

Original Article

30-years of experience with the cementless implanted Alloclassic total hip arthroplasty system—An ultra-long-term follow-up



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ABSTRACT

Objective: The aim of this study was to evaluate our long-term results with the Zweymüller hochgezogen and SL total hip arthroplasty system. This is the first study to provide a 30-year follow-up.

Methods: We reviewed 186 Alloclassic stem systems (Zweymüller hochgezogen (112) and SL (74), implanted in 179 patients from 1986 to 1987.

Two different types of cementless acetabular components were used.

143 patients had died over the last 30 years, so thirty out of 36 patients being still alive, with a mean follow-up of 29,48 years (SD 0,51), were contacted by telephone and evaluated radiologically and clinically. Our loss-to-follow up was 16,7%. The mean age at follow-up was 83,57 years (72,4–95,2; SD 6,77).

Results: If the endpoint is defined as the removal of the stem for aseptic loosening (3 cases), the overall survival rate is 98,38%. If the endpoint is revision for any reason (27 cases), the survival rate is 85,48%. Eleven patients needed an exchange of head and liner. The mean time from implantation until change of head and liner was 21,44 years (SD 5,92).

Most of the radiolucent lines and osteolytic zones were found in the proximal Gruen-zones 1 and 7 (69,7 and 21,2%).

Conclusion: After 30 years of monitoring we can state that the evaluated system is very reliable in primary and secondary THA.

1. Background

Numerous studies deal with short and midterm results of the cementless implanted Alloclassic Zweymüller total hip arthroplasty stem system, which was implanted for the first time on the 5th of October in 1979, and the direct successor, the SL-stem.

Some studies describe long-term results up to 20 years.

Since the first publication of the results of our cohort,¹ 14 years have passed and we have been able to obtain reliable long-term results.

Up to now, there is no publication dealing with results after 30 years and the events causing a revision of the prosthesis during this long timelapse. The aim was to evaluate the results after 30 years.

2. Patients and methods

From 1986 on, our institution has been implanting the Alloclassic Zweymüller and the SL-total hip arthroplasty system.

All of the 186 Alloclassic stem systems (Zweymüller hochgezogen (112) and SL (74); AlloPro/Sulzer Medica, Winterthur, Switzerland and Centerpulse, Winterthur, Switzerland), implanted in 179 patients from 1986 to 1987, were included in this study.

The cups used were cementless too and consisted of 181 (97,3%) Alloclassic CSF (AlloPro/Sulzer Medica, Winterthur, Switzerland and Centerpulse, Winterthur, Switzerland) and 5 (2,7%) Endler (AlloPro/Sulzer Medica, Winterthur, Switzerland).

The group consisted of 102 women and 77 men.

The mean age at surgery was 62,76 years (33,2–83,1; standard-deviation 9,34).

The indication (Table 1) for total hip arthroplasty was primary osteoarthritis in 139 cases (74,73%) and secondary osteoarthritis in 32 cases (17,2%. Others were revision surgeries in 15 cases (8,07%).

Over the last 30 years, 143 patients had died. Out of 36 patients being still alive, 30 could be contacted by telephone. Due to bad general medical condition and distant relocation in many cases, we did not

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Table 1
Indications for implantation of the cementless Alloclassic THA-system.

Indication	Absolute number	Percentage
Primary osteoarthritis	139	74,73%
Necrosis of the femoral head	19	10,21%
Dysplasia	8	4,30%
Trauma	4	2,15%
Perthes	1	0,54%
St.p. Girdlestone procedure	5	2,69%
St.p. loosening of stem	10	5,38%

expect to get the chance to clinically evaluate a majority of the shrinking cohort. Those patients and their relevants were interviewed by telephone if the prostheses were still in situ and if there occurred any problems over the past years, concerning the prostheses. In nine cases we were able to perform a full clinical and radiological examination.

Our total loss-to-follow up was 16,7%. The mean age at follow-up was 83,57 years (72,4–95,2; SD 6,77).

We assessed the survival rate of the implant, the adverse events caused by the implant over the last 30 years, the occurrence of radiolucent lines and osteolytic zones in the recent weight bearing x-rays according to the classification of Gruen on the a-p view and the patients' satisfaction with the result after 30 years.

Survival curves were calculated for all implanted stems for aseptic loosening as well as revision for any reason.

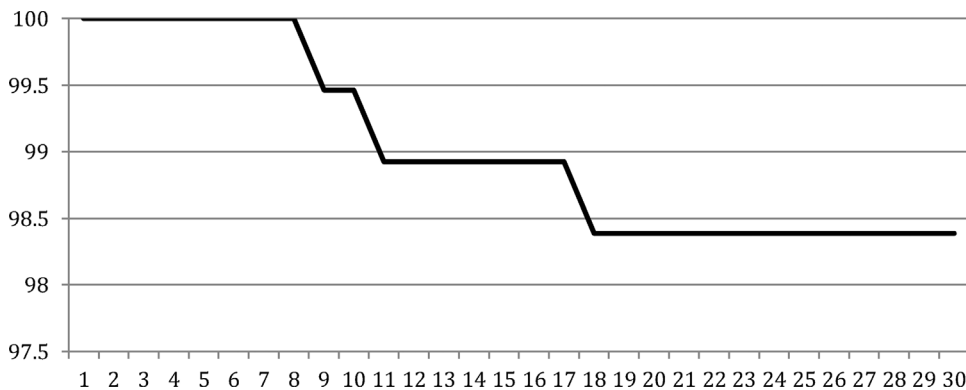


Fig. 1. Survival curve for the endpoint, aseptic loosening of the stem'.

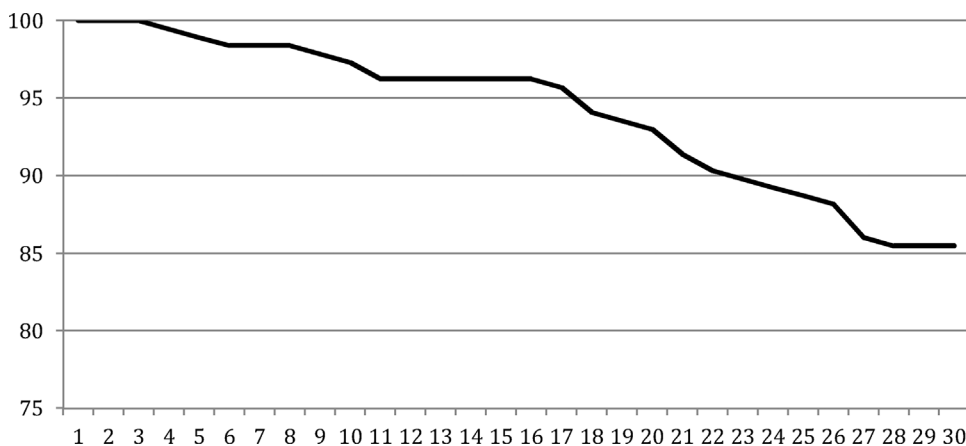


Fig. 2. Survival curve for the endpoint, revision for any reason'.

3. Results

3.1. Survival rate

If the endpoint is the removal of the stem for aseptic loosening (3 cases), the overall survival rate is 98,38% (Fig. 1). If the endpoint is revision for any reason (27 cases), the survival rate is 85,48% (Fig. 2). Eleven patients needed an exchange of head and liner, one of them was operated twice on one hip. The mean time from implantation until change of head and liner was 21,44 years (SD 5,92). Those patients, who died over the last 30 years, have lived with the arthroplasty system for an average of 18,38 years (2,02–30,34; SD 6,9).

3.2. Radiological

Most of the radiolucent lines and osteolytic zones (Fig. 3) were found in the proximal Gruen-zones 1 and 7 (69,7 and 21,2%). None of the implanted stems was considered to be at risk.

3.3. Clinical

Overall satisfaction of our patients with the implanted Alloclassic stem system was very good (Figs. 4 and 5). None of the 30 patients described pain. Only one patient was not satisfied due to leg length inequality caused by high congenital hip dysplasia of the contralateral side.

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