Complex Scenarios, Decision making, and Complications in Total Shoulder Arthroplasty
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Disclosure These Opinions are those of a Crazy Texan and may only apply to Crazy Texas patients and when surgeries are performed by a Crazy Texan

The intoxication of the reverse prosthesis

Which one?
IT MAY LOOK EXCITING FROM THE OUTSIDE, BUT YOU MAY NOT WANT TO SPEND THE NIGHT!

Reverse Shoulder Replacement

Curb Your Enthusiasm

Temper your enthusiasm. Evaluate the entire patient. Give conservative treatment several tries. These are older patients with multiple comorbidities that will fall.
And Fall

Then Die

**Complex Scenarios**
- rTSA for Fracture
- Comorbidities (CVD, DM, Nicotine, RA, Seizure Disorders)
- Deficient/Dysplastic native glenoid
- Deficient/Dysplastic revision glenoid
  Revision of cemented humerus

Who says “You can’t take it with you”?
Rotator Cuff Tears after Total Shoulder

Reparable
- Small, mobile, good quality tendon = fix Trans-osseous bone tunnels consider age
- Mitek Rotator cuff quick anchor remove head go around collar

Irreparable
- Supra/Subscap = rTSA
- Infra/Teres Minor = Latissimus Dorsi Transfer

Superior Capsular reconstruction

Anatomy

Bridging Patch Graft
- Fascia Latae
- Superficialis

Superior Capsular Reconstruction
- Fascia Latae
- Superficialis

Biomechanical Effects of SCR

Bridging Patch Graft Superior Capsular Reconstruction

Mihata et al, AJSM 2012
SCR with glenoid excision for failed cuff and dislocated glenoid component

R.S.
Cuff Failure and Glenoid Osteolysis 15 years post TSA

JS
57 yo right hand dominant male presents with bilateral shoulder pain for years. He has a remote history of recurrent dislocations of the left shoulder as well as a fracture. He has previously had a left shoulder hemiarthroplasty performed in 2004 by another physician. He has persistent and a small area of redness at the lateral aspect of his deltopectoral incision distally. Denies fevers/chills but does have acne since the first surgery
PMH: L ulnar nerve neuritis, Cervical radiculopathy
Case 1

PE
Bilateral flexion to 120
ER: 45
IR: 80
SI: 0
Full rotator cuff strength
No point tenderness

Case JS

Labs:
L Shoulder CT guided aspiration: + Propionibacterium acnes 10/15/14
Nasal culture: + MSSA 7/22/16
Operative plan: Arthroscopy with cultures and tissue biopsy of left shoulder

Findings:
- 5 mL of turbid synovial fluid was aspirated
- Villous synovitis biopsies sent for cultures and permanent section
- Distal deltopectoral incision was open and a fasciectomy was performed where thickened

Sent home with Doxycycline and Bactrim pending results
Plan for right total shoulder arthroplasty in October 2016
M B
63 year old right hand dominant female originally presents with left shoulder pain following Shake Weight use. Was diagnosed with glenohumeral arthritis and planned for TSA

PMH: DM, breast CA, HTN, COPD, Ulnar nerve neuritis

10/28/11: Left TSA

Case 2
11/8/11: developed some pain and swelling consistent with RSD
- SB 3 L, CRP neg, WBC neg
- No relief from stellate block
11/8/12: CT aspiration for continued pain, 3 cc of turbid fluid
- Labs and cultures neg
- Dye seen tracking into glenoid component
12/5/12 I&D of left shoulder with removal of glenoid component. PICC for IV ABX.
Pathology results: acute inflammation
Cultures: gram + bacilli Corynebacterium → placed on Doxycycline, repeat labs negative
What would you do?
How to remove cement?

8/19/13: Conversion to reverse TSA with allograft tibial strut and Luque wire. Tuberosities were osteotomized for removal of previous implant
Intraoperative cultures negative

Case 2
5/20/15: CT aspiration for pain, cultures negative
7/17/15: Removal of Luque wires, stem stable
Intraoperative cultures negative
9/21/15: repeat CT aspiration: cultures negative, labs negative
2/1/16: excision of non-united greater tuberosity fragment, poly exchange to a 12 mm constrained poly
Arthroscopy negative.
No pain on most recent follow up visits!

Complications with Reverse Prosthesis are disease and surgeon and implant Specific
Overall Revision
16% Sirveaux et al 2005 CTA
31% 17% Dalgleish et al 2004
>50% 11.5% Gilbart et al 2004
Re-operation in 12 of 55 pts
68% Rittmaster et al 2001 RA
38% Levy et al 2007 journal
200% Wierks et al 2009
85 complications in 105 pts

Scapular Notching
Low placement lateralized Glenosphere and 135 degree neck angle and slight inferior tilt virtually eliminates notching.

Inferior Scapular Erosion Notching Hopefully a thing of the past

The majority of patients (78%) after reverse prosthesis of the Grammont design will have scapular notching related to the mechanical impingement of the humeral component against the inferior scapula combined with polyethylene wear.

Inferior Scapular Erosion Notching Prevention

- Use 135 component
- Baseplate at inferior glenoid rim with Glenosphere below glenoid rim
- Lateralized components
- When using 135 use inferior offset Glenosphere
Infection
Treatment no different than with primary related to timing Host and organism. Initial reports dismal with 50% reinfection rates
Early: Debridement and retention
Late: Single or dual Staged exchange or resection arthroplasty. Depending on Host type and Organism. Consider long term suppression if implants are well fixed in debilitated individuals

Instability
Generally a soft tissue tensioning issue with the Grammont Style
Occasionally an impingement issue with the 135 degree lateral offset implants Incidence: 3.8% (Eklund 2004)
5% (Walch 2004)
0% (Mole' 2004)
6.2% (Gerber 2004)

Case: DJ 68 y/o Painful left shoulder with significant glenoid wear cuff deficient shoulder
How do you remove cement?

Episiotomy with circumferential reaming or Free Window with suturing
Glenoid Base Plate Loosening in RTSA
Prevention
Preop planning
Baseplate at inferior
glenoid rim or use
inferior offset
Glenosphere
Inferior tilt especially in
weight bearing patients

Glenoid Loosening Metalosis

Coversion to hemiarthroplasty Glenoid
Component Loosening
Trifecta  Humeral Fracture Brachial Artery Laceration Median Nerve palsy
We at Risk sincerely hope you never have a complication

But if you do

Get ‘er done dude
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