

## TO ESTIMATE OUTCOME OF ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING IPSILATERAL HAMSTRING AUTOGRAFT

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### Abstract

**Background & Method:** The study consists of 60 patients who had undergone Arthroscopic ACL reconstruction using ipsilateral hamstring autograft at the Department of Orthopedic of Amaltas Institute of Medical Sciences, Dewas, M.P.

**Result:** Number of male patient being 58 (96.6%) and female being 02 (3.33%). Right side has shown to be most predominantly involved in this series 32(53.4%) as compared to the left side 28(46.6%). Road traffic accident were found to be the most common mode of injury - 26 (43.3%) as compared to other mode of injuries, sports -14 (23.3%), fall -18 (30%).

**Conclusion:** Males are more prone for anterior cruciate ligament injuries. Arthroscopic ACL reconstruction using HAMSTRING autograft provides a stable knee with minimal complications. Arthroscopic anterior cruciate ligament reconstruction reduces post-operative pain and helpful in early rehabilitation

**Keywords:** ligament, ipsilateral & hamstring

**Study Designed:** Observational Study.

### Introduction

Development of knee joint can first be detected at approximately 4 weeks stage. It begins as a concentration of mesenchyme, the so called 'precartilage stage'. Future femur and tibia become recognizable only when an area of mesenchyme between these two precartilage representations appear [1]. Progress is rapid and by 6 weeks knee joint is discernible. ACL itself appears as a condensation in the blastoma at about 6.5 weeks [2]. It appears well before joint cavitation and remains extra synovial at all times. The fact that cruciate ligament and semilunar cartilage are derived from the same blastoma tends to corroborate the theory that these structures function in concert.

In a normal adult the ACL averages about 4 cm in length and 1 cm in width. The ACL is a band of regularly oriented dense connective tissue that connects the femur and tibia [3]. The ACL is attached to a fossa on the posterior aspect of the medial surface of the lateral femoral condyle above, and to a fossa in front of and lateral to anterior tibial spine below. It is surrounded by a mesentery like fold of synovium that originates from posterior area of the knee and completely envelopes both ACL and PCL. Thus, although the cruciate ligaments are intra articular they are also extra synovial [4].

The irony of ACL being crucial to the well being of the knee joint has only been recently appreciated [5]. The axiom 'form reflects function' is relevant to the ACL, because of its construct and design which is directly related to its function as a constraint to joint motion.

### Material & Method

The study consists of 60 patients who had undergone Arthroscopic ACL reconstruction using ipsilateral hamstring autograft at the Department of Orthopedic of Amaltas Institute of Medical Sciences, Dewas, M.P. from Feb 2019 to Jan 2020.

### Inclusion criteria

- Willingness to participate and follow up
- No prior knee surgery
- Normal contralateral knee
- Clinical evaluation of instability by surgeon

### Exclusion criteria

- ACL injuries with associated intra articular fractures
- Osteoarthritic changes in X-ray

### Results

**Table 1: Gender wise distribution**

Sex	Patients	Percentage
Male	58	96.6%
Female	02	3.33%
Total	60	100%

Number of male patient being 58 (96.6%) and female being 02 (3.33%).

**Table 2: Distribution according to laterality**

Side	Patients	Percentage
Left	28	46.6%
Right	32	53.4%
Total	60	100%

Right side has shown to be most predominantly involved in this series 32(53.4%) as compared to the left side 28(46.6%).

**Table 3: Distribution according to Mode of Injury**

Mode	Patients	Percentage
Sports injury	14	23.3%
RTA	26	43.3%
Fall	18	30%
Non -specific	02	3.4%
Total	60	100%

Road traffic accident were found to be the most common mode of injury - 26 (43.3%) as compared to other mode of injuries, sports -14 (23.3%), fall -18 (30%)

### Discussion

The anterior cruciate ligament (ACL) serves an important structure for stabilizing and biomechanical function of the knee. Reconstruction of the ACL remains one of the most commonly performed procedures in the field of sports medicine [6]. Several factors have been identified as significantly influencing the biomechanical characteristics and the functional outcome of an ACL re-constructed knee joint [7].

Reddy, Vadlamani et al [8] (2015), Anterior knee instability associated with rupture of the ACL is a disabling clinical problem. The ACL has a poor capacity of intrinsic repair. Thus for patient who have knee symptoms related to ACL deficiency, one may consider ligament reconstruction as a mean of stabilizing, Tibio-femoral articulation and restoring high level function of knee joint. Arthroscopic assisted ACLR has the advantage of being minimally invasive, accurate graft placement, less disturbance of normal tissue resulting in quicker recovery and rehabilitation, minimal hospital stay and very less infection.

Amelia J. Wiggins Ravi. K. Grandi [9] et al (2016) Dept of orthopaedic Surgery cinninnati USA studied the risk of secondary injury in younger atheletes after anterior cruciate ligament reconstruction. After a metaanalysis study they demonstrated that young age atheletes who sustain an ACL injury and return to high risk sports may have chances of another ACL injury. But activity modification, improved rehabilitation and use of proper rehabilitation exercises reduces second injury.

Robindro P [10], Latchumi NVK et al 2016, studied the functional outcome of arthroscopic ACL reconstruction using hamstring graft fixed with endobutton for femur and interference screw for tibial fixation concluded that ACL reconstruction when performed with technical precision has

become a reliable surgical technique with a predictable result. Successful results can be achieved via anatomical reconstruction, proper fixation.

### Conclusion

Males are more prone for anterior cruciate ligament injuries. Arthroscopic ACL reconstruction using HAMSTRING autograft provides a stable knee with minimal complications. Arthroscopic anterior cruciate ligament reconstruction reduces post-operative pain and helpful in early rehabilitation.

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