Critical Points to Perform a Reverse Total Shoulder Arthroplasty

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5 Critical Points

1. Patient selection
2. Preoperative planning
3. Glenoid exposure
4. Glenoid implantation
5. Don’t overstuff!!

1. Patient selection
   • Original indication
     – Massive rotator cuff tear with arthritis, pseudoparalysis, age over 70 years
   • Recent indications
     – Massive (unfixable) cuff tear
     – With or without arthritis
     – With or without pseudoparesis
     – Any age (delayed resection?)
     – Revision arthroplasty
     – Failed hemiarthroplasty
     – Rheumatoid arthritis
     – B2 glenoid

Know your patient and educate

• Good results with light recreational activities:
  – Cooking, driving, gardening, lawn mowing, raking, snow shoveling, golf, swimming
• Intermediate survivorship comparable to anatomic TSA
• Not appropriate:
  – heavy manual labour
  – young (<60 yrs) who are not willing to accept that resection may be only option if it fails
• ? arm ambulators, walkers ?
• Main indication is pain
• Will not provide normal strength
• Need to counsel your patient!!

2. Preoperative Planning
   1. External rotation lag, + hornblowers
      – Examine patient and educate!
      – Preserve posterior cuff
      – Latissimus dorsi transfer
      – Joint lateralization
      – Humeral retroversion
      – Mixed results for all!
2. Glenoid morphology (posterosuperior)
   - Favard classification (Levigne et al, JSES, 2008)
   - Consider degree and location of bone loss on glenoid and decide if you will need bone grafting to avoid superior tilt of the implant
   - Superior tilt
     - Increased risk:
     - decreased arc of motion
     - medial scapular impingement
     - Instability
     - higher failure rates
   - Superior glenoid wear not uncommon

3. Templating
   - Goal: maximize impingement free arc of motion
     - inferior position
     - inferior tilt
     - lateralization
   - Assessing medialization
     - If eroded to base of coracoid then lateralize baseplate with bone graft or use lateralized implant
     - Baseplate coverage -- ?? 50%
   - Glenoid Morphology – E3 Glenoid
     - Limit reaming of subchondral bone but preferable to have implant on some native bone
     - Central post contained within glenoid vault, may need to be longer
     - Patient specific guides

3. Glenoid Exposure
   - Humerus
     - Aggressive capsular release to inferior neck
     - Cut enough bone but don’t compromise the posterior cuff
     - Remove all osteophytes
   - Glenoid
     - Extensive circumferential periglenoid capsulotomy
     - Remove inferior glenoid lip or osteophyte
     - Remove residual inferior cartilage

4. Glenoid Implantation
   - Know your implant!
   - Medialized design
     - Central post centered over inferior circle of glenoid
     - Slight inferior tilt
     - Contained within the vault
       - 2 mm drill bit
     - screw purchase in good bone
       - Base of coracoid, vault and spine of scapula, scapular pillar
• Bone loss options
  • Humeral head
    – Cut humeral head
    – Cored humeral head
    – Allograft
  • Augments

5. Don’t Overstuff
  • Restore appropriate soft tissue tension
    – Palpate conjoint tendon
    – Mild “shuck” of joint
    – Preop planning critical
    – Assess stability intraoperatively
  • Don’t overlengthen
    – Full length humerus xray opp side
  • Overlengthening can lead to acromial fatigue fractures, stiffness, and neurologic injury

References


