

What is new in finger joint Arthroplasty

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Surgery

- 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

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- Patients have consistent pain relief
- Are satisfied with results
- No improvement in ROM/GS
- Improved functional arc of motion
- Improved alignment

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- Implant fracture are common
- Revision rates are relatively low

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- 30 patients; 38 joints
- F/U 56 months
- Improved pain (70% pain free)
- Improved range of motion
- 11% revision rate (2 fractures, 2 loosening)

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- 13 patients; 16 joints
- Anatomically neutral implant (NeuFlex)
- 30 deg flexion
- High pain relief
- Mean arc of 60 degrees

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- 22 patients (38 joints)
- Average f/u 10 years
- Consistent pain relief
- No change in ROM (50 deg)
- 90% survivorship

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- 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

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- 34 revisions (IF,MF)
- Pain with implant fracture
 - pain relief
- Stiffness
 - Improved motion 33-71
- Deformity
 - Difficult to improve

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- 3 Patients
- 20 month fu
- Improved pain
and DASH
scores

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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 Un-cemented
- 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

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- 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

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- 6 joints (cemented)
- 35 month follow up
- Good pain relief
- 60 degree arc of motion
 - 30 degree pre-op

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- No revisions
- Un cemented implant had subsidence
- No deformity
- Cementing maybe problematic for revisions

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Pyrocarbon Arthroplasty

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

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Pyrocarbon Arthroplasty

- OA
- Post-traumatic
- Inflammatory arthritis
- Infection
- Bone loss
- Severe deformity
- Poor soft tissues

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- 39 arthroplasties
- 55 month f/u
- Loss of motion
- Numerous complications
 - Implant migration
 - Implant loosening

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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