

KAR™

CORAIL®
LONG STEM



UNIVERSAL

STABILITY

IN REVISION

Consistency and reliability in revision surgery

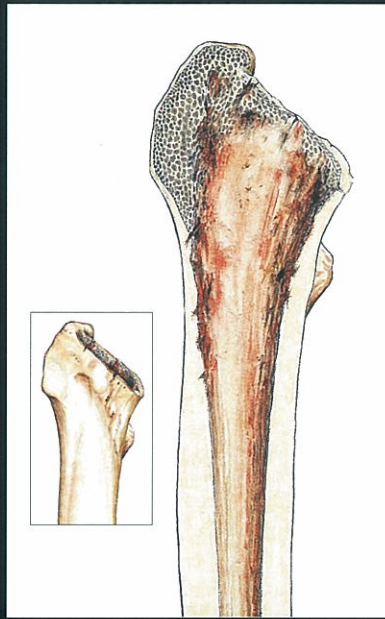
98% success at 7 years - a unique clinical experience

For all too many patients, the first operation to revise a hip implant will not be the last procedure they will undergo in order to correct their failed joint. The outcome of revision surgery is inevitably less predictable than primary implantation. Results achieved using the Kar™ prosthesis, however, have proved both consistent and reliable, with a survivorship rate of 98% at 7 years with the majority of patients (97%) expressing a high degree of satisfaction with their operation¹.

Kar™ uncemented revision system

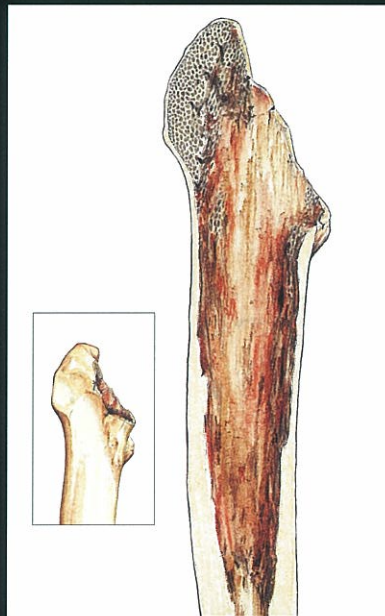
The long Kar™ stem has developed from the successful Corail® primary hip², specifically for revision surgery. Manufactured from forged titanium alloy², it shares the Corail® concept of stereostability, macro and micro surface detailing, HA coating, and includes both metal and ceramic head options.

The Kar™ System offers the surgeon a range of stems for mild to moderate situations (types 2 and 3A of Paprosky's classification) making it suitable for the majority of revision cases. Kar™ is also indicated for primary reconstruction of the cavernous femur. The surgical technique utilises the standard Corail® broaches and shares the same straightforward procedure for implantation.



Type 2

The calcar is non-supportive. Cancellous/cortical structural bone is absent – the metaphysis is not intact. The diaphysis has minimal damage.



Type 3A

The upper metaphysis is non-supportive. The diaphysis is not intact due to bone loss.

Kar™ revision stems address issues that are encountered in mild to moderate revision cases, i.e. within the range of type 2 and type 3A of the Paprosky's defect classification.





- Kar™ 12 = Corail® 12 + 30 mm = 180 mm
- Kar™ 14 = Corail® 14 + 40 mm = 200 mm
- Kar™ 16 = Corail® 16 + 40 mm = 210 mm
- Kar™ 18 = Corail® 18 + 40 mm = 220 mm
- Kar™ 20 = Corail® 20 + 50 mm = 240 mm

Restoring initial and long-term mechanical stability

Achieving stem stability in the proximal femur

Like the Corail® primary stem, the long Kar™ revision stem is designed to achieve secure initial and long-term mechanical stability in the femur.

It is shaped to resist both axial and torsional loosening forces.

In the frontal plane, the stem's pronounced lateral flare and medial curve provide axial and rotational stability.

The lateral flare is fully supported by the infero-lateral aspect of the greater trochanter.

In the lateral plane a progressive anterior to posterior tulip flare fills the metaphysis and, in combination with horizontal grooves around the circumference of the stem, further reinforces axial stability.

The well-defined rectangular section and vertical grooves confer rotational stability.

The stem's proximal collar prevents axial migration. To compensate for weakness or absence of bone in the calcar region, the use of a structural horseshoe allograft is recommended.

The calcar graft is compressed and stabilised by the stem's collar and is loaded by its medial curve.

Proximal load transfer

The Kar™ revision stem has been designed to transfer maximum load to the available bone in the proximal femur. When the metaphysis is not intact, stability

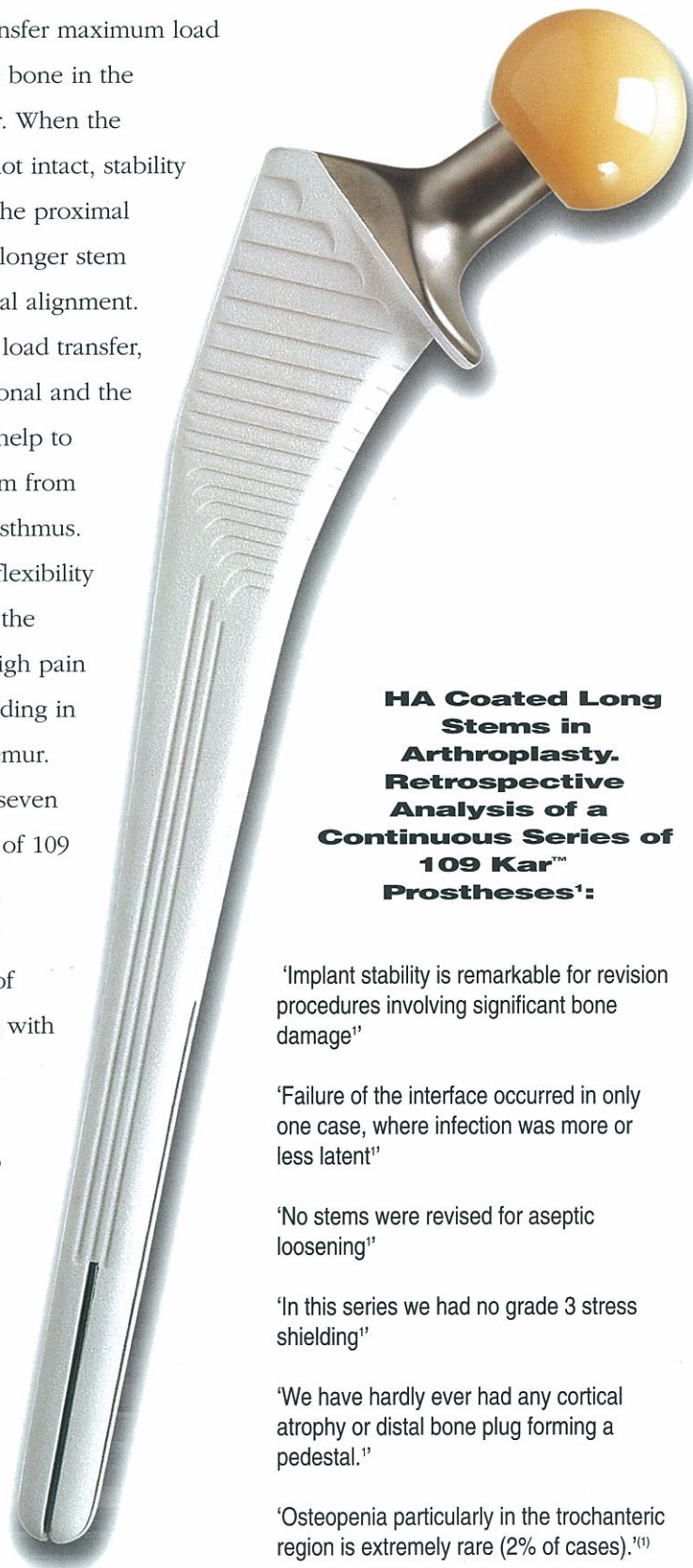
is achieved in the proximal diaphysis. The longer stem aids correct axial alignment.

To avoid distal load transfer, slots in the coronal and the sagittal planes help to prevent the stem from locking in the isthmus.

The increased flexibility also minimises the potential for thigh pain and stress shielding in the proximal femur.

In his three to seven year follow-up of 109

Kar™ revisions¹, Vidalain found minimal signs of stress shielding with no radiological signs of subsidence. No stems were revised for aseptic loosening.



HA Coated Long Stems in Arthroplasty. Retrospective Analysis of a Continuous Series of 109 Kar™ Prostheses¹:

'Implant stability is remarkable for revision procedures involving significant bone damage'

'Failure of the interface occurred in only one case, where infection was more or less latent'

'No stems were revised for aseptic loosening'

'In this series we had no grade 3 stress shielding'

'We have hardly ever had any cortical atrophy or distal bone plug forming a pedestal.'

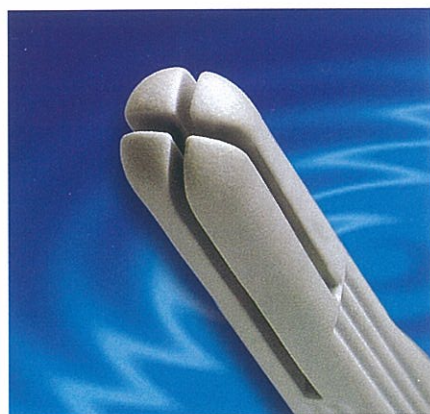
'Osteopenia particularly in the trochanteric region is extremely rare (2% of cases).'⁽¹⁾



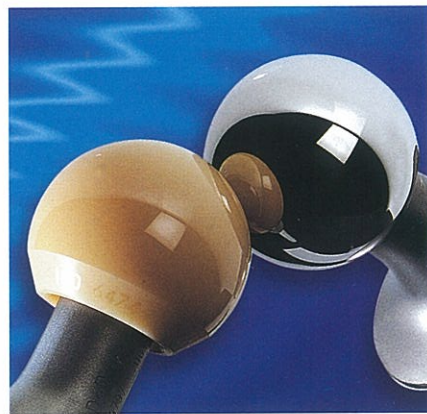
In the frontal plane, the stem's pronounced lateral flare and medial curve provide axial stability and proximal load transfer.



Illustration of the progressive anterior to posterior tulip flare.



The long flexion slot in the coronal plane and the shorter slot in the sagittal plane minimise distal thigh pain and the effects of stress shielding in the proximal femur.



The Kar™ femoral stem features a standard 12/14 Morse taper which is compatible with 22.225 mm, 28 mm and 32 mm femoral heads, available both in cobalt chrome and alumina ceramic.