Liverpool Radial

The Liverpool Radial Head Replacement was developed for use in the treatment of trauma, post traumatic deformity and elbow instability of the radio capitellar joint, by Professor S. P. Frostick MA DM FRCS. Professor of Orthopaedics and Head of Department, Department of Musculoskeletal Science, Royal Liverpool Hospital, Liverpool, UK.

Design Concept

The Liverpool RHR has been designed to restore the anatomy of the natural radio capitellar joint and has the following features:

- The articulating surface of the prosthesis is angled at 15 degrees to approximate the position of the natural radial head articulating surface.
- The stem is offset from the body of the prosthesis to approximate the angular curve of the radius.
- The stem has a porous coating to enhance early osseointegration.
- A range of 2 head diameters and 15 implant lengths to allow for all procedure types to be accommodated.

Ordering Information

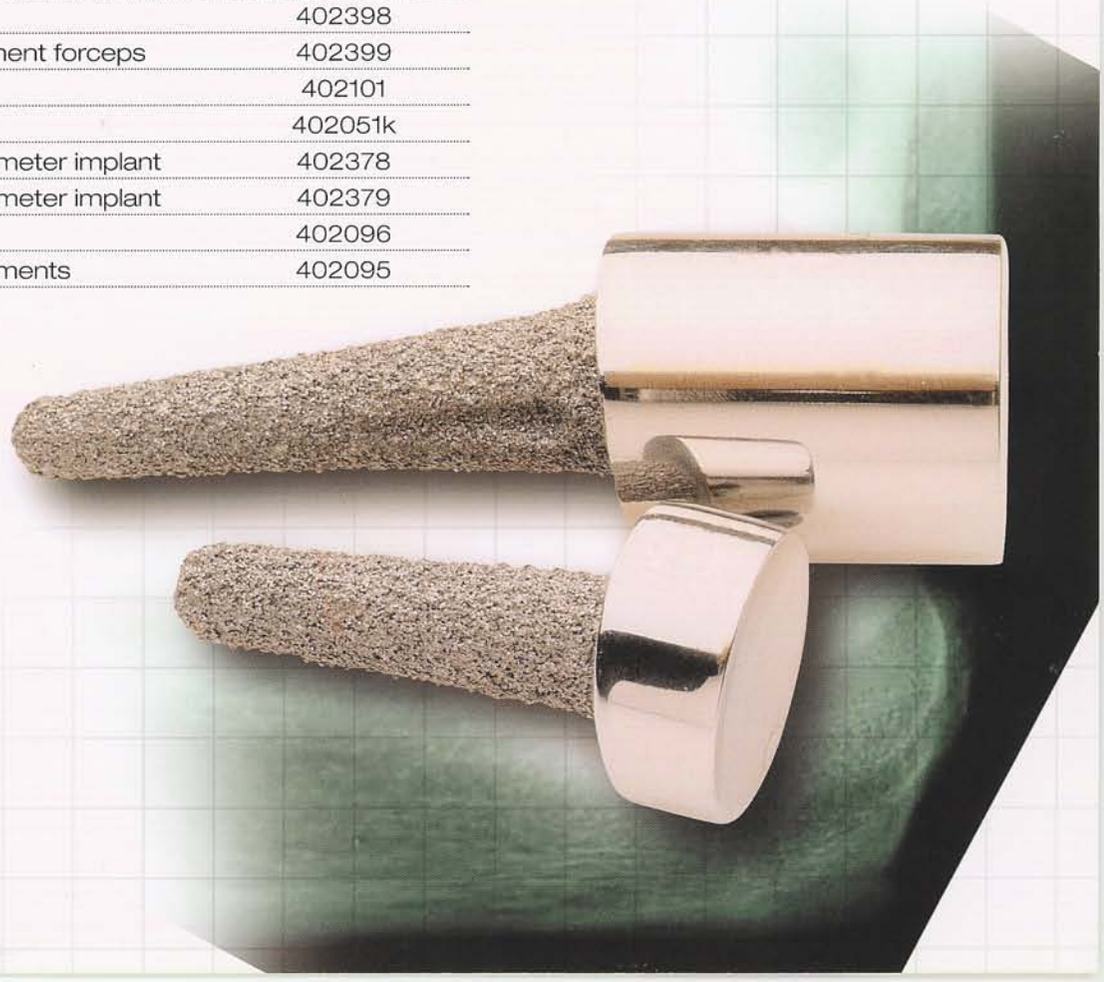
Description	Implant Catalogue Number
16mm Diameter 6mm Long	114420
16mm Diameter 8mm Long	114421
16mm Diameter 10mm Long	114422
16mm Diameter 12mm Long	114423
16mm Diameter 14mm Long	114424
16mm Diameter 16mm Long	114425
16mm Diameter 18mm Long	114426
18 mm Diameter 14 mm Long	114428
18 mm Diameter 16mm Long	114429
18 mm Diameter 18mm Long	114430
18 mm Diameter 20mm Long	114431
18 mm Diameter 22mm Long	114432
18 mm Diameter 24mm Long	114433
18 mm Diameter 26mm Long	114434
18 mm Diameter 28mm Long	114435

Head Replacement

Instruments

Description		Order Code
Trial implants 16mm diameter x	6mm long	402380
	8mm long	402381
	10mm long	402382
	12mm long	402383
	14mm long	402384
	16mm long	402385
	18mm long	402386
Trial implants 18mm diameter x	14mm long	402388
	16mm long	402389
	18mm long	402390
	20mm long	402391
	22mm long	402392
	24mm long	402393
	26mm long	402394
	28mm long	402395

Description	Order Code
Radial reamer 16mm diameter implant	402396
Radial reamer 18mm diameter implant	402397
Radial head cutting jig	402398
Trial implant insertion/alignment forceps	402399
Radial distractor hook	402101
Cutting jig nails x2	402051k
X-Ray templates 16mm diameter implant	402378
X-Ray templates 18mm diameter implant	402379
Instrument case	402096
Instrument case with instruments	402095



Operative Technique

By Professor Simon P. Frostick

1. Patient Positioning

The patient is positioned on the operating table supine, arm angled and palm facing downwards, with an arm board. It is important to ensure the arm is mobile and unencumbered by the drapes. A pneumatic tourniquet is applied.

2. Surgical Approach

A limited Kocher approach provides visualisation of the lateral joint adequate to resect and replace the radial head.

The skin incision begins 4cms proximal to the joint just posterior to the supracondylar bony ridge and distally over the anconeus for approximately 6cms distal to the tip of the olecranon.

The interval between the extensor carpi radialis longus and anconeus is then identified proximally and distally. The interval is developed to expose the capsule of the radiohumeral joint. The anconeus is reflected subperiostally from the proximal ulna. Sharp dissection frees the bony attachment of the triceps expansion of the anconeus at the lateral epicondyle. The annular ligament is divided between stay sutures.

3. Resection of the radial neck

If the radial head is fractured, the pieces are removed and reconstructed to ensure all bone is removed from the joint.

The radius is elevated using the radial elevator hook.

The radial cutting jig is placed over the neck of the radius and the radial head is resected leaving a flat surface, so the contact between the collar of the prosthesis and the bone is complete.

Liverpool

Radial Head Replacement

BIOMET MERCK

4. Preparation of the radial canal

The smaller radial reamer, is introduced into the radial canal, seated and twisted through at least 90 degrees to create the stem hole.

5. Trial Reduction

With the hand in full supination an appropriate size trial is inserted with the sign X on the lateral side, the joint is reduced, and the length of the radius plus implant is evaluated. If this is satisfactory then the diameter of the head is assessed and if it is decided that the larger diameter head is needed the trial is removed and the radial canal is enlarged with the large radial reamer. A press-fit of the stem in the medullary canal should be achieved. Excessive compression should be avoided. The forearm is carried through all range of movements so the relationship of the implant and the capitellum is observed.

6. Implantation of prosthesis

The prosthesis corresponding to the final trial, and orientated to the same position as the final trial, (using the X on the implant as a reference) is gently impacted into place using the impaction tool. The annular ligament should be re-approximated.

7. Closure

Routine closure in layers is performed. The use of a drain is at surgeons' discretion.

8. Postoperative regime

Mobilisation is started the next day avoiding valgus stress.

Disclaimer