Comprehensive Orthopaedic Review
Recent JBJS Shoulder & Elbow Articles
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• Review of 19 patients who had arthroscopic synovial biopsy of painful shoulder arthroplasty
• 47% (9/19) grew P. acnes at mean of 10 days (range 5 to 18 days)
• All 19 patients had revision surgery and 17 had open biopsies
• 7/7 correlation arthroscopic & open biopsies
• 1/7 correlation fluoroscopic & open biopsies
• Diagnostic Level I study (Harvard University)

• Slow-growing gram-positive rods found as normal skin flora in pilosebaceous glands
• Standard preps do not sterilize the skin, so avoid implant contact with dermis
• These patients present as stealth infections, usually male patients w/pain, stiffness, implant loosening after initial good postoperative result
• Hold multiple specimens for minimum 2 weeks

4 Propionibacterium acnes
• Conventional lab is nondiagnostic
• Cloudy synovial fluid, osteolysis, periprosthetic membrane
• Obtain a minimum of 5 specimens
• Cultures aerobic, anaerobic and hold for minimum 17 days

5 Early Versus Late Culture Growth of P. acnes in Revision Shoulder Arthroplasty. Frangiamore et al., JBJS 2015; 97A: 1149–58.
• Retrospective review of 46 patients P. acnes-positive cultures having revision shoulder arthroplasty
• Two groups were studied true positives & false positives
• Shorter time to positive culture in true positive group
• Higher % positive cultures in true positive group
• Diagnostic Level III study (Cleveland Clinic)

• Study group – 300 patients with frozen shoulders
• Control group – 900 matched patients with normal shoulders
• Conditional logistic regression analysis
• Hypercholesterolemia & inflammatory lipoproteinemias are related to frozen shoulder
• Prognostic Level III study (Korea)

7 Risk Factors for Frozen Shoulder
• Trauma
• Prolonged immobilization
• Shoulder surgery
• Cardiac disease
- Diabetes mellitus
- Epilepsy
- Parkinson’s disease
- Thyroid dysfunction
- Hyperlipidemia

8 Rotator Cuff Lesions in Patients with Stiff Shoulders.
   • 379 pts w/stiff shoulders had US or MRI to assess RC integrity (Japanese study)
   • In group with stiffest shoulders, 91% had intact RC, 9% had partial RCTs
   • In other groups, up to 50% patients had full thickness RCTs
   • Active and passive ROM should be measured both standing and supine to minimize shoulder pain

9 Treatment of Nontraumatic Rotator Cuff Tears – A Randomized Controlled Trial with Two Years of Clinical and Imaging Follow-up.
   • 183 patients at least 55 years old with symptomatic supraspinatus tears
   • Group 1 (Rx w/PT only), Group 2 (Rx w/PT and acromioplasty), Group 3 (Rx w/PT, acromioplasty and RCR)
   • No difference in outcomes among the three groups at 2-year follow-up
   • PT alone is reasonable initial treatment option
   • Rotator cuff tears may progress in size over time
   • Therapeutic Level I study (Finland)

10 Long–Term Follow–up After Latissimus Dorsi Transfer for Irreparable Rotator Cuff Tears.
   • Clinical & radiographic outcomes (2000–05)
   • Study group – 86 patients, 93 shoulders, follow–up 9.3 years
   • Better results in younger patients, primary transfers
   • 10% failure rate within 2 years implying 90% good Constant score at 10–year follow–up
   • Therapeutic Level IV study (Germany)

   • 40 patients rx modified open Bankart (min 20–year follow–up)
   • 7 (17.5%) had recurrent instability, 6 after more than 8 years w/o symptoms
   • Good long–term outcome scores, but high recurrence rate from shoulder–specific activity
   • Therapeutic Level IV study (Austria, Italy)

12 Clinical Outcome and Glenoid Morphology After Arthroscopic Repair of Chronic Osseous Bankart Lesions.
   Kitayama et al., JBJS 2015; 97A: 1833–43.
   • 85 consecutive patients w/chronic anterior instability and osseous Bankart lesion rx w/arthroscopic repair
   • 34 patients w/<15% AP bone loss, mean follow–up 6.2 yrs
   • Good outcome scores and glenoid morphology was normalized during follow–up period
Therapeutic Level IV study (Japan)

- 183 athletes (117 participating in contact sports), 200 shoulders
- 156 anchored fixation, 44 anchorless
- Anchored fixation had better ASES scores & higher rate of return to play (RTP)
- Overall 90% RTP, 64% RTP at same level

Therapeutic Level II study (University of Pittsburgh)

- Prospective randomized controlled trial 59 patients w/displaced midshaft clavicle fx
- 33 patients rx w/non-locking recon plate, 29 patients rx w/nail
- No differences in time to union, outcome scores, patient satisfaction rates
- Implant pain - 10 patients in nail group, 4 patients in plate group
- Implant removal recommended for all in nail group

Therapeutic Level I study (Brazil, Switzerland)

**15** Glenoid Bone-Grafting in Revision to a Reverse Total Shoulder Arthroplasty. Wagner et al., JBJS 2015; 97A: 1653–60.
- 143 consecutive RSAs performed as revisions
- 41 patients (29%) were bone-grafted, 102 patients were not
- 7 patients (18%) required second revision within 2 years (loosening in 4, instability in 2, infection in 1)
- High satisfaction despite reoperation rate

Therapeutic Level III study (Mayo Clinic)

**16** Factors Affecting Length of Stay, Readmission, and Revision After Shoulder Arthroplasty. Matsen et al., JBJS 2015; 97A: 1255–63.
- Longer stays – female, advanced age, Medicaid, comorbidities, fracture, higher hospital case volume, lower surgeon case volume
- Readmission – advanced age, comorbidities
- Revision – younger age, arthrosis

Prognostic Level III study (University of Washington)

- 22 studies were included, 494 patients, 498 elbows
- Overall complication rate 24.5%
- LABC neurapraxia 9.6% was most common complication
- Cortical button better than intraosseous screw

Therapeutic Level IV study (University of Illinois)

**18** Distal Biceps Repair Complications
- LABC neurapraxia – 9.6%
- Heterotopic ossification – 4.4%
- Elbow stiffness – 3.2%
- Tendon re-rupture – 1.6%
- Infection – 0.8%
- Radioulnar synostosis – 0.8%
- 100 patients, 57 w/Mason type 1, 43 w/Mason type 2
- 70 radial head fx, 30 radial neck fx
- At 10–year mean follow-up, 14% stiffness, 24% pain
- Nonoperative treatment yields excellent results
- Therapeutic Level IV study (Scotland)

20 Radial Head Fractures Treated with Modular Metallic Radial Head Replacement. Marsh et al., JBJS 2016 98A: 527–35.
- 55 patients w/radial fx were rx w/modular implant
- Follow-up mean 8.2 yrs – less elbow motion, strength
- 45% radiolucencies, 38% UHJ arthrosis, 36% HO
- No implants required removal
- Mid-term outcomes improved vs 2–year results
- Therapeutic Level IV study (Ontario, Canada)

21 Clinical Outcomes of Semiconstrained Total Elbow Arthroplasty in Patients Who Were Forty Years of Age or Younger. Park et al., JBJS 2015; 97A: 1781–91.
- Retrospective review 23 elbows (mean 33 years)
- Good functional improvement, pain relief
- At mean 10.8 yrs follow-up, loosening rate 13%, bushing wear 17%, revision rate 22% (5 elbows)
- 95% 8–year implant survival, 89% 15–year implant survival
- Therapeutic Level IV study (South Korea)

- 6 of 16 (38%) specimens showed trifurcation upper trunk
- Suprascaular nerve most lateral, then posterior division, then anterior

23 Test Taking Hints
- Pace yourself
- Skip difficult questions
- Record answers as you go
- Answer on basis of first impression unless you have misread the question
- Correct responses have “may” or “can”
- Incorrect responses have double negatives, generalizations (“always” or “never”)
- Eliminate the wrong answers
- Guess most conservative treatment or the longest answer
- Choose the completely correct answer
- Rest before the test!