Experience of The Lubinus SPII Femoral Stem in a Single UK Centre - Excellent Survivorship, Low Dislocation and Negligible Periprosthetic Fracture Rates up to 15 years Following Primary THA

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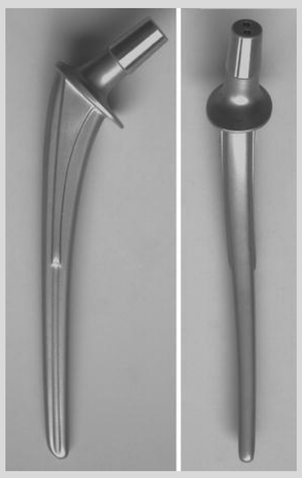
Background

The Lubinus SPII is an anatomical femoral stem with high survivorship levels notably described in the Swedish Arthroplasty Register. As the clinical and economic burden of revision total hip arthroplasty (THA) and periprosthetic fractures (PPF) continues to increase, it has been suggested that use of anatomical femoral stems may help improve implant survival.

Aim

The primary aim of this study was to determine the long term survivorship and PPF rate of the Lubinus SPII in a single UK centre.



The Stem

The Lubinus is cobalt–chromium–molybdenum alloy (*CoCrMo*) S-shaped, collared femoral stem with an anatomic shape. It has been in use in NHS Fife for over 20 years.

Methods & Results

- Between 2008 and 2012, 1000 consecutive THAs were performed using a cemented Lubinus SPII femoral stem in NHS Fife.
- Patient demographics, operative details and clinical outcomes were collected prospectively in an arthroplasty database.
- Patient records and national radiographic archives were reviewed finally at a mean of 12.3 years (SD 1.3) following surgery to identify occurrence of subsequent revision surgery, dislocation or periprosthetic fracture.

Demographics & Hip Scores

- Mean patient age at surgery was 68.8 years (SD 9.9, 24-93 years). There were 634 women (63%).
- Osteoarthritis was the main operative indication in 94.6% of patients and mean BMI at operation was 30 kg/m2.
- 67% of patients were alive at mean 12.2 years follow up.
- Mean Harris Hip Score was 90.5 at 1-year follow up and 89.1 at 5 year follow up.

Dislocations

A dislocation rate of 1.6% was found at 12.2 year follow up (16/ 1000).

Periprosthetic Fractures

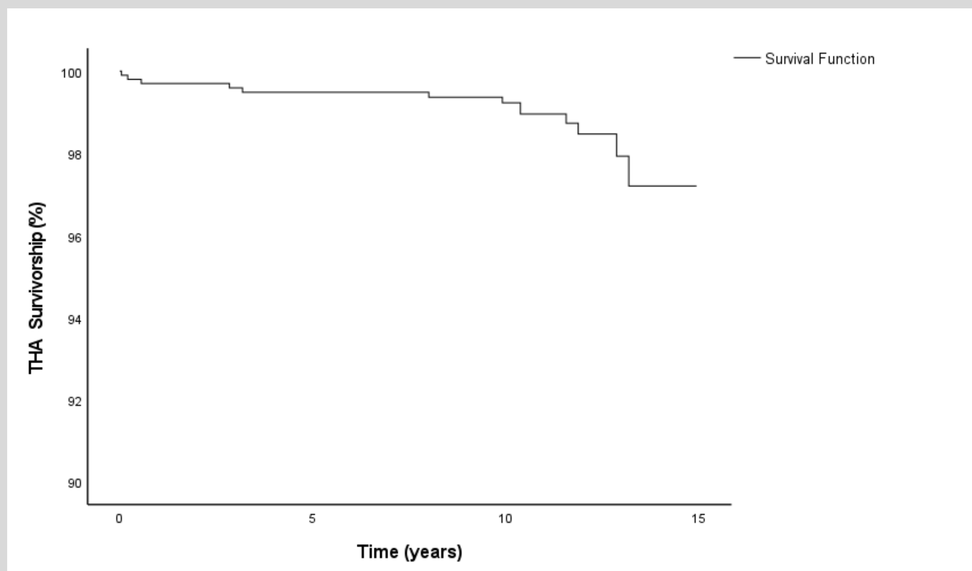
Four PPFs occurred by 12.2 year follow up, with two Vancouver type C fractures requiring ORIF and two Vancouver A fractures being managed conservatively.

Revisions

There were 13 revisions in total at 12.2 year mean follow up (4 for recurrent dislocation, 3 for infection, 6 for acetabular loosening).

THA Survivorship

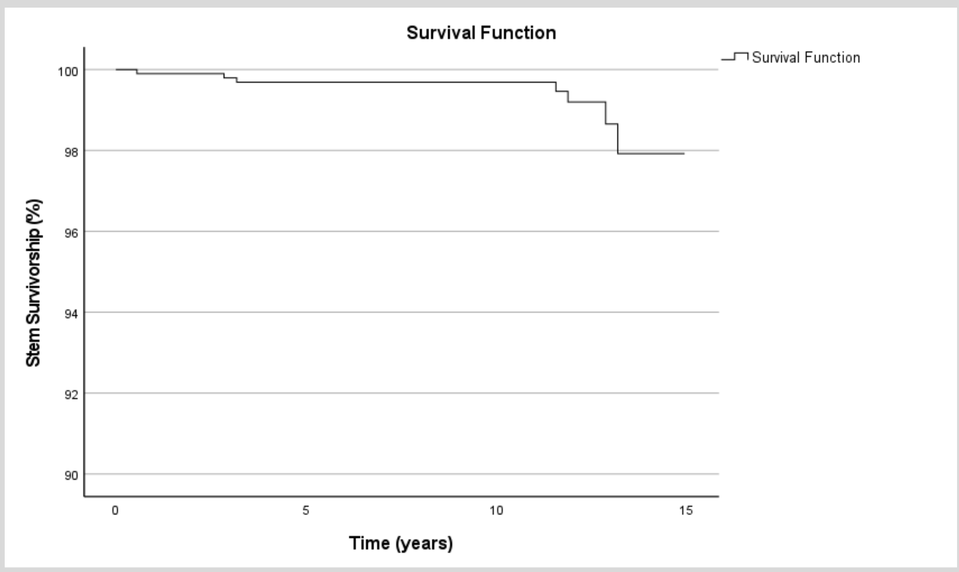
Analysis of all cause THA failure demonstrated a survivorship of 99.2% (99.0%-99.3%) at 10 years and 97.2% (98.1%–98.3%) at 15 years. Patient age, gender, BMI & social deprivation did not appear to influence risk of revision (p>0.05).



Number at risk			
Time (years)	0	5	10
Remaining THAs	1000	900	734
Patients Alive	977	885	720

Stem Survivorship

Stem survivorship at 10 years was 99.6% (95 % confidence interval [CI], 99.5%-99.7%) and at 15 years was 97.9 % (95% CI 97.8% – 98.0 %). The 15-year stem survival for aseptic loosening was 100% with no stems seen to have significant signs of lysis (lucent line >2mm).



Number at risk			
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Remaining Stems	1000	901	734
Patients Alive	977	885	720

Conclusions

The Lubinus SPII stem demonstrated excellent survivorship, low dislocation rates and negligible PPF rates up to 15 years following primary THA.
Use of anatomical stems such as the Lubinus SPII would appear to be a wise clinical and economic investment for patients and healthcare systems alike.