Revue de chirurgie orthopédique
2007, 93, 364-372

MÉMOIRE

Comparaison entre embase tibiale métallique et plateau tout polyéthylène dans la prothèse totale de genou

A comparison of all-polyethylene and metal-backed tibial components in total knee arthroplasty

S. Dojcinovic *, T. Ait Si Selmi *, E. Servien *, P.C.M. Verdonk ***, P. Neyret *

* Centre Livet, Hôpital de la Croix Rousse, Hospices Civils de Lyon, 8, rue de Margnolles, 69300 Caluire.
** Département d'Orthopédie, Hôpital Universitaire, Gand, Belgique.

ESSKA 2000

Eposter in Isakos congress
Miami 2005

Comparison of all-polyethylene and metal-back tibial components in TKA

S Dojcinovic[1], T Ait Si Selmi[1], E Servien[1], PCM Verdonk[1,2], Ph Neyret[1]

- 1. Centre Albert Trillat, Hôpital de la Croix Rousse, Hospices Civils de Lyon, France
- 2. Orthopaedics department, University hospital, Ghent , Belgium

Hôpitaux de Lyon

Introduction

TKA All polyethylene

-Reliability
-Cost
-Cement

TKA Metal-Back

- Cold flow
- Polyethylene change (wear, laxity, infection)
- Mobile bearing
- Revision (wedge, stem)

Introduction

- 2 series: **169 TKA all poly - 169 TKA metal-back**
  matched-paired for: gender, sexe, diagnosis, FU
- 1989 ➡ 1995 (continuous series: 1008 HLS TKR)
- Anteromedial parapatellar arthrotomy
- Lost to FU: 4% all poly(n=6)
  2% metal backed (n=3)
- Clinical evaluation: IKS
- XRays evaluation: AP, P, Axial view, Long leg films
- Mean FU: 66 months

Introduction

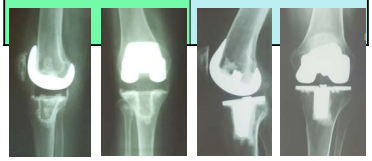
	All Poly n=169	Metal-back n=169
Gender	78% F 22% M	81% F 19% M
Diagnosis	137 arthrosis 19 inflammatory	142 arthrosis 22 inflammatory
Age	71 (43-92)	70 (40-89)
Weight (kg)	75 (37-118)	75 (36-110)

Results

	All Poly n=169	Metal-back n=169
Very satisfed or satisfed	96%	93%
IKS Knee Score	35 → 89	32 → 88
IKS Function Score	48 → 68	47 → 71
ROM	110 → 113	110 → 113
AFTm	175 → 178	177 → 178

X-Rays

All Poly n=169	Metal-back n=169



Non progressive radiolucient line — n=27 — n=23

Complications

	All Poly n=14		Metal-back n=3	
Reoperation after TKA	Stiffness	3		
	Extensor mechanism rupture	1		
	Patellar fracture	2	1	
	Tibial fracture	2		
	Femoral fracture	1		
	Patellar clunck syndrome	1		
	Pain	1		
	Excision cement	1		
	Sepsis	2	2	
	n=4		n=7	
Revision TKA	Aseptic loosening	1	Stiffness	1
	Wear	0	Oversizing	1
	Sepsis	3	Tibial loosening	1
			Patellar loosening	1
			Medial laxity	2
			Sepsis	1

Conclusion

* *Scuderi 2001, Keating 2001, Pavone 2002*

TKA All polyethylene

Reported in literature but not observed in this series

- Cold flow (theorical) ??
- Backside wear PE/Metal back* ??

Advantages

- Reliability
- Low cost ++

Disadvantages

- No long stem (severe OA)* - -
- No wear

Tayot, Neyret, Results of 376 TKR at 11.5 years,The Knee, 2001

TKA Metal Backed

Advantages

- Mobile bearing ++
- Modularity (stem, wedge) +++

Conclusion

Excellent results in both group with no difference for

- Complications
- Subjective result
- IKS score
- Rate of reoperation

and ……**Metal-back allows modularity**

References

- RAND JA : Comparison of metal-backed and all-polyethylene tibial components in cruciate condylar total knee arthroplasty. *J Arthroplasty*, 1993, *8*, 307-313.
- RODRIGUEZ JA, BAEZ N, RASQUINHA V, RANAWAT CS : Metal-backed and all-polyethylene tibial components in total knee replacement. Clin Orthop, 2001, *392*, 174-183.
- ADALBERTH G, NILSSON KG, BYSTROM S, KOLSTAD K, MILBRINK J: Low-conforming all-polyethylene tibial component not inferior to metal-backed component in cemented total knee arthroplasty: prospective, randomized radiostereometric analysis study of the AGC total knee prosthesis. J Arthroplasty ,2000,15(6):783-92.
- GIOE TJ, BOWMAN KR: A randomized comparison of all-polyethylene and metal-backed tibial components. Clin Orthop Relat Res, 2000,380,108-15.
- DEJOUR H, DESCHAMPS G, CHAMBAT P : La prothèse HLS. in Prothèses totales de genou. Cah. Ens. SO.F.C.O.T, Expansion Scientifique Française, Paris, 1989 ; n°35, 99-103.
- APEL DM, TOZZI JM, DORR LD: Clinical comparison of all-polyethylene and metal-backed tibial components in total knee arthroplasty. Clin Orthop Relat Res, 1991, 273, 243-252.
- ADALBERTH G, NILSSON KG, BYSTROM S, KOLSTAD K, MILBRINK J : All-polyethylene versus metal-backed and stemmed tibial components in cemented total knee arthroplasty. A prospective, randomized RSA study. J Bone Joint Surg (Br), 2001, 83, 825-831
- TAYOT O, AIT SI SELMI T, NEYRET P: Results at 11.5 years of a series of 376 posterior stabilized HLS1 total knee replacements. Survivorship analysis and risk factors for failure. Knee, 2001, 8, 195-205.
- SCUDERI GR, SCOTT WN, TCHEYEYAN GH. The Insall legacy in total knee arthroplasty.Clin Orthop Relat Res. 2001 Nov;(392):3-14.