DISCLOSURES

• Royalty
  Smith-Nephew
  DJO
LITERATURE OF COMPLICATIONS (23 series)

- > 1000 shoulders
- 23 different complications
- 10.4%
- Accumulate over time
COMPLICATIONS

1. Identification
2. Prevention
3. Treatment
## MEDICAL COMPLICATIONS
(3480 patients, 4019 primary arthroplasties)

<table>
<thead>
<tr>
<th>Medical Complication</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>0.8%</td>
</tr>
<tr>
<td>Cardiac</td>
<td>2.6%</td>
</tr>
<tr>
<td>Thromboembolic</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

**Risk Factors:**  
- Age  
- Comorbidities  
- Prior events  
- Tumor (mortality)
NERVE INJURIES
BRACHIAL PLEXUS STRETCHING

- 18 (4%) of 417 shoulders
- Knowledge of no direct nerve injury at surgery
- Continue passive ROM Support distal joints
- Recovery excellent / very good
PERIPROSTHETIC FRACTURES

- 2588 TSA
- 72 fractures (2.8%)
  - 47 intraoperative
  - 25 postoperative
PERIPROSTHETIC HUMERAL FRACTURES

- Acute
  - internally fix
- Late
  - consider
    - component security
    - osteolysis
    - displacement
    - location
- if secure, minimal bone changes,
  - mild displacement → brace
- otherwise fixation ± revision
• Delayed healing (6+ mos)
• More extensive fixation
• ± bone graft
ROTATOR CUFF TEARING + INSTABILITY

- Rotator cuff repair / capsular tightening successful in approximately 1 / 2 of cases
- Strongly consider reverse arthroplasty
PERIPROSTHETIC INFECTIONS

- 2588 TSA
  32 (1.2%) deep infections
  20 yr infection free
  97.2%

- Factors
  Male
  Younger age
DIAGNOSIS & THE FAILING ARTHROPLASTY

- Infection may be overt
- Covert
  - Pain
  - Loss of motion
  - Stiffness
- Minimal erythema
- Malaise
- Confounding
- Structural issues
TREATMENT OPTIONS FOR DEEP PERIPROSTHETIC INFECTIONS

- Medical
  Antibiotics alone

- Surgical
  Antibiotics plus
  1. Resection
  2. Debridement, irrigation
  3. One-stage exchange
  4. Two-stage exchange
<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute infection (acutely treated)</td>
<td>I &amp; D</td>
</tr>
<tr>
<td>Unexpected culture</td>
<td>I &amp; D</td>
</tr>
<tr>
<td>Chronic infection</td>
<td>1 Stage?</td>
</tr>
<tr>
<td>Extensive soft tissue and bone infection</td>
<td>1 or 2 Stage Resection</td>
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<tr>
<td>Treatment Method</td>
<td>No Active Infection (%)</td>
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<tr>
<td>------------------------------------------</td>
<td>-------------------------</td>
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<tr>
<td>Unexpected (\oplus) culture (107)</td>
<td>90</td>
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<tr>
<td>I&amp;D, 1 Stage?</td>
<td></td>
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<tr>
<td>Resection (14)</td>
<td>100</td>
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<tr>
<td>I &amp; D (12)</td>
<td>67</td>
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<tr>
<td>1 Stage (4)</td>
<td>100</td>
</tr>
<tr>
<td>2 Stage (35)</td>
<td>89</td>
</tr>
</tbody>
</table>
REVISION OF TSA

- 212 (8.2%)
- Survival revision-free
  - 5 yr  94.2%
  - 10 yr 90.2%
  - 20 yr 81.4%
- Component loosening in 52
**TREATMENT OF GLENOID COMPONENT LOOSENING**

- Refixing a new glenoid component ± bone grafting
- Converting to a hemiarthroplasty ± bone grafting
- Converting to a reverse ± bone grafting
COMPLICATIONS IN TSA

- Simple ↔ complex
- Thorough evaluation
- Single or multiple
  Problem / Solution list
- Positive outcome
  Somewhat less than desired