



RETROSPECTIVE OUTCOME STUDY OF TOTAL KNEE ARTHROPLASTY (MINIMUM 2 YEARS FOLLOW UP)

Orthopaedic

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KEYWORDS

INTRODUCTION

The knee joint is the largest articulation in the body. Also this is a main weight bearing joint of the body. The usual degenerative changes due to advancing age most commonly affect this joint. Diseases of this joint are alarming because if untreated it produces more and more pain and disability, for this reason various methods of management of knee joint ailments have been devised, but failure of conventional management in the advanced stage of knee arthritis have brought a new surgical era of total knee replacement. Arthroplasty is an operation to restore pain free motion to a joint and function to the muscles, ligaments and other soft tissue structures that control the joint.

AIMS AND OBJECTIVES

To study "2 year follow up of TKA patients" in terms of:

- Pain relief
- Range of motion of knee
- Functional improvements- To measure the functional outcomes
- Complications - To evaluate short term as well as long term complication rate
- Patient satisfaction

To evaluate the effects of certain factors on outcome of surgery:

- Age
- Sex
- Comorbid illness
- Indication for surgery
- Symptom duration
- Complications
- Comparison of disease with the range of motion and complications

MATERIAL AND METHODOLOGY

This retrospective study of cases operated in 2 years for total knee arthroplasty for various pathology of knee joint at the Orthopaedic Department, GG Hospital, Jamnagar. Cases were assessed with respect to postoperative results of short and long term follow up. All patients were operated through standard midline parapatellar approach with eversion of patella with cruciate substituting prosthesis with cemented TKA only.

Inclusion Criteria for the Study

- Males and females both
- >40 years
- Patients with rheumatoid arthritis included
- Patients on conservative treatment before
- Patients with bilateral involvement and underwent bilateral TKA
- Patients with pre-existing fracture around the knee
- Patients with post traumatic osteoarthritis

Exclusion Criteria from the Study

- Patients who are reactive to HIV, HbsAg
- Patients with revision TKA
- Patients with post infective arthritis
- Patients <40 years

RESULTS:

Patients were assessed on the basis of:

- Need for support of walking
- gait
- Movement at knee joint
- Incidence of complications

Results in terms of Function Scoring System

	POINTS	RECENT
1. FUNCTION:		
• Walking	50	
• Unlimited	40	
• >10 blocks	30	
• 5-10 blocks	20	
• <5 blocks	10	
• Housebound	0	
• Unable Stairs		
• Normal up & down	50	
• Normal up; down with rail	40	
• Up & down with rail	30	
• Up with rail; unable to down	15	
• Unable	0	
SUBTOTAL		
2. DEDUCTIONS (MINUS):		
• Cane	5	
• Two canes	10	
• Crutches or walker	20	
TOTAL DEDUCTIONS :		
FUNCTION SCORE :		

• Results in terms of Knee Scoring System

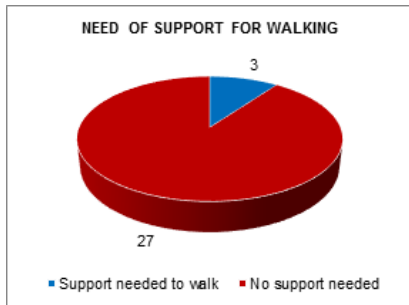
	POINTS	RECENT
1. PAIN:	50	
• None	45	
• Mild or occasional	40	
• Stairs only	30	
• Walking & stairs		
• Moderate	20	
• Occasional	10	
• Continual	0	
• Severe		
2. RANGE OF MOTION:		
5 Degrees=1 point	25	
Degree		
Point		
3. STABILITY: (maximum movement in any position)		
• Anteroposterior	10	
• <5 mm	5	
• 5- 10 mm	0	
• >10 mm		
• Mediolateral	15	
• <5 degree	10	
• 6- 9 degree	5	
• 10- 14 degree	0	
• 15 degree		
SUBTOTAL :		

4. DEDUCTIONS (MINUS):		
• Flexion contracture	2	
• 5-10 degree	5	
• 10-15 degree	10	
• 16-20 degree	15	
• >20 degree		
• Extension lag	5	
• <10 degree	10	
• 10-20 degree	15	
• >20 degree		
• Alignment	0	
• 5-10 degree	3/degree	
• 0-4 degree	3/degree	
• 11-15 degree	20	
• Other		
TOTAL DEDUCTION :		
KNEE SCORE (if total is a minus number, score is 0)		

Results in terms of patient satisfaction score				
Satisfaction	Enthusiastic	Satisfied	Not satisfied	Disappointed
With pain relief				
With functional improvement				
Overall satisfaction				

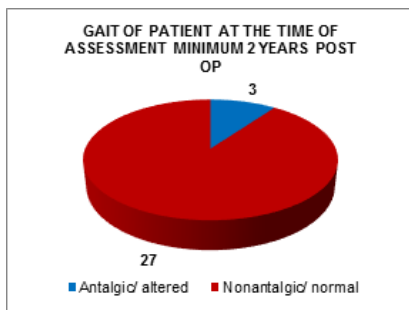
DISCUSSION:

(I) Need of Support for Walking



- Only 3 patients(10%) need support for walking in form of cane. They can stand without support but can't walk without support. No one needed walker.

(II) Gait of Patient at the Time of Assessment



- 27 patients (90%) patients had normal gait, remaining 3 patients (10%) had abnormal gait, most common being antalgic gait.

(III)MOVEMENTS OF KNEE JOINT

Movement	Range of movement (degree)	Number of patients	Percentage
Flexion	>=120	3	10%
	90-119	24	80%
	40-89	2	6.67%
	<40	1	3.33%
Total		30	100%
Extension	=<0	29	96.67%
	>0	1	3.33%
Total		30	100%

Extension lag	<10 degree	1	3.33%
	10-20 degree	0	0%
	>20 degree	0	0%
Total		1	3.33%
FFD	5-10 degree	0	0%
	10-15 degree	0	0%
	15-20 degree	0	0%
	>20 degree	0	0%
Total		0	0%

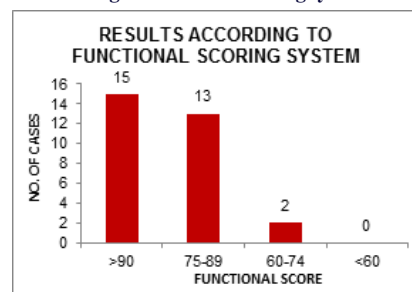
- Flexion: Average: 90, Maximum: 120, Minimum- 10
- Most of the patients (80 %) have flexion from 90° to <120°.
- Average extension achieved is 0°.
- Only one patient has extension lag of <10°.
- FFD is not found in any patient.

(IV) Incidence of complications

Complications	No. of patients	Percentage
Infection		
• Superficial	0	0%
• Deep	0	0%
DVT	0	0%
Implant loosening	0	0%
Patellofemoral complications	0	0%
Neurovascular complications	0	0%
Periprosthetic fracture	0	0%
Wound complications	0	0%
Subluxation	0	0%
Dislocation	0	0%
Malalignment	0	0%
Instability	0	0%
Radiographic Osteolysis	1	3.33%
Others	0	0%

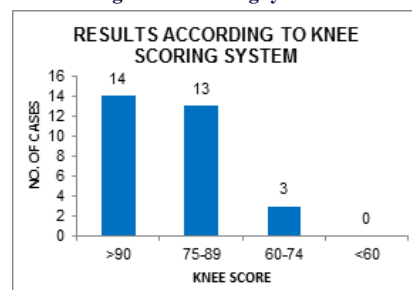
- Only 1 patient (3%) x ray shows Radiographic Osteolysis.
- No patient has infection, loosening, DVT, dislocation, patellofemoral complications.

(V) Results according to functional scoring system



- Maximum functional score is 100 which are present in 12 patients.
- Average functional score is 84.66.
- Minimum score is 50 which are seen in the patient with primary OA knee. He has knee score of 81 with complain of pain and instability with flexion up to 90° and extension up to 0° possible and the patient is disappointed with TKA. Patient walks with stick support.
- 28 patients (93 %) have functional score >= 85.

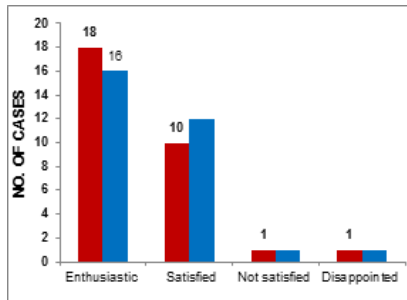
(VI) Results according to knee scoring system:



- Maximum knee score is 95 seen in 5 patients.
- 27 (90%) patients have score >=85.

- Minimum knee score is 60 found in a 65 year old female patient operated 08 years back.
- Average knee score is 85.3.

(VII) Patient satisfaction score



- 18 patients (60.0 %) are enthusiastic for TKA and they accept the fact that if they are allowed, they would like to go for TKA in other extremity as well as in other family members too.
- 10 patients (33.33%) are satisfied.
- 1 patient is not satisfied and 1 patient is disappointed

DISCUSSION

- In our study only 3 patients (10%) needed aid in walking in form of cane. This is comparable to “Research article open access- Dependence on walking aids and patients - reported outcomes after TKA by Jasvinder A Singh1-3* and David G Lewallen” Published in Journal on Arthritis ISSN 2167-7921, which is 6.2-8.2%.
- 10% (3 out of 30) patients have antalgic gait at 2 year followup after TKA which is comparable to Denon lee et al. Series which has 15% patients with antalgic gait following TKA.
- In our study Flexion: Average: 90, Maximum: 120, Minimum- 10. In study conducted by Man sookim et al the average flexion was 126.7
- In our study average knee score is 85.3 and >90% patients have score > 85 which is comparable to Man sookim et al. which is 90.3%
- In our study average functional score is 84.66 and 93.33% patients have functional score > 90 which is comparable to Rahul V kadam et al. Series in which 92.5% patients have functional score >90.
- In our study 93.33%(27 out of 30) patients are satisfied with the surgery which is comparable to Lostal J et al. which is 90.2%.

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