The Functional outcomes of radial head arthroplasty after more than 10 years

Hiroyasu Ikekami, Takanori Shintaku, Shu Yoshizawa, Yoshiro Musha, Takao Kaneko
Department of Orthopaedic Surgery, Toho University, Tokyo, Japan E-mail: hiroyasu.ikegami@med.toho-u.ac.jp

OBJECTIVES

Treatment of unreconstructible comminuted fractures of the radial head remains controversial. Radial head arthroplasty is an alternative treatment for unreconstructible comminuted fractures with traumatic elbow instability.

The purpose of this study was to evaluate the results of the bipolar radial head prosthesis after more than ten years.

METHODS

Between 1998 to 2007, 21 patients were underwent bipolar head prosthesis. 18 patients (eight females and ten males; mean age, 47 years old (26-71) with an unreconstructible comminuted radial head fracture and associated elbow injuries were treated with a bipolar radial head prosthesis (Tornier®) could be over-ten-year follow-up. There were eight Morrey type-III and ten Morrey type-IV injuries.

The outcome was assessed using MEPS (the Mayo Elbow Performance Score) and JOA Score (the Japanese Orthopaedic Association Score) at a mean follow-up of thirteen years and six months (10 to 18 years). We investigated chronological change of X-rays.

RESULTS

MEPS
55 – 100 (avg. 88), Excellent 9, Good 7, Fair 2, Poor 0

JOA Score
75 – 100 (avg. 91), Excellent 10, Good 6, Fair 2, Poor 0

There is no infection, dislocation, or re-surgery.

Chronological change of X-rays

Six patients had radiographic changes of radiolucency around the neck and stem of the prosthesis that was not associated with pain.

no change in 12 / 18  radiolucent line in 6 / 18

radial head migration to the capitellum in 2 / 18

55 year-old male, Essex-Lopresiti fracture equivalent

Injury at 55 yrs, now and 68 yrs

DISCUSSION

We do ORIF for type 3/4 in general. This case was 50 years old man with elbow dislocation fracture with comminuted radial head fractures.

This table is reported cases about the Judet floating radial head prosthesis. Our results are almost the same as other reports, but follow-up period is the longest.

SUMMARY POINTS

1. Arthroplasty with a bipolar radial head prosthesis for unreconstructable radial head fractures associated with elbow joint instability had satisfactory results during midterm of follow-up.
2. However, high prevalence of radiographic changes suggesting osteolysis is noted and more than twenty-year follow-up is necessary to use this prosthesis.