ABSTRACT

**Background:** An alternative physical examination procedure for evaluating the integrity of the anterior cruciate ligament (ACL) has been proposed in the literature but has not been validated in a broad population of patients with a symptomatic complaint of knee pain for its diagnostic value.

**Purpose:** To investigate the diagnostic accuracy of the Lever Sign to detect ACL tears and compare the results to Lachman testing in both supine and prone positions.

**Study design:** Prospective, blinded, diagnostic accuracy study.

**Methods:** Sixty-two consecutive patients with a complaint of knee pain were independently evaluated for the status of the ACLs integrity with the Lever Sign and the Lachman test in a prone and supine by a blinded examiner before any other diagnostic assessments were completed.

**Results:** Twenty-four of the 60 patients included in the analysis had a torn ACL resulting in a prevalence of 40%. The sensitivity of the Lever Sign, prone, and supine Lachman tests were 38, 83, and 67 % respectively and the specificity was 72, 89, and 97% resulting in positive likelihood ratios of 1.4, 7.5, and 24 and negative likelihood ratios of 0.86, 0.19, and 0.34 respectively. The positive predictive values were 47, 83, and 94% and the negative predictive values were 63, 89, and 81 % respectively. The diagnostic odds ratios were 1.6, 40, and 70 with a number needed to diagnose of 10.3, 1.4, and 1.6 respectively.

**Conclusions:** The results of this study suggest that Lever Sign, in isolation, does not accurately detect the status of the ACL. During the clinical examination, the Lever Sign should be used as an adjunct to the gold standard assessment technique of anterior tibial translation assessment as employed in the Lachman tests in either prone or supine position.

**Level of Evidence:** 2

**Key Terms:** Anterior cruciate ligament, diagnosis, knee, Lachman test, Lever Sign, sensitivity, specificity