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CONTEXT
The diagnostic accuracy of the Lever Sign (LS) in detecting acute anterior cruciate ligament (ACL) lesions is not well documented.

OBJECTIVE
To assess the diagnostic accuracy of the LS in relation to the Lachman's Test (LT), and Drawer Test (DT) in the detection of acute ACL lesions, including a population with an intact ACL.

DESIGN AND SETTING
Retrospective record review; collegiate and high school athletes.

PARTICIPANTS
A total of 70 records were collected and reviewed over 1 year consisting of 46 (66%) males and 24 (34%) females. Average age of the patients were 17.6 ± 2.0 years, 50 (71%) records were collected from high school athletics and 20 (29%) from collegiate athletics.

INTERVENTION
Data were reviewed through a knee inventory report form distributed to participating athletic trainers. The report form collected de-identified information pertaining to an acute (< 72 hours postinjury) knee injury. Data included: Date of initial injury, date and time of clinician examination, sex, age, participation level, knee girth measurement, clinician findings from the LT, DT and LS, diagnostic technique findings, athletic trainer diagnosis and definitive diagnosis.

MAIN OUTCOME MEASURES
Based on the disposition of the patient four reference standards were used in this study: Arthroscopy, magnetic resonance imaging, physician diagnosis, and functional return to play. The DT and LT were performed 69 times and the LS 42 times. A 2 x 2 contingency table including 95% confidence intervals was created. A receiver operating characteristic (ROC) curve was calculated. Data were then grouped by findings: laxity and patient-perceived pain.

RESULTS
The LS yielded a sensitivity of .85 and specificity of .97. The LT and DT yielded a sensitivity of .75 and .60 and a specificity of .94 and .96. ROC curves demonstrated that the LS produced an area under the curve (AUC) of .88. The LT and DT produced an AUC of .83 and .77. Forty percent of patients reported pain when the LS was performed on an ACL lesion and 13% when an ACL lesion was not present. No statistically significant differences were identified among the 3 tests.

CONCLUSION
Although not statistically significant, the LS produced a better diagnostic accuracy in the detection of acute complete ACL lesions. The LS had a decreased frequency of patient-perceived pain, decreasing the chance of false

1

negatives. We propose that clinicians can use the LS in the assessment of ACL lesions.

KEY POINTS

- The LS produced the greatest diagnostic accuracy in the detection of acute complete ACL lesions, but was not statistically different from the LT or the DT.

- The LS had a decreased frequency of patient-perceived pain when performed on an acute knee injury compared to the other 2 tests, potentially decreasing the probability of a false negative.

KEY WORDS: *acute knee injury, diagnostic accuracy*