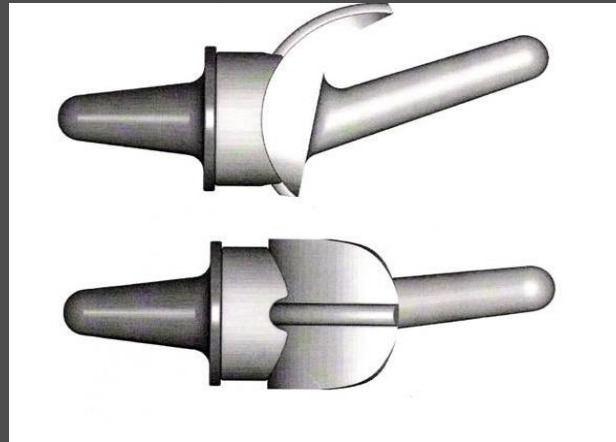


Long-term results of the Rotoglide™ MTP-1 prosthesis.

A prospective series with 15 years survival analysis



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Purpose of the study:

The evaluate the long-term clinico-radiographic behavior of a three-component uncemented prosthesis for primary arthrosis of the MTP-1 joint.





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The Rotoglide™ total replacement of the first metatarso-phalangeal joint. A prospective series with 7–15 years clinico-radiological follow-up with survival analysis



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ABSTRACT

Background: The Rotoglide total replacement of the MTP-1 joint. 15 years survival analysis. **The purpose** of this prospective study was to evaluate the long-term performance clinico-radiographically of an uncemented three-component total replacement for the first metatarso-phalangeal joint (MTP-1) used for hallux rigidus (primary osteoarthritis grades 3 and 4). The follow-up was median 11.5 years (7–15). **Methods:** The AOFAS forefoot score was used preoperatively and at follow-up. Radiographs were taken weight-bearing in the AP-projection and in tip-toe standing in the lateral view. Arthrosis in the sesamoid junction, prosthetic loosening, subsidence (of prosthesis as well as sesamoids), and dorsiflexion were measured, recorded and subjected to multiple variance analysis. Survival analysis was performed for 15 years.

Material: Ninety implants in 80 patients (53 women and 27 men); median age 58 (41–76) were evaluated. **Results:** Six patients representing seven prostheses in situ had died from unrelated reason. The median preoperative AOFAS increased significantly from 40 to 95. The median gain was 45. Four replacements (4.4%) were extracted for other reasons than loosening. No aseptic loosening were recorded. The survival rate at 15 years was 91.5% (83–100). Multiple variance analysis showed that arthrosis in the metatarso-sesamoid junction correlated with reduced AOFAS score.

Conclusion: The prosthesis has stood the test of time; the results justify its further use.

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Material :

Female/ Male	Age index surgery	Prostheses	F.U. years	Implants	Death Extracted		
53/27	58(41-76)		90		11.5(7-15)	4.4%	6.6%

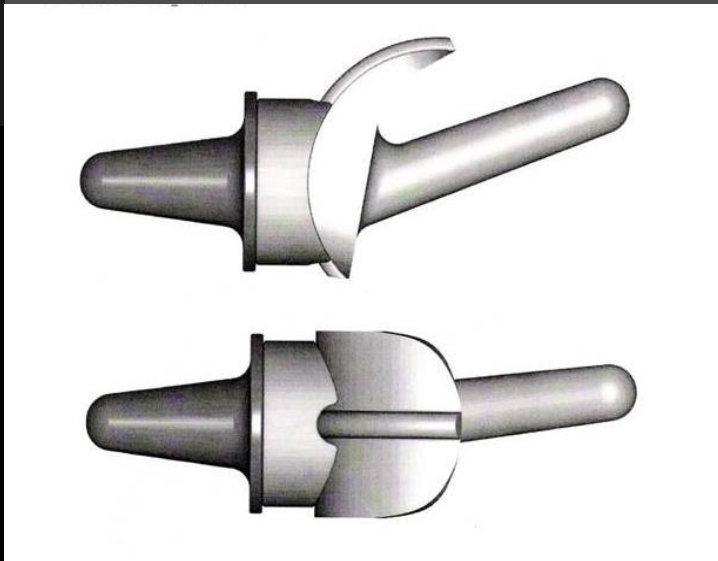
The prosthesis - 3- component

Core metal : Cr-Co-Mo

Surface : Titanium beads and 0.15 my CaP

Meniscus : Ultra highly crossed Polyethylene with a peg going into a hollow phalangeal component. Full rotation against phalangeal shield. Free gliding against metatarsal shield.

Metal components : uncemented intramedullary fixation



Indication:

Only grade 3 and 4 primary arthrosis(Coughlin)

Contraindication:

R.A., Psoriasis Arthritis.

previous surgery of MTP-1 joint,

Metatarsus primus varus,

Severe hallux valgus ($> 20^{\circ}$)



Clinical evaluation: AOFAS score (preop. and at follow-ups)

Radiographic evaluation:

AP-view standing

Lateral view tip-toe standing with max. Heel raise.

Loosening > 2mm circumferential radiolucency

Cysts: measured in cm^2

Subluxation of joint and sesamoids

Sesamoid arthrosis

Dorsiflexion



Example of prosthetic subluxation and sesamoid subluxation

Standing



Sesamoid subluxation demonstrated by Holly view



Clinical results (Wilcoxon rank sum, Median and range)

Preop.	Follow-up	Gain
AOFAS	AOFAS	
40 (22-65)	95 (55-100)	45 (23-65)

P > 2.2 · 10⁻¹⁶

VAS (pain) at F.U. Median **0** (0-6). 74% scored zero

87.5% would recommend the procedure

84% would have the procedure again



Reasons for extraction of 4 prostheses

1. One early deep infection
2. One late infection (after 12 years)
3. One prosthetic dislocation
4. One "metallic bunion" (Too large metatarsal comp.)



Radiographic results:

Subluxation of components (> 2 mm)	13
Subluxation of sesamoids (> 25%)	6
Metatarso-sesamoid arthrosis	22
Dorsiflexion MTP-1	median 38 (9-74)
Hallux angle	median 11 (1-34)
Intermetatarsal angle	median 8 (3-21)
Radiolucency > 2 mm (anywhere)	1
Prosthetic loosening	0
Periprosthetic cysts (metatarsus)	2, size 0.51 cm ²
Periprosthetic cysts (phalangeal)	13, size 0.1 cm ²
Heel raise	median 11.3 cm (6.3-14.8)



Multiple variance analysis (ANOVA test)

Response AOFAS Response VAS

p-value p-value

Radiol. Sublux. Implant 0.89 0.48

Radiol. Sublux. Sesamoids 0.90 0.93

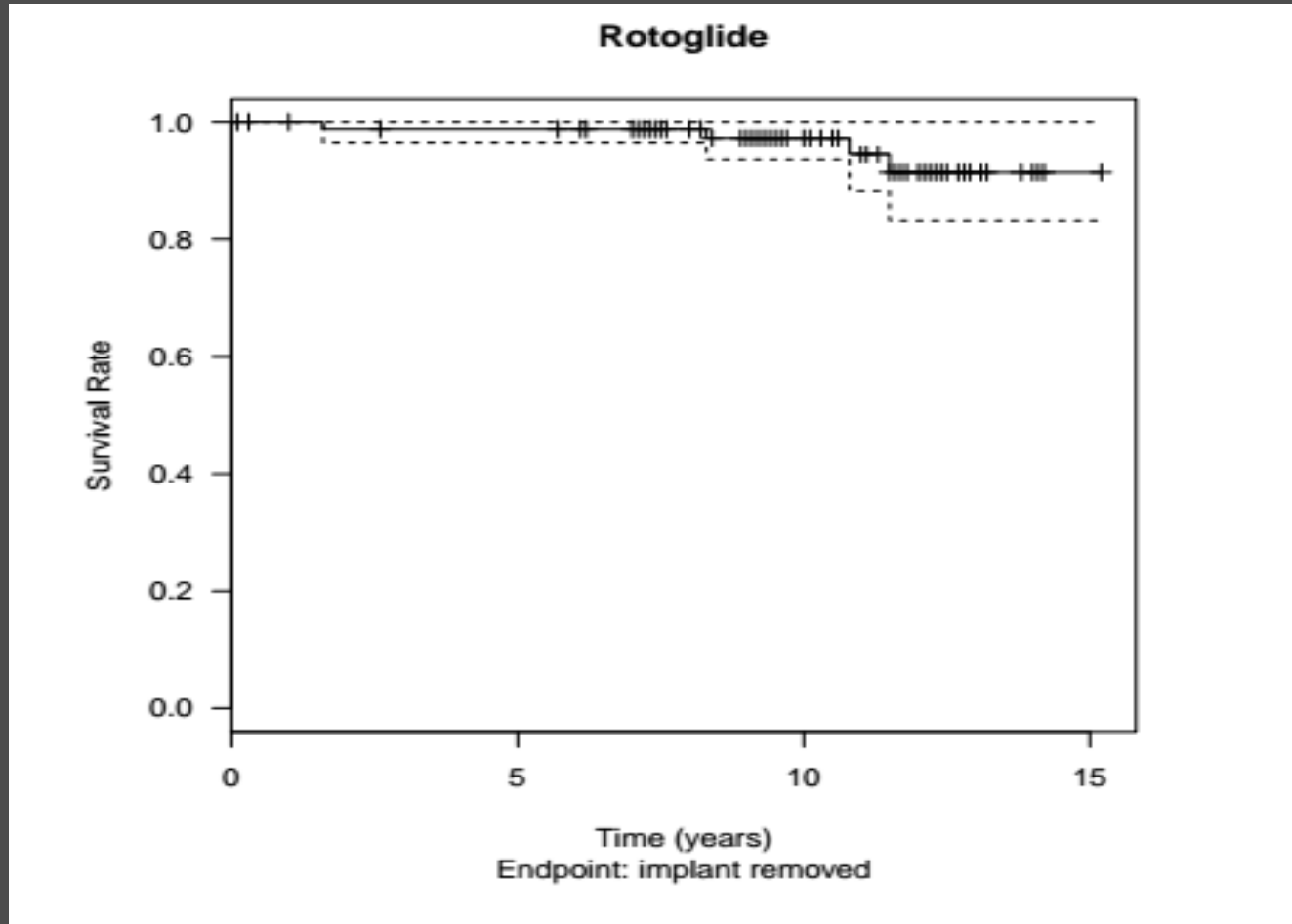
Radiol. Dorsiflex. 0.12 0.72

Radiol. Sesamoid arthrosis **0.0045*** **0.055***



Survival analysis 15 years (Kaplan-Meyer)

91.5% (83-100)



Conclusions:

The prosthesis has stood the test of time.

No aseptic loosening

High survival rate at 15 years.

Unsatisfactory results due to sesamoid arthrosis



Thank you

