ORIGINAL RESEARCH PAPER

Orthopaedics

USE OF KRACKOW SUTURES IN PATIENTS WITH LOWER POLE PATELLA FRACTURES:A CLINICAL OUTCOME STUDY

KEY WORDS:

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ABSTRACT

Introduction: Patients with distal pole fractures of the patella have a disrupted extensor mechanism, which results in considerable functional disability. The ideal method should comply with three crucial demands: it should aid in reduction of the fracture, provide stable fixation and enable early rehabilitation. In the present study we have observed the functional outcome in lower pole patella fracture managed by krackow sutures by using ICF (International Classification of Functioning disability & health) questionnaire. **Material And Methods:** It was a clinical outcome observation study carried out in 40 patients of lower pole patella fracture presented in Dept of orthopedics, Dr. PDMMC, Amravati over a period of 1 year from Aug 1, 2021 to July 31, 2022. Patients were assessed functionally by ICF questionnaire. On one and half months, 3 months & 6 months of surgery. **Results:** Post- operative health assessment was done using ICF method where we did the assessment of general mental & emotional health after 6 months of surgery, a total of 66.6 % patients rated their health as good to very good & 79 % patients had mild to moderate impairment because of pain. In terms of functional assessment, 68% patients had no to mild impairment in performance & capacity & 31.48% patients had moderate impairment in performance in capacity for washing oneself. None of the patients observed with severe to very severe limitations after the surgery. 70% patients had mild to moderate impairment in performance in capacity & 29% patients had severe impairment in performance in toileting & dressing. **Conclusuion:** It is concluded that significant change was seen in quality of life of patients post-operatively as evidenced by ICF questionnaire used in present study.

INTRODUCTION:

Patients with distal pole fractures of the patella have a disrupted extensor mechanism, which results in considerable functional disability. These fractures, particularly multi. fragmentary fractures, are difficult to treat, and reconstruction with preservation of the inferior patellar pole with a normal height of the patella is sometimes impossible to achieve with standard techniques. The ideal method should comply with three crucial demands: it should aid in reduction of the fracture, provide stable fixation and enable early rehabilitation.Various methods have been introduced to fix distal patellar pole fractures,Operative fixation of displaced patella fractures has now become the standard of care for these injuries[8].The modified anterior tension band technique using Kirschner wire (K.wire) is one of the most common methods used for the fixation of inferior patellar pole fractures. Although the K.wire and tension band technique remains popular, patients frequently complain of discomfort secondary to prominent hardware, leading to high rates of removal of hardware (ROH).Thus, revision surgery with K.wire removal becomes necessary in up to 65% of cases.A novel technique that employs the application of krackow sutures to the patella and reattachment of the distal fragments together with the patellar tendon has recently been described . and apparently sufficient for fracture fixation and early mobilization the present study aims to evaluate the improvement in health of the patient following the surgery using ICF questionnaire.

MATERIALS & METHODS:

It was a clinical outcome assessment carried out in the dept of Orthopedics, Dr. PDMMC , Amravati. The study population was comprised of individuals coming with distal pole fractures of the patella over a period of 1 year from Aug 1, 2021 to July 31, 2022. Patients were assessed functionally by ICF questionnaire. On one and half months, 3 months & 6 months of surgery.

RESULTS:

40 patients were eligible for inclusion in the study. There was female preponderance with female/male ratio being 23/17

International Classification Of Functioning, Disability And Health (ICF) General Health & Mental and emotional Health

Table 1: General Health & Mental and emotional Health

parameters	Pre-injury					6 months				
	1	2	3	4	5	1	2	3	4	5
General heath	-	-	2	23	15	-	-	14	17	9
Mental & emotional health	-	-	10	15	15	-	-	11	20	9

1= very bad, 2= Bad, 3= modeate, 4= Good, 5=Very good.

General health assessment using ICF method shows that 94.4% patients rated their health before injury as good to very good. After 6 months of the surgery, a total of 66.6% patients rated their health as good to very good.

Table 2: Pain

Responses	Pre-injury	6 months
No impairment	40(100%)	-
Mild impairment	-	31 (77.78%)
Moderate impairment	-	9 (22.22%)
Severe impairment	-	-
Complete impairment	-	-

0=No Impairment; 1=Mild Impairment; 2=Moderate Impairment; 3-Severe Impairment; 4-Complete Impairment

Impairment Pain assessment using ICF method shows that 40 (100%) patients had no impairment because of pain before injury. After 6 months of surgery, a total of 39 patients had mild to moderate impairment because of pain.

Functional Assessment after six months of Surgery

Table 3: Functional Assessment after six months of Surgery

Sr. no.	Pre-injury									6 Months									
	performance					capacity					performance					capacity				
Score	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4	0	1	2	3	4
Lifting & carrying	80	-	-	-	-	80	-	-	-	-	-	40	40	-	-	-	40	40	-	-
Washing	80	-	-	-	-	80	-	-	-	-	40	15	25	-	-	40	15	25	-	-
Toileting	80	-	-	-	-	80	-	-	-	-	-	40	16	23	-	-	40	16	23	-
Dressing	80	-	-	-	-	80	-	-	-	-	-	40	16	23	-	-	40	16	23	-

0=No Impairment; 1=Mild Impairment; 2=Moderate Impairment; 3-Severe Impairment; 4-Complete Impairment

After 6 months of surgery 100 % patients had mild to moderate impairment in the performance and the capacity for lifting and carrying objects. None of the patients observed with severe to very severe limitation after the surgery. Sixty eight percent (68.52%) patients had no to mild impairment in the performance and the capacity and 31.48% patients had moderate impairment in performance and capacity for washing oneself. None of the patients observed with severe to very severe limitation after the surgery. Seventy percent (70.0%) patients had mild to moderate impairment in the performance and the capacity and 29.37% patients had severe impairment in performance and capacity for toileting and dressing.

DISCUSSION

In our study we have used ICF questionnaire for the evaluation of functional outcome among patients of a distal pole of patella fractures managed by using krackow sutures. Search of similar literature through various databases did not yield any comparable study. Analysis of our own results using ICF questionnaire had shown marked improvement in various domains of health.

CONCLUSION

We consider that krackow sutures is reliable surgical technique which offers the advantage of closed procedure with a more stable biomechanical construct. In the face of good functional outcome, we find use of krackow sutures over the tension band wiring to be of particular interest and perfectly suitable for the management of distal pole of patella fractures.

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