Long Term Follow-Up of Cementless THR for the Treatment of Osteonecrosis: Have We Improved Compared to Cemented THR?

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INTRODUCTION:
The intermediate term results of cemented THR for osteonecrosis of the hip are reported to be inferior to the results for other diagnoses. The authors evaluated the results of cementless THR performed for osteonecrosis (consecutive non-selected series) at minimum 10-year follow-up and compared them to the author’s previously performed cemented consecutive non-selected series for the same diagnosis reported at comparable follow-up. The authors hypothesized that the results of cementless total hip replacement for the diagnosis of osteonecrosis in this prospectively followed cohort would be superior to the authors’ historical control of a cemented total hip cohort performed in patients with the same diagnosis.

METHODS:
80 consecutive cementless THRs were performed in 66 patients with osteonecrosis of the hip and were followed for a minimum of 10 years. The average age at the time of surgery was 54 years. The cohort was compared to a consecutive series cohort of 48 cemented THRs performed in 38 patients for the same diagnosis and that had been followed by the same authors at a similar minimum 10-year interval follow-up. In addition to obtaining Harris Hip scores, hips were evaluated for revision of the components related to loosening and wear, and for radiographic loosening.

RESULTS:
At minimum 10-year follow-up, the comparative prevalence for the cementless versus the cemented series for femoral revision for loosening, acetabular revision for loosening, radiographic femoral loosening and radiographic acetabular loosening were 1.2% vs 6.5% (p = 0.01), 0% vs 13% (p = 0.0001), 1.2% vs 13% (p = 0.0001) and 0% vs 15.2% (p = 0.0001), respectively. In the cementless group 7.5% of hips required a liner exchange for wear (most hips had non-contemporary polyethylene). The cementless cohort results are also comparable to the results using cementless fixation in patients with other diagnoses (Fig 1 & 2).

DISCUSSION:
This historical control study demonstrates a marked improvement with cementless THR fixation compared to cemented fixation in patients with osteonecrosis of the femoral head. Bearing surface wear was the major cause of failure. Addressing this problem should provide even more durable results in this active population.

SIGNIFICANCE:
This prospective series with historical control demonstrates a marked improvement with cementless THR fixation compared to cemented fixation in patients with osteonecrosis of the femoral head. Bearing surface wear was the major cause of failure.

REFERENCES: