

Complication Of Anterior Cruciate Ligament Reconstruction By Press-Fit Fixation Technique

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Abstract

Background: Press-fit fixation allows direct bone to bone healing and reduces the number of disadvantage associated with the hardware fixation such as graft laceration, bone resorption, chronic synovitis or allergic reactions.

Methods: It was a hospital based prospective observational study From November 2015 to March 2017. Study was conducted in the Department of Orthopaedics, Lady Hardinge Medical College and Associated Dr. Ram Manohar Lohia Hospital, New Delhi-110001.

Results- In our study two out of twenty patients developed complications. One patient developed deep infection of knee joint for which irrigation and lavage was done and second one patient developed superficial infection at graft donor site for which oral antibiotics were given. Both patients improved after intervention.

Conclusion: The complication of arthroscopic ACL reconstruction by knot/press fit fixation technique using semitendinosis graft were less and comparable to western literature.

Keywords: ACL reconstruction, Press-fit fixation, Complication.

The anterior cruciate ligament (ACL) is regarded as critical to the normal functioning of the knee, and it is one of the most frequently injured ligaments in the human

body. Its rupture affects knee stability, which may cause giving way symptoms, increased risk of meniscal injuries, and early onset of joint degeneration¹.

Intra-articular ACL reconstruction with autogenous tissue is the standard method of treatment. Traditionally the Bone-patellar tendon-bone autograft is the gold standard but semitendinosus and gracilis tendons are increasingly used to minimize the donor site morbidity and long term results are comparable.

Now a days many different fixation devices are available for soft tissue grafts or BTB grafts. Excellent clinical results may be demonstrated with wide range of options. The best fixation method has not yet been defined. The majority of devices tested, exceeded the physiological load of healthy ACL².

Due to the rising cost of health-care and implant related complication, an increase in interest in ACL press-fit fixation was noted with encouraging clinical studies in medium and long term.³

Press-fit fixation allows direct bone to bone healing and reduces the number of disadvantage associated with the hardware fixation such as graft laceration, bone resorption, chronic synovitis or allergic reactions.⁴ Another important feature is easier revision of ACL in press-fit fixation.

Material And Methods

Study Design

It was a hospital based prospective observational study.

Study Period

From November 2015 to March 2017.

Study Place

Study was conducted in the Department of Orthopaedics, Lady Hardinge Medical College and Associated Dr. Ram Manohar Lohia Hospital, New Delhi-110001.

Study Population

Patients presenting with clinical and or radiological signs of anterior cruciate ligament tear to the Orthopaedics OPD/ emergency.

Sample Size

A sample size of 20 patients were taken.

Inclusion Criteria

All skeletally mature patients with:

- Clinical and radiological sign of anterior cruciate ligament tear

Exclusion Criteria

- Patients with bony avulsions of ACL
- ACL tear with unstable meniscal injury/other ligament injury
- Any history of previous knee surgery
- Patients with stiff knee/osteoarthritis of knee

Statistical Evaluation

Data was coded and entered in SSPS software for analysis. Qualitative data obtained were expressed as proportions and Chi square test was applied to find out statistical significance. For quantitative data, mean and standard deviation was calculated and Student’s T-test (unpaired) was applied to find out the statistical significance. P value of < 0.05 was considered significant.

Observation And Results

This study was conducted in the Lady Hardinge Medical College and Associated Ram Manohar Lohia Hospital,

New Delhi from November 2015 to March 2017. The patients were included after taking their consent for the study.

Table 1: Age Distribution of Patient

AGE	NO	PERCENT
<20	3	15
21-30	8	40
31-40	5	25
40-50	4	20

20 patients were included in the study after taking their consent. Maximum number of patients were in age group 21-30 years. The average of the patient been 31.9 years.

Table 2: Sex Distribution

SEX	NO	PERCENT
MALE	19	95
FEMALE	1	5

95.00% Patients were male and 5.00% patients were female.

Table 3: Mode of Injury

MODE OF INJURY	NO	PERCENT
RTA	12	60
TWISTING	4	20
FALL	2	10
PLAYING	2	10

60.00% patients were from road traffic accident.

Table 4: Mean of Range of Motion

	Range of Motion
Preoperatively	124.5
Intraoperatively	125.50
4 th week postoperatively	97.00
6 th Week postoperatively	116.50
12 th Week postoperatively	125.00

Table 5: Mean of Rollimeter Reading

	Roli Meter Reading (mm)
Preoperatively	7.8
4 th week postoperatively	2.10
6 th Week postoperatively	2.25
12 th Week postoperatively	2.30

Table 6: Proportion of Patients Showing Complications

Complications	frequency	Percent
Deep infection knee jt	1	5
Sup Infection at tibial site	1	5
Total	2	10

In our study two out of twenty patients developed complications. One patient developed deep infection of knee joint for which irrigation and lavage was done and second one patient developed superficial infection at graft donor site for which oral antibiotics were given. Both patients improved after intervention.

Discussion

This study of “Outcome of Anterior cruciate ligament reconstruction by press fit fixation technique” was conducted in the Department of Orthopaedics, Lady Harding Medical College and associated Dr . R.M.L Hospital. It was a prospective observational study in which 20 patients with clinical and radiological signs of Anterior Cruciate Ligament tear were included. History, clinical examination, haematological tests for pre-anaesthetic check up and radiological examination of injured knee were done and analysed.

In our study, the most common age group to which the patients belong were from 21 to 30 years constituting 40% and next most common age group were from 30 to 40 years constituting 25%. **Noyes et al** (1983) concluded that athletes sustain this injury usually during the peak of sporting career in mid third decade.⁵

Griffin et al (2001) stated that females injured their ACL at alarmingly higher rates due to various intrinsic factors like alignment, hyperextension, physiological rotatory laxity, ACL size, notch size and shape, hormonal influences, inheritant skills and coordination, Extrinsic factors like strength, shoes and motivation.⁶ However, in our study 19 (95%) patients were male due to sedentary lifestyle in India.

Seaglione et al (1990) published that most common mode of injury were sports related (90%). However, in our study most common mode of injury was RTA (60%). Other mode of injury were twisting (20%), fall (10%) and playing (10%).⁷

Complications of ACL reconstruction surgeries are pain not controlled with analgesia (6.7%), hemarthrosis that require arthrocentesis (4.4%), fever (3.2%), deep vein thrombosis (0.6%) and cellulitis (0.6%) [**P. Andres Cano, M. Gudino, M. Vides, E. Guerado** in 2015].⁸ In our study two out of twenty patients developed complications. One patient developed deep infection of knee joint for which irrigation and lavage was done and second one patient developed superficial infection at graft donor site for which oral antibiotics were given. Both patients improved after intervention.

Conclusion

The complication of arthroscopic ACL reconstruction by knot/press fit fixation technique using semitendinosis graft were less and comparable to western literature.

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