Total hip replacement following hip fusion

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Hip Term
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Issues

- Indications for arthrodesis
- Reasons for considering subsequent arthroplasty
- Surgical considerations
- Problems/ pitfalls
- Results in published literature

Indications for arthrodesis

- Severe unilalateral athritis following infection/ trauma in young patients
- Spontaneous fusion post infection inc. TB
- Allows long-term pain relief and resumption of activities including heavy labour
- Ideal position:
    - adduction (0-5 degrees)
    - ext. rotation (0-15 degrees)
    - Flexion (30 degrees)

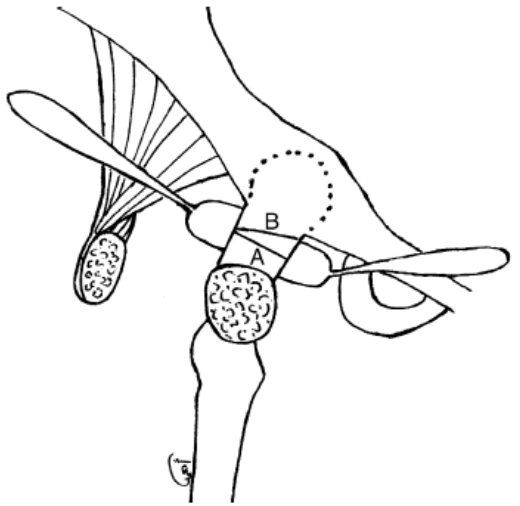
Reasons for considering subsequent arthroplasty

- Pain in neighbouring joints
  - Moderate abduction - LS spine degeneration
  - Severe abduction – as above + opposite hip
  - Excessive adduction/ int rotation – ipsilateral knee
- Increases failure rate in THR of the contralateral hip(1)
- Pain from pseudarthrosis (rare)

1 Garvin et al. JBJS Am 1989; 71:1355-62

Surgical considerations

- Indication for arthrodesis
- Abductor function
- Pelvic bonestock
- Leg lengths
- Loss of anatomical landmarks
- Femoral anteversion if fusion in infancy
- Sciatic/ femoral nerve function
- Adductor tightness
- Heterotopic ossification
- Surgical approach



Problems/ pitfalls

- Quiescent TB
  - Consider peri-operative anti-tuberculous treatment (6 weeks prior/ 3 months post surgery)
- Nerve injury
  - Sciatic/ femoral
- Dislocation
- Infection
  - Spontaneous vs surgical fusion

Summary of papers

- Strathy et al. JBJS Am 1988
  - 88 hips, 9-15 yr f/u. 26% revision rate
- Kilgus et al. JBJS Am 1990
  - 41 hips, 2-16 yr f/u. 22% revision rate
- Schafer et al. Arch Orthop Trauma Surg 2000
  - 15 hips, 2-13 yrs f/u, 27% revision rate
- Kim et al. CORR 2003
  - 87 hips, 8-18 yrs f/u, 18% revision rate
- Schuh et al. Orthopade 2005
  - 34 hips, 2-17 yrs f/u, 12% revision rate
- Morsi. J Arth 2007
  - 19 hips, 5-9 yr f/u, 5% revision rate

- Hamadouche et al (Paris) 2001
  - 45 patients (retrospective)
  - Mean F/U 8.5 years (5 – 21) post THR
  - 96% painfree, 91% satisfactory function, mean arc of flexion 88 degrees
  - No dislocations
  - 1 haematoma requiring debridement
  - 1 re-activation of old TB
  - 96.7% survival at 8 years
  - Intra-operative status of gluteal muscles only predictive factor for walking ability

- Joshi et al (Wrightington) 2002
  - 187 patients (retrospective)
  - Mean F/U 9.2 years (2 – 26) post THR
  - 79% pain-free/ minimal pain, 83% good-to-excellent function, 79% good-to-excellent ROM
  - 96.1% survival at 10 years
  - Better function if fusion >15 y.o. (p=0.04)
  - 2% Dislocation rate
  - <2% deep infection
  - Heterotopic Ossification 13% (none symptomatic)
  - 7% nerve injury
  - Abductor function not formally assessed

Previous TB

- Laforgia et al (Wrightington) 1988
  - 72 old TB hips and 42 old quiescent septic arthritis
  - Only 15% received peri-operative TB prophylaxis
  - F/U >=2 years
  - 1.4% (1 pt) reactivation of TB if fused
  - 4.2% reactivation of TB if still mobile
  - 9.5% deep infection in previous septic arthritis

Conclusion

- Challenging surgery
  - Trans trochanteric approach recommended
  - Wedge neck cut
  - Careful dissection
  - Iliopsoas/ adductor tenotomies
  - Trochanteric advancement
  - Protected post-operative rehab

- Factors affecting outcome
  - Age at fusion
    - Better function if >15
  - Spontaneous vs surgical fusion
    - Lower infection rate post spontaneous fusion
  - Old TB
    - Recommend peri-operative anti tuberculous regime


Thank you