

Total Elbow Replacement In Destructive Elbow Arthropathy Of Unknown Pathology

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INTRODUCTION:

We report our experience and learning outcome from a case of total elbow replacement (TER) in destructive elbow arthropathy of unknown pathology after a two year follow up with good result. It was not a straight forward case of elbow arthropathy which presented initially as a diagnostic dilemma. Treatment with prosthesis aimed at reducing unbearable pain was complicated with peri-implant fracture and implant protrusion.

CASE

Patient ZBA was a 42 years old local malay lady with poor social background and had bronchial asthma. Her elbow deformity started insidiously without significant pain over four months. She presented late because it did not affect much of her daily activities. Only single joint is involved. On initial assessment, her left elbow has varus deformity measured at 16° , with a relatively good range of motion (40° - 126°). Plain radiographs showed a destructive picture with dislocation of left elbow. (Fig.1) Multiple investigations were negative for malignancy, tuberculosis, infection and rheumatoid arthritis. Patient was not keen for surgery and was treated with pain relieve medications. After a year, she started to complaint of unbearable pain over left elbow and opted for surgery. At the age of 45, her application for payment support by welfare was approved and cemented fixed hinge TER was done by senior author of this report.

Operation was complicated with peri-implant fracture at the proximal ulna and the distal humerus. Circlage was done at distal humerus fracture site with stainless steel cable. Fracture occurred during burring and drilling of bone to locate medullary canal which was obliterated by sclerotic bone, more severe over the ulna.

Postoperative Xray noted that humerus component of TER has perforated lateral cortex of distal humerus at the fracture site. (Fig. 2) It might have happened after the coupling of the prosthesis, when the humeral component is

impacted into medullary canal with impactor. (1) Revision was done two weeks postoperatively. The prosthesis was uncoupled and redrilling and recementing with same implant was done. (Fig.3) She recovered uneventfully. 2 months after the surgery, medical team has started her on treatment for rheumatoid arthritis due to new onset of multiple finger joints pain and deformities. Latest follow up after two years of operation found that left elbow ROM was 0° - 140° , minimal pain, slight varus instability, good muscle power and no signs of radiographic loosening.



FIG. 1



FIG. 2



FIG. 3

DISCUSSIONS AND CONCLUSION:

Total elbow replacement is indicated in painful elbow arthropathy. Rheumatoid arthritis is the main indication of prosthesis. (2) Severe destruction of elbow joint with marginal bone loss is salvagable with TER. Joint fusion should be the last choice for elbow arthropathy.

Difficulties that should be anticipated during TER in cases of chronic destruction of elbow joints are:

- sclerotic bone at metaphyseal region masking the entry into medullary canal.
- bone loss and altered anatomy complicate the bone cut due to loss of reference point.
- soft tissue contracture complicate component reduction and coupling.

Adequate release of soft tissue especially from the anterior proximal ulna and generous incision to approach an elbow in TER is very important due to following reasons:

- facilitate placement of cutting guide block and better referencing during bone cut and drilling.
- facilitate the final reduction and coupling of prosthesis.