What is new in finger joint Arthroplasty

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- Volar-plate Arthroplasty (PIPJ)
- Hemi-Hamate Arthroplasty (PIPJ)
- Silicone Arthroplasty (PIPJ, MCP, CMC)
- Metal on Plastic Arthroplasty (PIP, MCP)
- Pyrocarbon Arthroplasty (PIP)
Hemi-Hamate Arthroplasty
Hemi-Hamate Arthroplasty
HHA vs VPA

- Technically difficult
- More anatomic reconstruction
- Can get good ROM
- No long term fu
- Chronic fracture dislocations
- Greater than 60% articular involvement

- Re dislocation
- Angular deformity
- Stiffness
- Restores volar buttress
- Historical procedure (Peter Stern ASSH, 2014)
Silicone Arthroplasty

• **Indications**
  - Inflammatory arthritis (RA)
  - Post traumatic arthritis (central digits)
  - Osteoarthritis (Central digits)
  - “Low demand” patients
  - Minimal deformity

• **Contraindications**
  - Central Slip Deficiency
  - Prior infection
  - Severe bone loss or deformity
  - Border digits (IF)
Silicone Arthroplasty

• MCP arthroplasty RA
  – Well established indication
  – Results are fairly predictable
• MCP arthroplasty OA, post-traumatic
  – Have limited data
  – Most would avoid border digits
  – Especially if there is angular deformity
• Patients have consistent pain relief
• Are satisfied with results
• No improvement in ROM/GS
• Improved functional arc of motion
• Improved alignment
• Implant fracture are common
• Revision rates are relatively low
• 30 patients; 38 joints
• F/U 56 months
• Improved pain (70% pain free)
• Improved range of motion
• 11% revision rate (2 fractures, 2 loosening)
• 13 patients; 16 joints
• Anatomically neutral implant (NeuFlex)
• 30 deg flexion
• High pain relief
• Mean arc of 60 degrees
QuickTime™ and a decompressor are needed to see this picture.
• 22 patients (38 joints)
• Average f/u 10 years
• Consistent pain relief
• No change in ROM (50 deg)
• 90% survivorship
• All had subsidence
• Implant fracture (55%)
• Coronal deformity was common
• But patient satisfaction remained high
• Revision rates were low
  – 2 symptomatic implant fractures
  – 1 infection
• 34 revisions (IF, MF)
• Pain with implant fracture
  – pain relief
• Stiffness
  – Improved motion 33-71
• Deformity
  – Difficult to improve
• 3 Patients
• 20 month fu
• Improved pain and DASH scores
Metal on Plastic Arthroplasty

- MCP for RA
- MCP for post traumatic
Metal on Plastic Arthroplasty

- Unconstrained implant
- Need good soft tissue/ligaments
- Minimal bone resection
- Cemented vs Uncemented
- Little long term data

- Contraindications
  - Bone loss
  - Insufficient ligaments
    - Central slip/collateral
  - Infection
  - RA (relative)
Metal on Plastic Arthroplasty

• Johnstone: Hand Surgery 2001
  – 18 DJD, 2 RA
  – 15 month f/u
  – No reports on motion
  – 10/13 satisfied
  – Steep learning curve
• 43 patients
• 37 month follow up
• No improvement in motion (57 Deg)
• 7 with more pain
• 26% revision rate (loosening)
• Recommend use of cement
  – Revision is more challenging
• 6 joints (cemented)
• 35 month follow up
• Good pain relief
• 60 degree arc of motion
  – 30 degree pre-op
• No revisions
• Un cemented implant had subsidence
• No deformity
• Cementing maybe problematic for revisions
QuickTime™ and a decompressor are needed to see this picture.
Pyrocarbon Arthroplasty

- Unconstrained
- Graphite Core, Carbon surface
- Biocompatible
- Good wear characteristics
Pyrocarbon Arthroplasty

- OA
- Post-traumatic
- Inflammatory arthritis
- Infection
- Bone loss
- Severe deformity
- Poor soft tissues
• 39 arthroplasties
• 55 month f/u
• Loss of motion
• Numerous complications
  – Implant migration
  – Implant loosening
QuickTime™ and a decompressor are needed to see this picture.
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• 203 pyrocarbon; 91 Metal-Plastic
• 76 revision; 19 two revisions
• Extensor tendon problems; Chamay
• RA Collateral Ligament failure
• Amputation correlated with revisions
• Little pain; no increased motion
Conclusions

- Silicone arthroplasty has high satisfaction and pain relief
- Resurfacing arthroplasty has higher revision and complication rate
- Soft tissue integrity for durable results
- Long term results show no improvement in range of motion results
• Border digits have high stresses
• Maintain collaterals if possible
• Volar approach avoids extensor tendon issues
• Be ready for revisions/fusion
• Last option
Thank you