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Original Research

The Diagnostic Value of the Clarke Sign in Assessing Chondromalacia Patella

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Abstract

Context: Various techniques have been described for assessing conditions that cause pain at the patellofemoral (PF) joint. The Clarke sign is one such test, but the diagnostic value of this test in assessing chondromalacia patella is unknown.

Objective: To (1) investigate the diagnostic value of the Clarke sign in assessing the presence of chondromalacia patella using arthroscopic examination of the PF joint as the "gold standard," and (2) provide a historical perspective of the Clarke sign as a clinical diagnostic test.

Design: Validation study.

Setting: All patients of one of the investigators who had knee pain or injuries unrelated to the patellofemoral joint and were scheduled for arthroscopic surgery were recruited for this study.

Patients or Other Participants: A total of 106 otherwise healthy individuals with no history of patellofemoral pain or dysfunction volunteered.

Main Outcome Measure(s): The Clarke sign was performed on the surgical knee by a single investigator in the clinic before surgery. A positive test was indicated by the presence of pain sufficient to prevent the patient from maintaining a quadriceps muscle contraction against manual resistance for longer than 2 seconds. The preoperative result was compared with visual evidence of chondromalacia patella during arthroscopy.

Results: Sensitivity was 0.39, specificity was 0.67, likelihood ratio for a positive test was 1.18, likelihood ratio for a negative test was 0.91, positive predictive value was 0.25, and negative predictive value was 0.80.

Conclusions: Diagnostic validity values for the use of the Clarke sign in assessing

chondromalacia patella were unsatisfactory, supporting suggestions that it has poor diagnostic value as a clinical examination technique. Additionally, an extensive search of the available literature for the Clarke sign reveals multiple problems with the test, causing significant confusion for clinicians. Therefore, the use of the Clarke sign as a routine part of a knee examination is not beneficial, and its use should be discontinued.

Scott T. Doberstein, MS, LAT, ATC, CSCS, contributed to conception and design; analysis and interpretation of the data; and drafting, critical revision, and final approval of the article. Richard L. Romeyn, MD, and David M. Reineke, PhD, contributed to acquisition and analysis and interpretation of the data and critical revision and final approval of the article.

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