists with a sling



Adolescent Clavicle Fracture

- Median Age All Clavicle Fractures: 13 years old
- 2.6-10% of All Fractures
- 5% All Fractures seen in the Emergency Room
- Most Common Pediatric Fracture
- 30-64 / 100,000 / year

Prospective and other Literature

Conservative Care Leads to Uniformly
Excellent Results in Adolescents

Nonoperative Management

“Regardless of patient age, sports participation, and final clavicle shortening, no differences in pain, strength, shoulder ROM, or subjective outcome... between the injured and uninjured limbs of adolescents treated nonoperatively for a displaced, shortened, midshaft clavicle fracture.”

Schulz, et. al. JBJS (AM) 2013 Functional and Radiographic Outcomes of Nonoperative Treatment of Displaced Adolescent Clavicle Fractures

Studied Fractures All Displaced and Shortened

Adult Clavicle Fractures

- Some evidence that surgery improves results in some **ADULTS**—lower nonunion rate
- However: “little evidence that the long-term functional outcome of operative intervention is significantly superior to nonoperative care.”
McKee, et. al. JBJS (AM) 2012
- Efficacy even more questionable in adolescents
- No Level I or Level II evidence

Anterior Cruciate Ligament Tears

- At least 200,000 performed annually in U.S.
- Vast majority on non-elite athletes and middle-aged weekend warriors
- Conservative care: Equal results with operative care for those patients who choose it

Some Comparisons

1 year: 125 patients, 51% non-operative, mean age 27, participate in level I or II activities

No difference other than slightly better functional scores in non-op group

10 years: 50 pair-matched high level athletes

No difference— OA, meniscal tears, activity level, objective or subjective functional outcomes

High Quality Prospective Studies

- Grindem, et. al. Prospective cohort study 143 pts 13-60 years, Level I or II sports. OR vs PT
- Pts can opt for surgery. 30% did not at 2 years.
- No significant difference: Pt. reported knee fct
 - Knee reinjury rates the same
 - Increased sports in non-op group

Randomized Controlled Trial

- Frobell, et. al. Report at 2 and 5 years
- 121 18-35 yr olds. Recreational sports to all but professional
- PT plus early ACLR vs PT with option ACLR
- 2 yrs: No difference pain, ADL, sports, functional scores

5 year follow-up

- 49% of Delayed Surgery group elected No Surgery
- Equivalent Knee Fct Scores
- Equivalent Rates of Knee OA
- Equivalent Rates of Meniscal Surgery
- Equivalent Sports
- Equivalent Pain levels
- Equivalent ADL and pt reported knee fct
- Equivalent general physical and mental HS

Our Recommendation

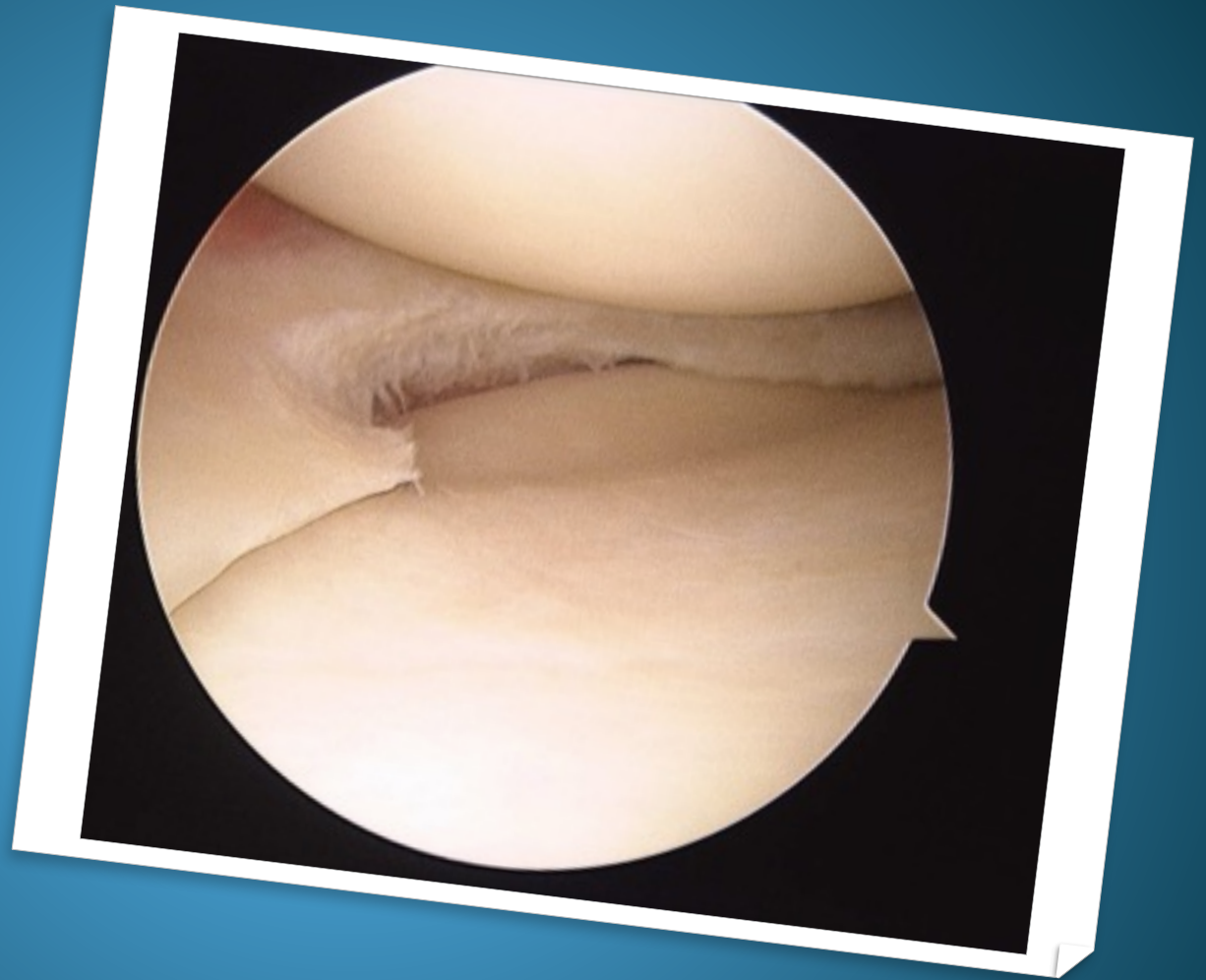
Acute isolated ACL tear: 3 months or more of conservative care

Inform patients that most will not return to competitive sports after surgery

Function, symptoms, rates of OA or meniscal tears are equivalent

Arthroscopy in Degenerative Knees

700,000 performed
annually. #1
orthopedic
procedure



Arthroscopic Partial Meniscectomy versus Sham Surgery for a Degenerative Meniscal Tear

- 146 patients underwent diagnostic arthroscopy and randomized for meniscal surgery
- Different team then evaluated Outcomes at 2, 6, 12 months
- **Conclusion: “arthroscopic partial medial meniscectomy provides no significant benefit over sham surgery in patients with a degenerative meniscal tear”** NEJM 12/26/2013

Surgery versus Physical Therapy for a Meniscal Tear and Osteoarthritis

- Randomized controlled trial of 351 patients
- Equal Results in pain relief and functional status between PT and Surgery group
- Katz, et. al. NEJM. 2013

Prospective Studies

Herrlin et. al. Arthroscopic or conservative treatment of degenerative medial meniscal tears: a prospective randomized trial.

Yim et al. *A comparative study of meniscectomy and nonoperative treatment for degenerative horizontal tears of the medial meniscus.*

Herrlin et al. Is arthroscopic surgery beneficial in treating non-traumatic, degenerative medial meniscal tears?

Kirkley et al. *A randomized Trial of Arthroscopic Surgery for Osteoarthritis of the Knee. NEJM 2008*

Others Go Further

Meta-analysis BMJ 2015

Arthroscopic surgery for degenerative knee: systematic review and meta-analysis of benefits and harms

RCTs only for Benefits, Other evidence allowed for Harms

“these findings do not support the practice of arthroscopic surgery for middle aged or older patients with knee pain with or without signs of osteoarthritis.”

Our Choosing Wisely List

- Level I or Level II evidence
- Patient-centered and Meaningful for Patients making Common Medical Decisions
- Addresses Stretched Indications