

Title of Article: Patients Prefer a Bicruciate-Retaining or the Medial Pivot Total Knee Prosthesis
Author(s): James Pritchett - *Seattle, WA*
Citation: Journal of Arthroplasty, 26(2), p.224-8, 2011
Product(s): Various TKAs (ACL-PCL Retaining [ACL-PCL], Medial-Pivot [MP], Posterior Cruciate-Substituting, Mobile Bearing)
Written by: Karen Sedacki and David Fitch, Clinical Affairs

Publication Highlights

- This study investigated which TKA designs patients with well-functioning bilateral TKAs preferred at 2-years follow-up.
- **“Patients with bilateral total knee arthroplasties preferred retention of both cruciates with use of the ACL-PCL prosthesis or substituting with a MP prosthesis.”**

Publication Summary

Methods

- Prospective, randomized clinical study of 440 patients who underwent bilateral TKA for osteoarthritis
- Patients with fair and poor results in one or both knees were excluded
- Mean follow-up time: 6.8 yrs (range, 2-14); Mean time interval between TKAs was 2 yrs (range, 0.5-6)
- Mean Age: 68 yrs (range, 45-89); 70% Female (308 females)
- TKAs were performed using the following types of prostheses:
 - **Anterior-Posterior Cruciate Retaining (ACL-PCL)** (Biopro Inc.; MicroPort Orthopedics)
 - **Medial-Pivot (MP)** (MicroPort Orthopedics)
 - **Posterior Cruciate-Retaining (PCL)** (Biomet; DePuy; Stryker; MicroPort Orthopedics; Zimmer)
 - **Posterior-substituting (PS)** (Biomet; DePuy; Stryker; MicroPort Orthopedics; Zimmer)
 - **Mobile Bearing (MB)** (DePuy)
- All cases consisted of cemented components, resurfacing of the patella with an all-polyethylene button, and the same technique for ligament balancing
- At 2-year follow-up, patients were asked, “Which is your better knee overall,” to determine the patient’s preference
- Knee Society Scores and range of motion were also evaluated

Results

Patient Preference

- **The majority of patients preferred MP TKA over PS, PCL, and MB TKAs (Table 1)**

Table 1. Patient preference of implant type.

TKA	# of TKAs	Prefer Procedure 1 # (%)	Prefer Procedure 2 # (%)	Cannot Tell # (%)	p-Value
MP vs. PS	42	32 (76.2%)	4 (9.5%)	6 (14.3%)	<0.001
MP vs. PCL	50	38 (76.0%)	6 (12.0%)	6 (12.0%)	<0.001
MP vs. MB	83	51 (61.4%)	25 (30.1%)	7 (8.4%)	0.003
ACL-PCL vs. MP	64	31 (48.4%)	31 (48.4%)	2 (3.1%)	1.000
ACL-PCL vs. PCL	91	67 (73.6%)	17 (18.7%)	7 (7.7%)	<0.001
ACL-PCL vs. PS	46	41 (89.1%)	2 (4.3%)	3 (6.5%)	<0.001
PCL vs. PS	64	28 (43.8%)	27 (42.2%)	9 (14.1%)	0.893

- Patients preferred MP and ACL-PCL TKAs equally (48.4% each)

Clinical Scores and Function

- No significant difference was observed in mean range of motion (ROM), knee score, function score, and pain score

Overall Conclusion

- **In this study, patients who underwent bilateral staged TKAs were more likely to prefer ACL and PCL retention or a Medial-Pivot prosthesis over PCL, PS, and MB designs.**

Additional Notes: Summary of Pritchett's Response to Letters to the Editor Questions from Mootha and Annaparareddy

Citation: Journal of Arthroplasty, 26(6), p.980, 2011

Q: Did patients prefer the first replaced knee over the second in the series of 880 staged bilateral knee procedures?

A: *Pritchett did not find that the patients preferred the knee replaced first to the second knee replaced.*

Q: Were the preoperative Knee Society Scores comparable in patients?

A: *Both preoperative and postoperative Knee Scores were similar between different TKA types. Pritchett's group found that when asking the patients which knee felt most improved and which knee is your better knee overall, the response was the same.*

Q: Did the patients' preferences in knee prostheses remain constant over time?

A: *"Our patients did not change their preferences between visits over time."*

Q: Is an anatomic-bicruciate or one of the functional designs (posterior stabilized, posterior cruciate, medial pivot, or mobile bearing) the preferred choice for a total knee prosthesis?

A: *The current generation of the anatomic-bicruciate knee is preferred over all other current knees with functional designs.*