

ANALYSIS OF ANATOMICAL VARIANT OF NORMAL POSTERIOR CRUCIATE LIGAMENT FOOTPRINTS USING MRI STUDIES

Laila Maisarah binti A. Rahman^{1*}, Khairul Nizam bin Siron@Baharom² and Elinah binti Ali³

¹Department of Orthopaedics, Traumatology and Rehabilitation, International Islamic University Malaysia (IIUM), Kuantan, Malaysia

²Sports Unit, Department of Orthopaedics, Department of Orthopaedics, Traumatology and Rehabilitation, International Islamic University Malaysia (IIUM), Kuantan, Malaysia

³Radiology Department, Hospital Sultanah Nur Zahirah, Kuala Terengganu, Terengganu, Malaysia

*Corresponding author's email: laila_isabell86@yahoo.co.uk

ABSTRACT

Introduction: The anatomy of normal PCL is not extensively studied. In recent years, MRI can provide surgeon with accurate and detail parameters of the ligament to guide in preparing near-anatomical graft for reconstruction of injured PCL.

Objective: To study the anatomical variant of PCL footprints from MRI by measuring the length, thickness, and width of PCL tibial and femoral footprints. Methodology: This is a single centre observational cross-sectional study which analyse the anatomy of normal PCL from MRI of the knee done for sports injury between January 2013 until January 2017. The measurements of the length, thickness, and width of PCL tibial and femoral footprints were taken and the mean values and comparison between genders and age were made.

Result: 240 MRIs were recruited with mean age of 26.7. 71.3% are of males and 28.7% are females. 196 images are from male subjects and 44 from female subjects. The age ranges from 17 to 45 with mean age of 26.7. The reported normal PCL mean length is 38.79mm (± 1.69), thickness 4.25mm (± 0.41), width at femoral attachment 10.57mm (± 0.80), width at tibial attachment 10.76mm (± 0.53). The length and width at tibial attachment showed greater value in males than female ($p < 0.001$). However, when compared between young and middle age groups within each gender, there was no significant difference ($p > 0.05$).

Conclusion: The measurement of length, width, and footprints of normal PCL from MRI has significant difference among genders but no significant difference among young and middle-aged subjects in Malaysian population.

Keywords: Posterior Cruciate Ligament (PCL), Magnetic Resonance Imaging (MRI)

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