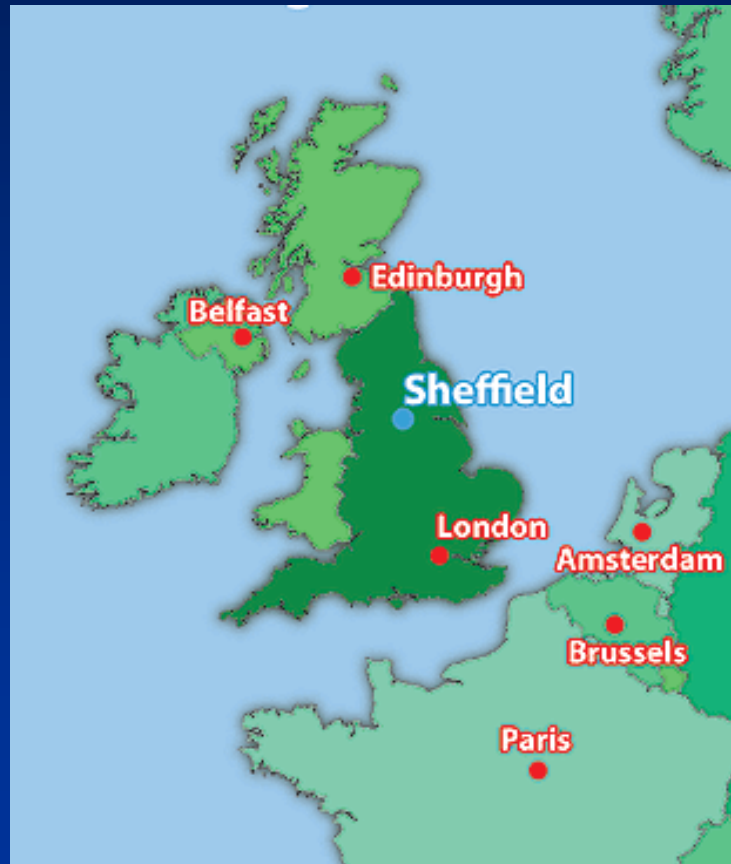


ELBOW FRACTURES - THE PLACE OF TOTAL ELBOW ARTHROPLASTY



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Distal Humeral Fractures

Management Philosophy

- Rigid internal fixation
- Minimal immobilisation

Distal Humeral Fractures

John et al - J.Bone Joint Surg 1994:76B;793-6

- 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

Cobb and Morrey – J.Bone Joint Surg
1997:79A;826-32

- 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

Gambirasio et al – J Bone Joint Surg
2001;83B;974 - 8

- 10 patients
- Mean age 84 years
- Mean Mayo Score 94
- Mean follow up only 17 months

Distal Humeral Fractures: Total Elbow Arthroplasty

Garcia et al – J Bone Joint Surg 2002:84B;812 - 6

- 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

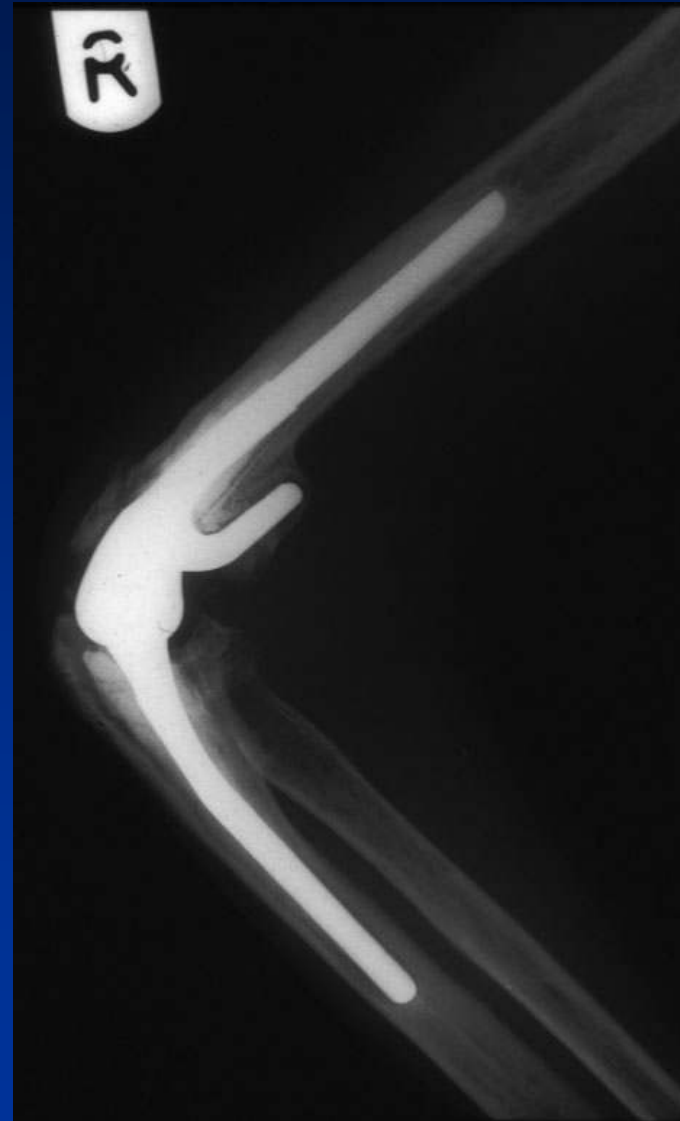
Distal humeral fracture non union, age 70 yrs +

Post traumatic arthritis, age 60 yrs +

Fractures of the Distal Humerus

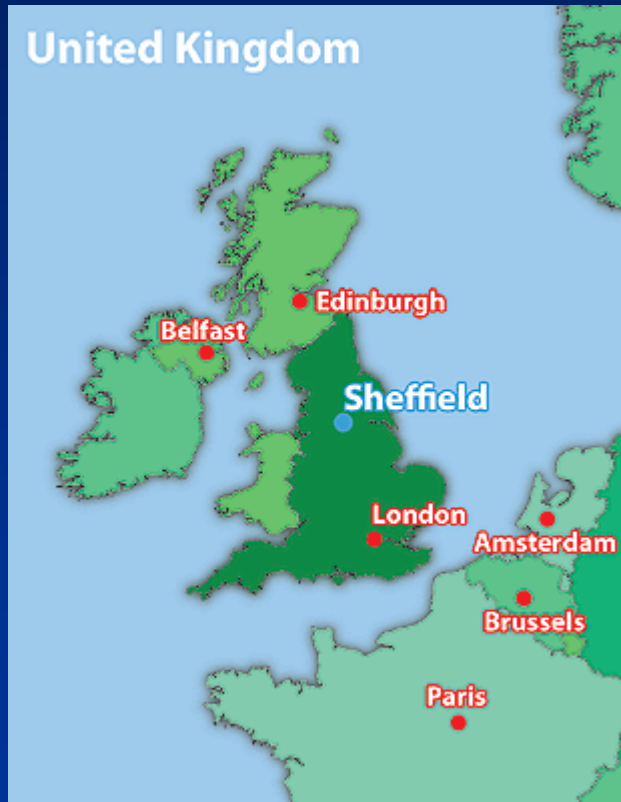


Fractures of the Distal Humerus





Reconstruction in the presence of bone loss at the elbow



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CAUSES OF BONE LOSS

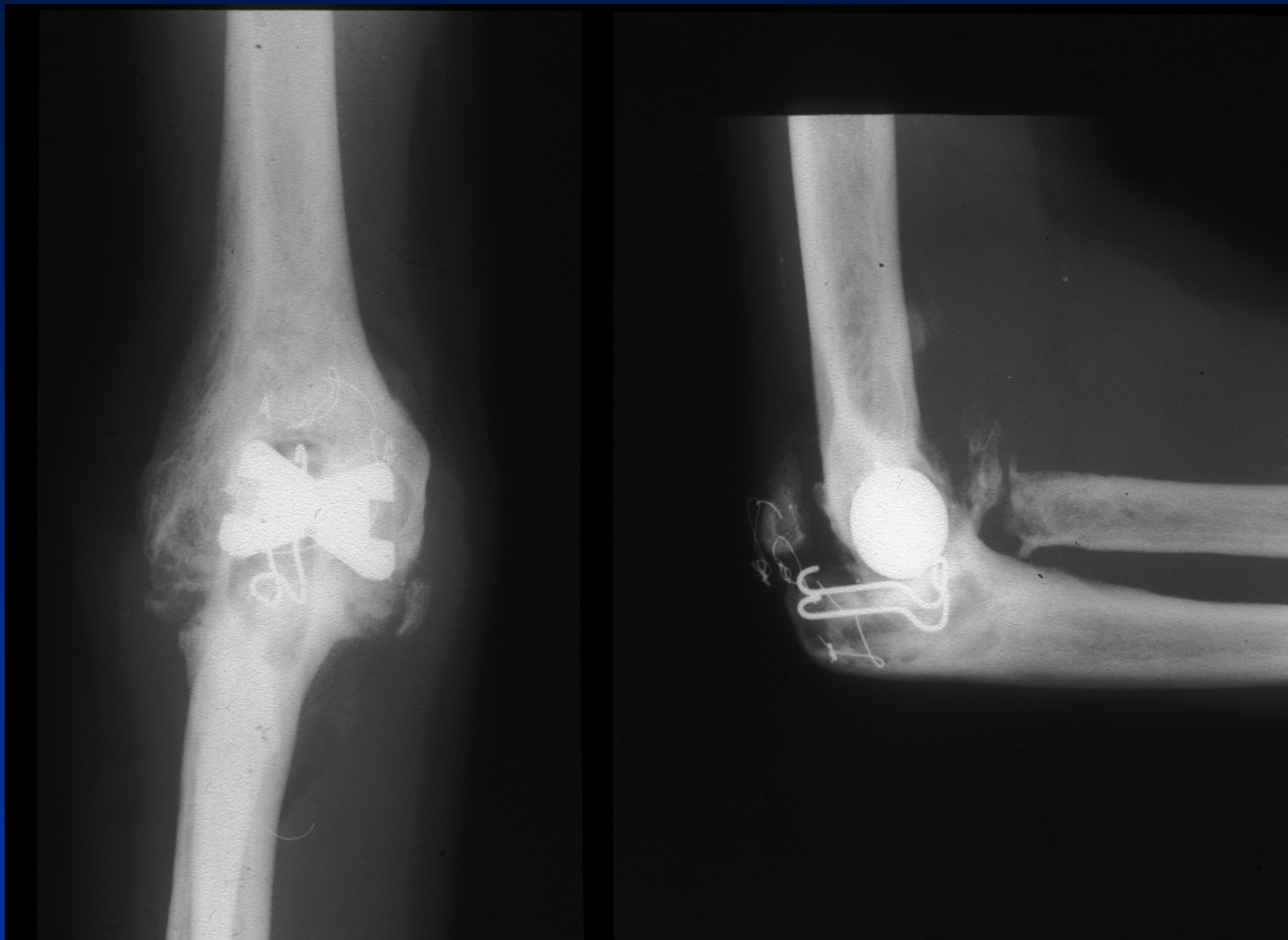
- Inflammatory disease
- Elbow fractures
- Failed total elbow arthroplasty

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



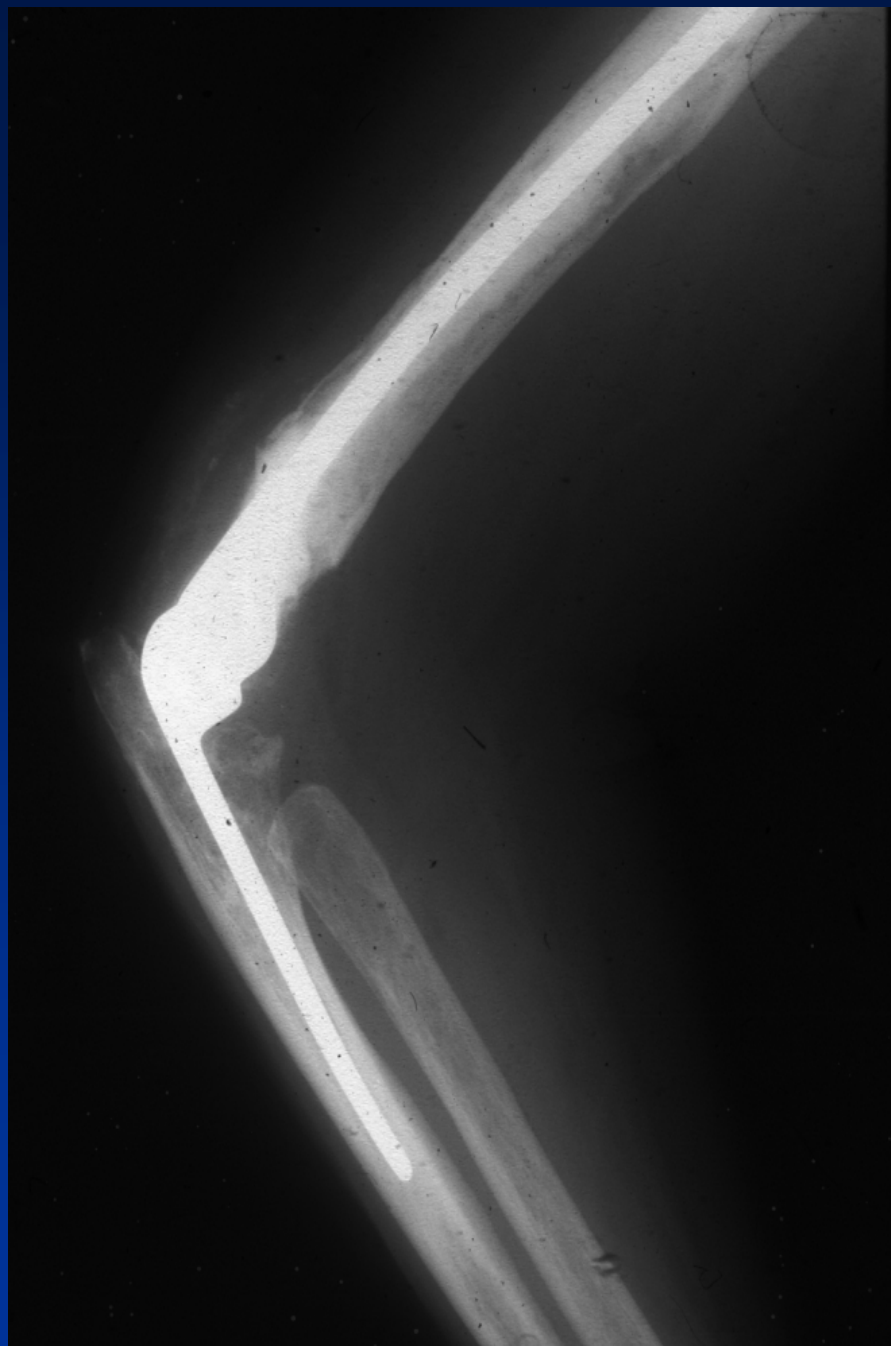


RECONSTRUCTION OPTIONS

Standard implant with impaction grafting







RECONSTRUCTION OPTIONS

Standard implant with autograft



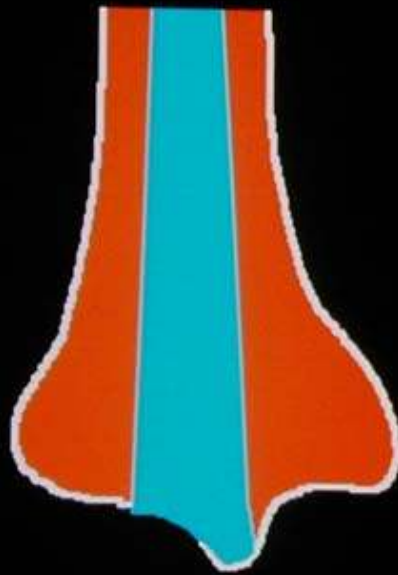




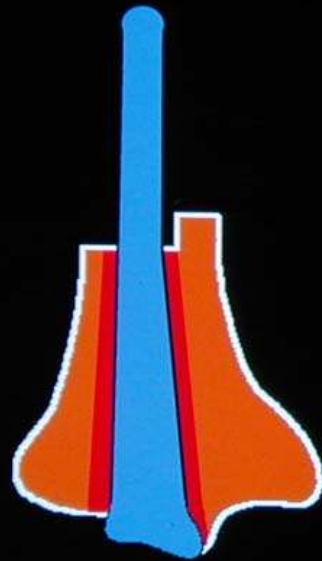


RECONSTRUCTION OPTIONS

Standard implant with allograft

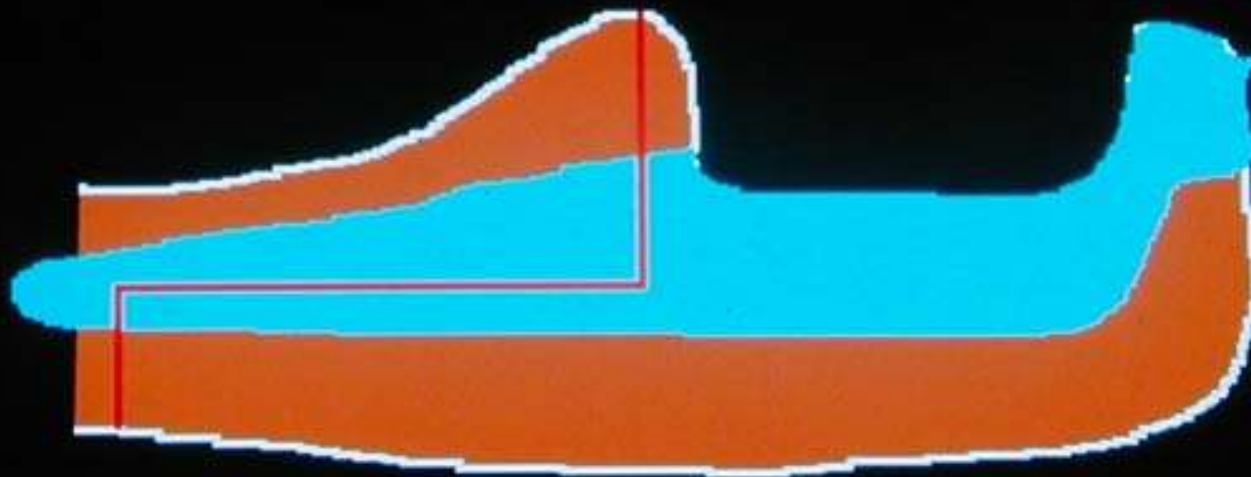


**Allograft initial
preparation**



**Endoprosthesis
cemented into
Allograft outside
body**

Allograft initial presentation



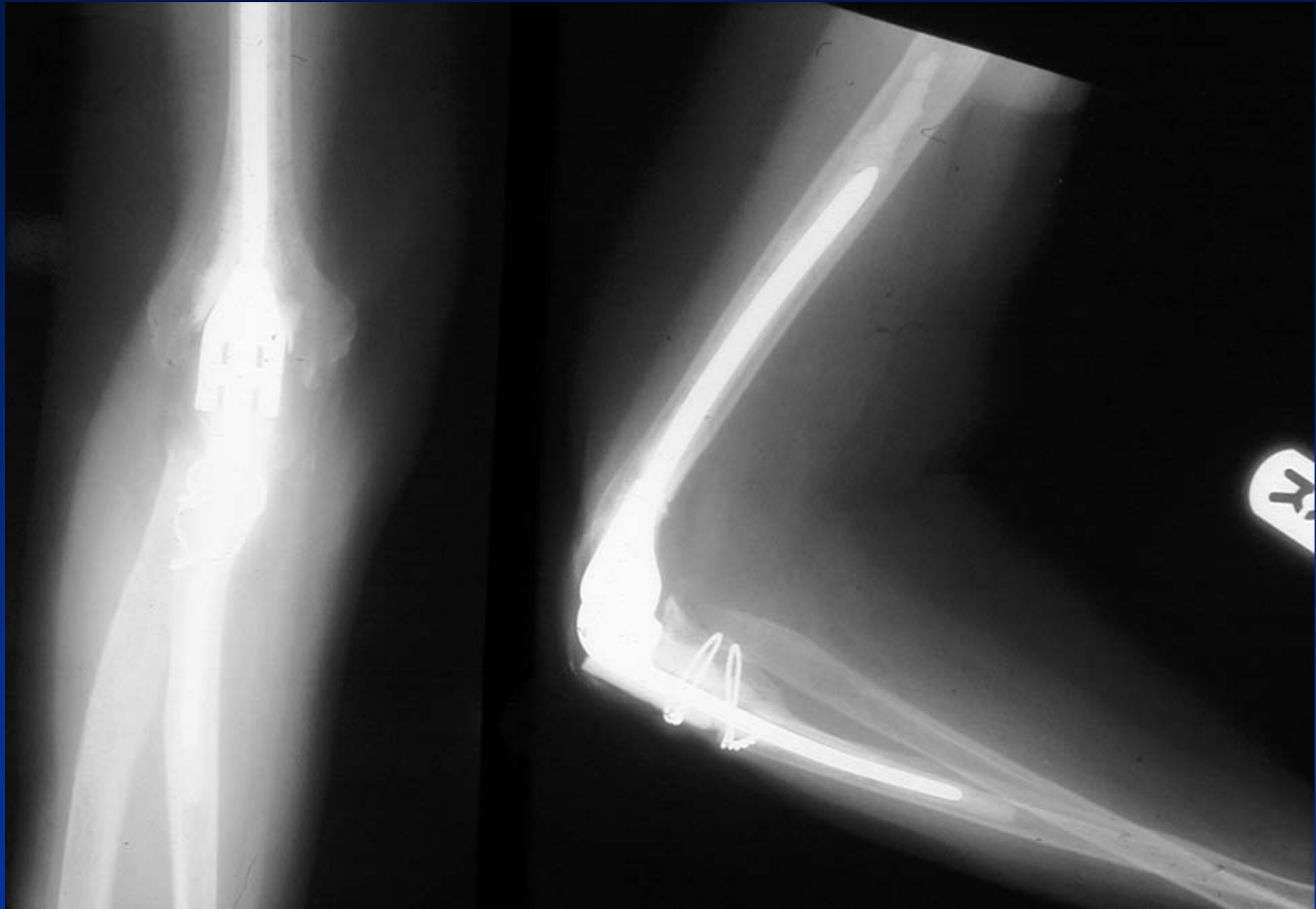
























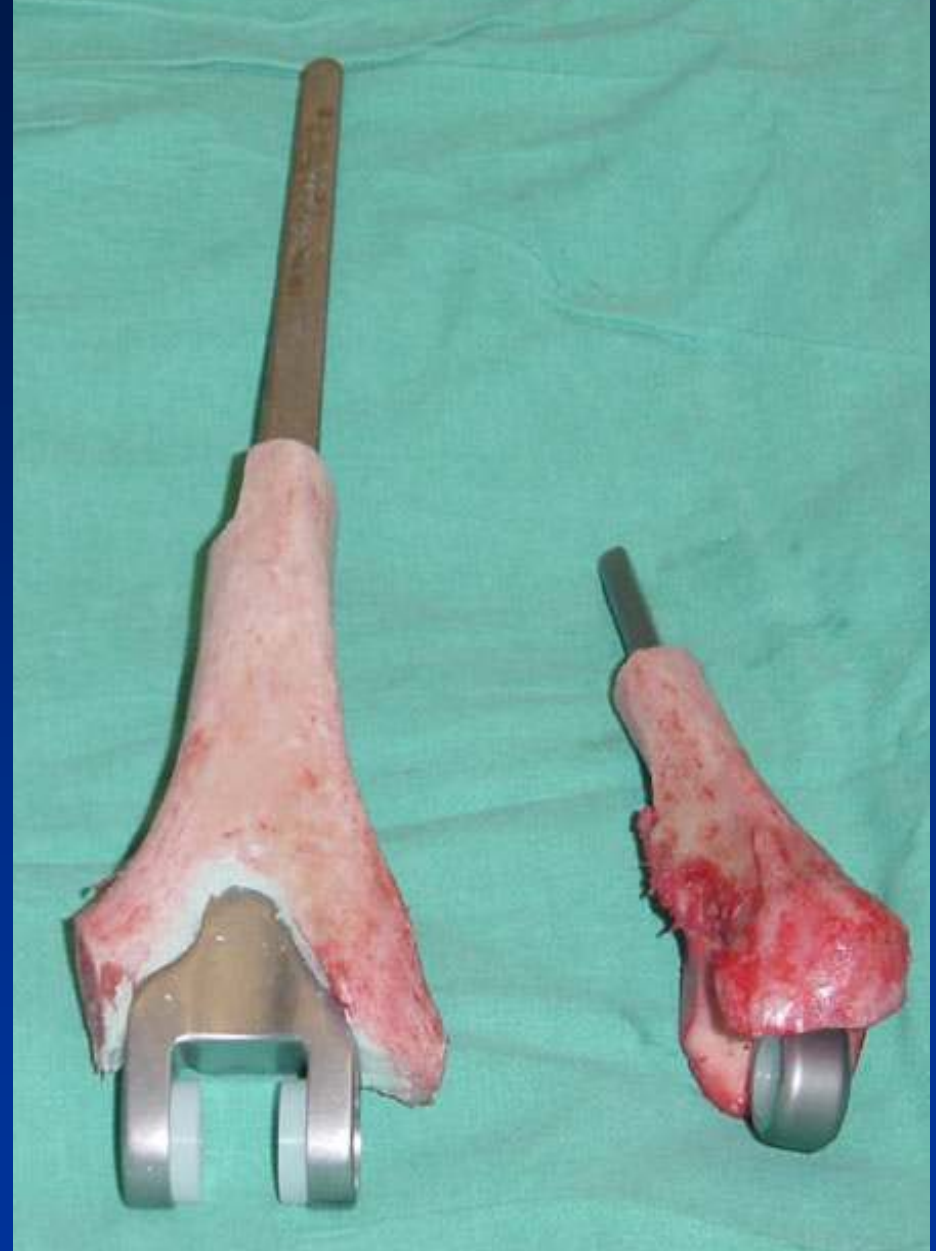


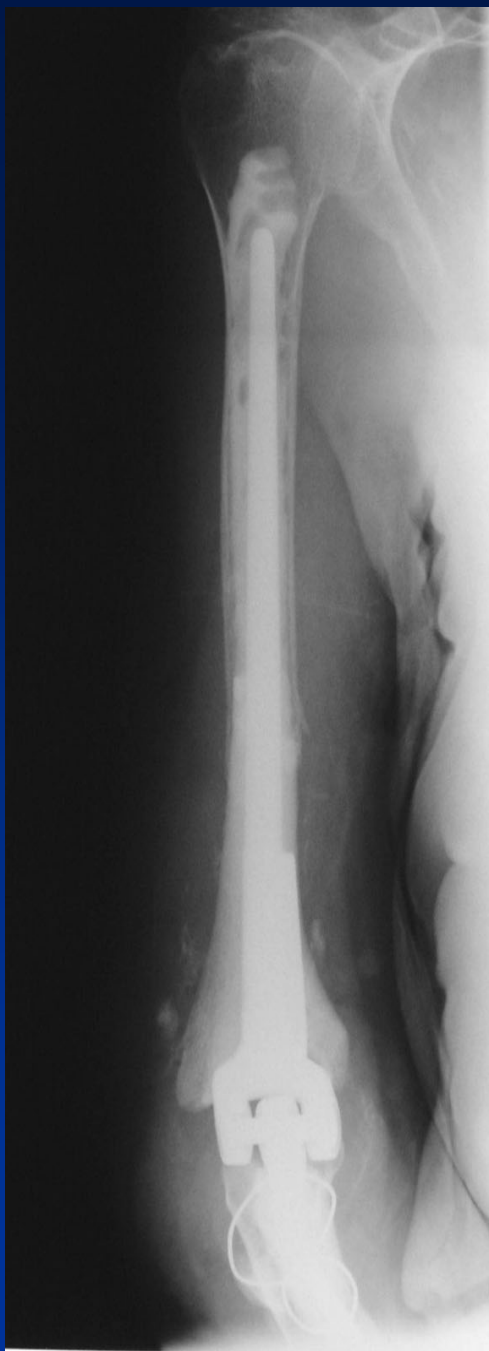








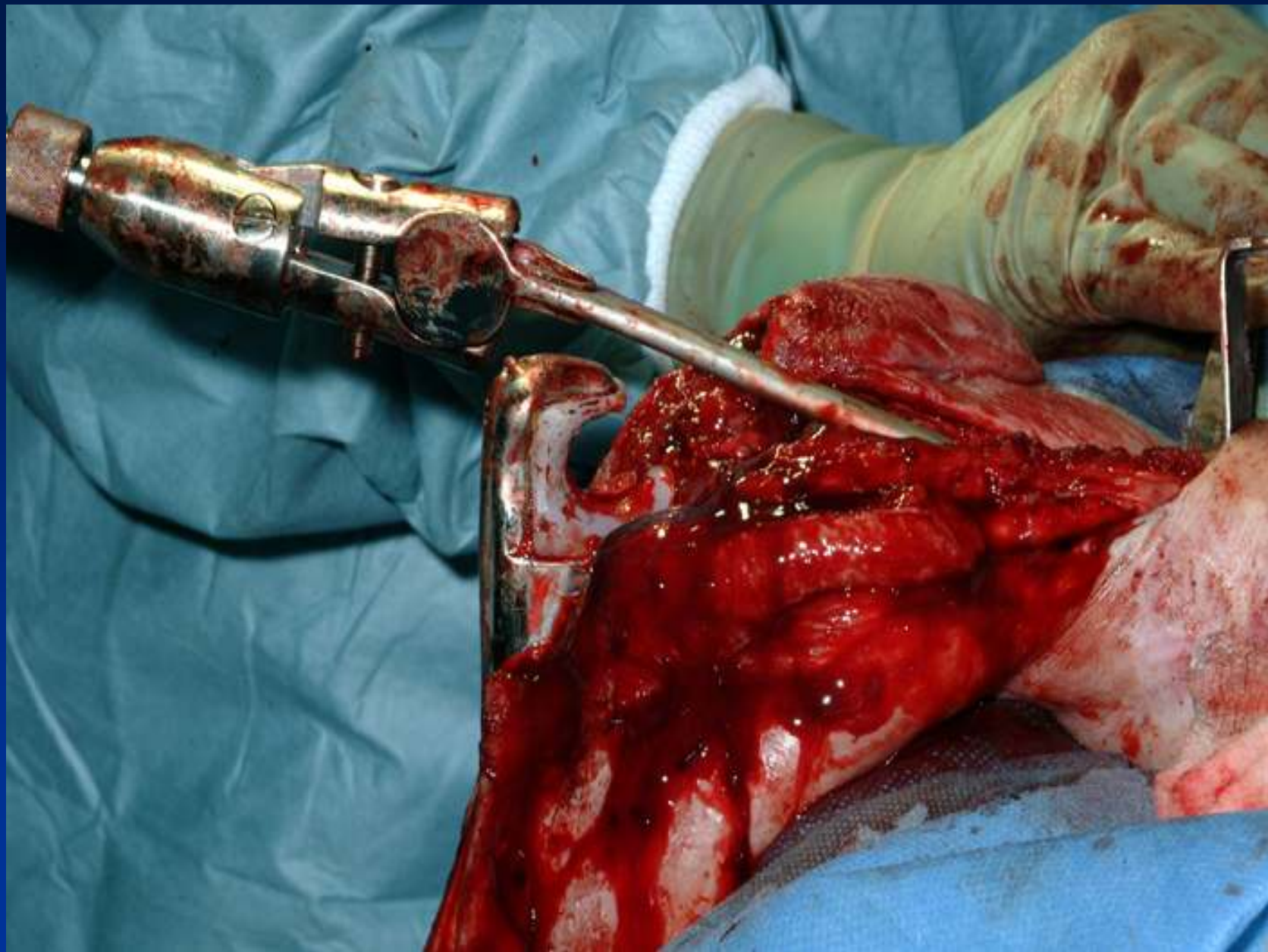




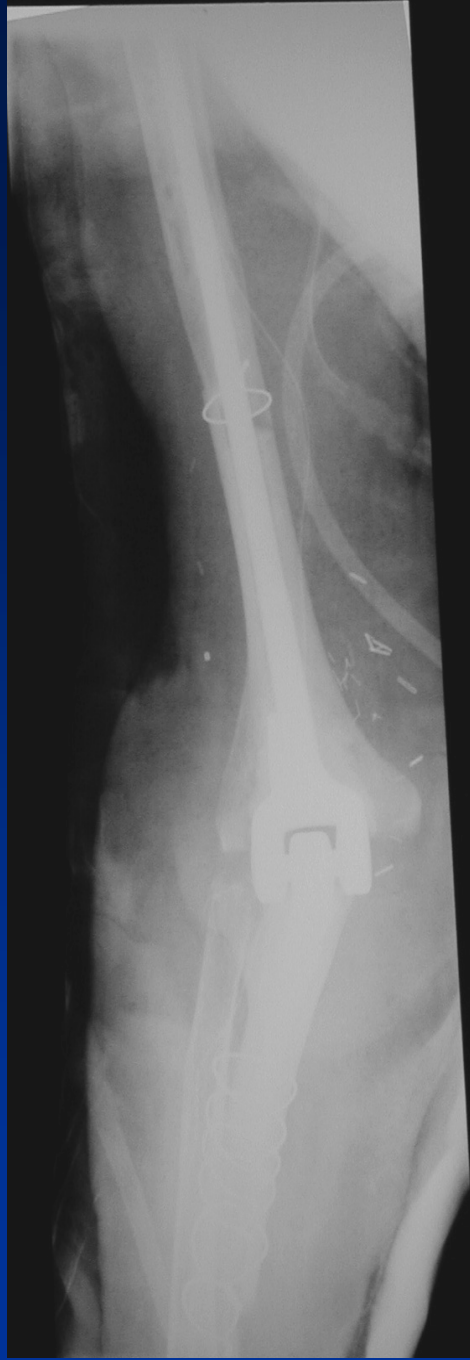
















TOTAL ELBOW ARTHROPLASTY FOR BONE LOSS

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