ELBOW FRACTURES - THE PLACE OF TOTAL ELBOW ARTHROPLASTY

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Distal Humeral Fractures

Management Philosophy

• Rigid internal fixation
• Minimal immobilisation
Distal Humeral Fractures


- O.R.I.F 49 patients
- Age 75-90 years
- Very good results 31%
- Good results 49%
- Fair / Poor results 20%
- But 5% constant pain
Distal Humeral Fractures
Pereles et al – J.Trauma 1997:43; 578-84

- O.R.I.F 18 patients
- Age over 60 years
- Clinical and SF-36 Health Survey
- 28% Moderate pain during activity
Distal Humeral Fractures
Caja et al – Injury 1994:25;433-8

• O.R.I.F. 22 patients
• Movement / Functional outcome depends on age
• Even with early mobilisation results worse in the elderly
Distal Humeral Fractures: Total Elbow Arthroplasty


- 20 patients
- Age 48-92
- Mayo Score – 15 Excellent, 5 Good
- Mean movement 25 - 130
- But 9 patients had rheumatoid arthritis
Distal Humeral Fractures: Total Elbow Arthroplasty


- 10 patients
- Mean age 84 years
- Mean Mayo Score 94
- Mean follow up only 17 months
Distal Humeral Fractures: Total Elbow Arthroplasty


- 19 patients
- Mean age 73 years
- Mean follow up 3 years
- Mean DASH 23 (0.92 – 63.3)
- Mean Mayo 93(80 – 100)
Fractures of the Distal Humerus
Fractures of the Distal Humerus
Fractures of the Distal Humerus
Total Elbow Arthroplasty

Indications

• Cobb and Morrey 1997
• Mean age of patients 72 years
• Has that changed over the years
Total Elbow Arthroplasty

- Review of the literature
- E-mail survey
Literature Review 1995 - 2005

50 papers - 2123 T.E.A.
6 papers - T.E.A. for distal humeral fractures
1 paper - T.E.A. for non-union
1 paper - T.E.A. for post-traumatic arthritis
E-mail Survey

“When would you perform a total elbow arthroplasty for a distal humeral fracture, taking into account the patient’s age, sex, occupation and co-morbidities”.
E-mail Survey – Acute Fractures

1. Comminuted fractures age 75 yrs +
2. Comminuted fractures with osteopenia age 70 yrs +
3. Comminuted fractures with degenerative arthritis 60 yrs +
4. Comminuted fractures with inflammatory arthritis - no age cut off
5. Comminuted fractures with pathological bone - no age cut off
6. Comminuted fractures with reduced life expectancy - no age cut off
E-mail Survey

Distal humeral fracture non union, age 70 yrs +

Post traumatic arthritis, age 60 yrs +
Fractures of the Distal Humerus
Fractures of the Distal Humerus
Reconstruction in the presence of bone loss at the elbow

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CAUSES OF BONE LOSS

- Inflammatory disease
- Elbow fractures
- Failed total elbow arthroplasty
RECONSTRUCTION OPTIONS

- Standard implant
- Custom implant
- Standard implant with impaction grafting
- Standard implant with autograft
- Standard implant with allograft
RECONSTRUCTION OPTIONS

Standard implant
RECONSTRUCTION OPTIONS

Custom implant
RECONSTRUCTION OPTIONS

Standard implant with impaction grafting
RECONSTRUCTION OPTIONS

Standard implant with autograft
RECONSTRUCTION OPTIONS

Standard implant with allograft
Allograft initial preparation

Endoprosthesis cemented into Allograft outside body
Allograft initial presentation
TOTAL ELBOW ARTHROPLASTY FOR BONE LOSS

Summary - Choosing the appropriate reconstruction technique can enable elbow salvage even in the presence of massive bone loss